Middle East Journal of Family Medicine

ISSN 148-4196

December 2008 - Volume 6, Issue 10

From the Editor

Abdulrazak Abyad
MD, MPH, AGSF, AFCHS
(Chief Editor)

Editorial office:
Abyad Medical Center &
Middle East Longevity Institute
Azmi Street, Abdo Center
PO BOX 618
Tripoli, Lebanon
P + (961) 6 443684
F + (961) 6 443685
E aabyad@cyberia.net.lb
W www.amc-lb.com

The year is at an end and the editorial board and the production team wish all the readers a happy end of year holiday and happy new year. As usual this issue is rich with various papers from the region. A cross sectional survey from Qatar looked at Primary care physicians' knowledge, attitude, and practice toward obesity management. The author estimated that in Qatar, about 29.3% of females and 17.4% of males are obese. More than two thirds of physicians agreed that primary care physicians have a major role in obesity management. The authors concluded that knowledge gaps and ambivalent attitudes toward obesity management are common.

A paper from Libya looked at HPV vaccine type, Gardasil. The author stressed that cervical cancer is the commonest type of all cancers that affect women world wide. It is closely linked to HPV infection; especially HPV 16 and 18 strains which cause the lining of the cervix to change from normal to pre-cancerous lesions, which if not detected and treated can change to cancer. The author reviewed HPV epidemiology, Pap screening in the era of HPV vaccination, and the proposed and approved Gardasil vaccine to combat cervical cancer in terms of effectiveness, tolerability, safety and pricing; including Gardasil dosing, and administration, and its importance in life-saving vaccines against cervical cancer.

A paper from Iran looked at supporting services and quality of life in people with multiple sclerosis. Sixty files were reviewed. There is a significant relationship between supportive services and these items: Promotion of somatic health, decrease in somatic/emotional limitations in performance of the role, increase in psychological health, fatigue decline, increase in sense of health, optimization of cognitive and social performance, decrease in anxiety regarding health, improvement in health conditions and promotion of life style from the patients' point of view. There is no significant relationship between supportive services and increase in sexual performance of patients and pleasure from their sexual performance. The authors concluded that according to the results of this study some procedures and activities can be used for increasing supportive services levels in MS patients who need these services in order to promote their quality of life.

A paper from Jordan looked at early performance of imaging studies after the first urinary tract infection. The authors looked at the yield and potential risks/benefits of early compared to late performance imaging studies such as renal ultrasonogram (RUS) and if needed, voiding cystourethrogram (VCUG) after UTI.

The authors concluded that performing RUS early does not influence the detection rate, severity of mild to moderate renal pelvic dilatation, or risk of secondary infection; it shortens the period of prophylactic use and increases performance rate of VCUG, thereby minimizing the risk of failure to detect VUR. The traditional recommendation of performing VCUG 3-6 weeks after the diagnosis of UTI should be re-evaluated.

Health care professionals including family physicians increasingly become involved in public health data analyses. The first part of a series of papers from Iran looked at issues whereby data visualisation is the first step in data analyses, which help to disclose complex structure within data. The chief aim of the present article, which is the first article in a series of two, is to discuss the pros and cons of two ways of data visualisation i.e. box plot and map using a real public health data example.

A paper from Jordan looked at Otological manifestations among patients with cleft palate. The authors noted that patients with cleft palate are more prone to have hearing loss than normal individuals and this decrease in hearing is secondary to eutachian tube (ET) dysfunction . The dysfunction in ET function is due to an abnormal insertion of levator veli palatini and tensor veli palatini muscles into the posterior margin of the hard palate and the palatal aponeurosis.

Primary Care Physicians' Knowledge, Attitude, and Practice Toward Obesity Management in Qatar

1. Dr. Ahmad Essa Al- Muraikhi, MB, BCh, BAO., ABFM
Senior Specialist in Family Medicine, Primary Care- Qatar
2. Dr. Mohamed Ghaith AL-Kuwari, MBBS, ABCM, FPHM
Senior Specialist in Public Health Medicine & Health Promotion, Primary Care- Qatar

Correspondence:
Dr. Mohamed Ghaith Al-Kuwari
Senior Specialist in Family Medicine
Primary Care- Hamad Medical Corporation
Doha - Qatar
P O Box 3050
P O Box 5054
Tel: +974- 5514962,
e-mail: drmgalkuwari@gmail.com

Keywords: primary care physician; weight management; obesity; Qatar.

ABSTRACT

BACKGROUND: In Qatar, about 29.3% of females and 17.4% of males are obese. The primary care physicians have been identified as cost-effective contributors to treatment and prevention of obesity, because of high patient contact rates and the perceived credability by the public.
OBJECTIVE: This study aims to assess primary care physicians' knowledge, attitude, and practice related to obesity management in Qatar.

METHODS: A cross-sectional survey of a randomly selected sample of 136 physicians was conducted, of which 118 questionnaires were returned (response rate of 86.7 %). The included measures were sources of knowledge, attitudes to obesity and weight management, views regarding the prescription of weight lowering drugs and approaches to achieve weight loss.

RESULTS: More than two thirds of physicians agreed that primary care physicians have a major role in obesity management. On the other hand, only one third considered that they are professionally well prepared to manage obesity. Approximately 66% had negative attitudes toward obese patients. Most physicians reported that they routinely offer advice to their obese patients regarding weight reduction as apart of chronic diseases management. However, they rarely prescribe medications or screen their patients for obesity. Finally only 13.6% of physicians have received training in obesity management.

CONCLUSIONS: Knowledge gaps and ambivalent attitudes toward obesity management were found. More well-structured education focusing on obesity, from prevention to management, seems warranted. This education should continue from medical school to post-graduate level.

Introduction

The World Health Organization (WHO), despite its historical focus on malnutrition, has for the first time recognized the problem of obesity. The organization called for urgent action to combat the growing epidemic of obesity, which now affects developing and developed countries alike.[1,2] In 2000, there were an estimated 300 million obese adults worldwide. In developing countries, it is estimated that over 115 million people suffer from obesity-related problems and a rapid increase in childhood obesity has also been reported.[3,4]

In general, obesity is associated with a greater risk of disability and/or premature death due to type 2 diabetes mellitus, cardiovascular diseases such as hypertension, stroke and coronary heart disease, gall bladder disease, certain cancers (endometrial, breast, prostate, colon) and non-fatal conditions such as gout, respiratory conditions, gastro-esophageal reflux disease, osteoarthritis and infertility. Obesity also carries serious implications for psychosocial health, mainly due to societal prejudice against fatness.[5,6]

Most health organizations recommend that physicians assess their patients for overweight, develop weight management plans tailored to patient's needs including referring patients to ancillary personnel when appropriate, providing monitoring, support and encouragement.[7,8] Moreover, patients should receive appropriate counseling about safe weight management and the benefits of lifestyle modification (physical activity and healthy diet).

Because of high patient contact rates and the perceived creditability of physicians by the public, primary care physicians have been identified as an important and cost-effective contributor to treatment and prevention of overweight and obesity by counseling their obese patients and promoting healthy lifestyle.[9,10] However, it has been documented that many obese and overweight patients receive no advice on weight loss during primary care visits.[11]

In Qatar, prevalence of obesity and overweight are increasing in both adults and children. WHO estimates that 29.3% of females and 17.4% of males are obese.[12] Moreover, a Qatari study showed that the prevalence of overweight and obesity was 28.6%, and 7.9%, respectively, among adolescent boys and 18.9%, and 4.7% among girls.[13] In primary health care centers in Qatar, most of the obese patients are presenting with common preventable co-morbidities e.g. Diabetes Mellitus, Hypertension, Dyslipidemia and Osteoarthritis. Obesity management can prevent

occurrence of such illnesses or at least can improve the clinical course of it. In Qatar, there is not enough accurate data about the assessment of knowledge, attitude, and practice of primary care physicians towards obesity management. This study aims to assess primary care physicians' knowledge, attitude, and practice related to obesity management in Qatar.

Materials

The State of Qatar, is located in Arabian Gulf, and is one of the GCC countries with a population more than 796,000 estimated last census in 2005. Primary heath care in Qatar is provided through a network of 24 primary health care centers distributed all over the country. There are 253 physicians working at these centers. This cross-sectional survey has recruited primary care physicians working in primary health care centers in Qatar in the last 3 months. Sample size is calculated using 253 physicians. These include family medicine board certified and other non-family medicine certified physicians. Assuming 10% losses due to refusal and other reasons, we arrived at 136 physicians.

The following formula was used

$N= Nz^2p (1-p) I [d^2(N-1)+z^2p (1-p)]$

In which; N = total population (253); z = value corresponding to the confidence level ($1.96^2=3.84$); d = absolute precision ($0.05^2=2.5$); p = proportion of the population with the studied characteristics (0.2). Subjects will be recruited by using "Simple random sampling Technique". A list of Primary Health Care physicians will be considered as sampling frame and each physician will be considered as a unit. 136 physicians were randomly selected from the list.

A structured self-administered questionnaire was used to collect data from the primary care physicians. The questionnaire was in English and had four main parts: personal data knowledge, attitude and practice. Personal data includes age, gender, position, last qualification and year of graduation. Knowledge about obesity management includes 10 statements testing knowledge about health risk of obesity, diagnosis, lifestyle (nutrition, physical exercise) and source of knowledge.

Answers were categorized into (Yes, No, I don't know). Attitudes associated with obesity, obese patients, effectiveness of obesity management and role of physician was tested with 7 statements where the answers were categorized into (agree, neutral, disagree). Practicing obesity management in the last 3 months was clarified with 8 statements about diagnosis, advice, management (part of comorbidity management or prevention), referral and receiving training. Answers were categorized into (always, sometimes, rarely, and not at all). Data were coded and entered into Statistical Package of Social Science, version 13.00 for windows (SPSS-13).

Results

Knowledge

Of the 136 questionnaires distributed, 118 were returned; representing a response rate of 86.7 %. Table 1 presents the profile of GPs who participated in the survey. Mean age was 42.2 years (SD 7.2, range 30-59). Sixty-four physicians were females (54.2 %) and 54 (45.8%) were males. Among these categories, only 28% were Qatari and 39 % were family board certified physicians. Regarding experience in clinical practice, 28 % had less than ten years and 26.3 % had more than 20 years. Only 16 participants (13.6%) have received training in obesity management.

Table 2 presents participants' knowledge regarding obesity and its management. About 88 of the respondents (74.6%) were aware of the correct definition of obesity, BMI =30 kg/m2 and 88 (74.6%) correctly identified abdominal obesity as waist circumference >102 cm for males and >89 cm for females. Regarding diseases associated with obesity, about 55.9% and 47.4% of physicians were aware that obesity is associated with colon and endometrial cancer respectively. While 51.7 % knew that it is associated with Breast cancer, and 61.8% were aware that obesity is associated with osteoarthritis.

In terms of factors contributing to obesity, 86.4% of participants identified hormonal abnormalities as a determinant for obesity. Whereas, 71.1% identified genetic factors and 70.3% psychological status, as predisposing factors for obesity. Only 50.8% knew that low socioeconomic status is one of the determinants for obesity.

Regarding knowledge about obesity management, three quarters of participating physicians (75.4%) were aware that overweight patients should be encouraged to reduce their weight. However, only 22% of them were aware that weight reduction medication is indicated if overweight patients failed to reduce more than 10% of their weight after three months of supervised dietary and physical activity program in the absence of any other risk factors for cardiovascular disease. On the other hand less than a third of them (29.6%) were aware that a diet for weight loss should be high in carbohydrate and low in fat.

Attitudes to overweight and obesity management

Regarding attitudes toward obesity and obese patients, almost three quarters (74.6%) of physicians regarded obesity as a disease and (66.9%) considered overweight and obese patients lazier than normal weight people. Moreover, (64.4) % of them thought that overweight people lack willpower and motivation to reduce weight, as shown in Table 3.

More than two thirds of physicians (66.9%) agreed that the role of the primary care physician is not only to refer obese patients to other specialized care. More than half of the physicians (54.2%) regarded obesity management as professionally gratifying. However, only one third of them (33.9%) considered that they are professionally well prepared to manage obesity, and (66.9%) acknowledged that counseling in weight reduction is not easy.

Practice

Table 4 summarizes physician's approach to weight management. The majority of the physicians gave their patients advice on dietary habits (82.2%) and physical activity (80.5%). The majority of them (83.9%) offer

weight control advice for patients with chronic illness e.g. DM or Dyslipidemia as part of their management.

Only seven participants (5.9%) stated that they prescribe drugs for weight management. Twenty-one physicians (17.8%) reported that they always refer their obese patients to others who specialized in obesity management. More than one quarter(28.8%) of the physicians stated that they always give their obese patient leaflets on weight reduction.

Regarding the usage of diagnostic methods for obesity; BMI was the most commonly used method by the physicians (67.8%), whereas (35.9% & 22.9%) always measure waist circumference and waist hip ratio respectively.

Discussion

This study examined the knowledge, attitude, and practice in obesity management among primary care physicians. As such, this study provides valuable information about current obesity management at primary care level in Qatar.

The present results indicated deficiency in knowledge regarding obesity, especially at a basic knowledge level like the definition, predisposing factors and comorbidity. Nearly 25% of physicians were not aware of the widely used definitions of obesity.

We found that many primary care physicians were not aware of some diseases that are associated with obesity like osteoarthritis, colon and breast cancer; as well as the predisposing factors for obesity. This deficiency in knowledge reported by this study agreed with several studies that have shown that GPs knowledge about management of obesity is incomplete and thus express the need for clinical guidelines and supplementary training in obesity management as a part of residency and continuous medical education training.[14-17]

Health professionals too often hold negative or stereotypical attitudes toward their obese patients such as: 'obese patients lack self control, lack motivation and are lazy'.[18-20] In this study almost two thirds of primary care physicians held theses negative attitudes toward obese people compared to less than one third of GPs in France.[21]

Although such attitudes seem less prevalent among health professionals than they were 30 years ago they are still held by 30% of GPs, internists, cardiologists and by a lower fraction of endocrinologists[18,19,21,22] and their prevalence tends to increase with patient BMI.[23,24] Another study found a relatively high rate of clear stigmatization and in some cases discrimination by health care professionals, which agreed with documented discrimination against obese individuals, especially in the fields of employment, education and health care.[24]

Such a negative attitude toward obese patients may impede GP and patient interaction and result in perceived helplessness for both parties.[19,26,27] One of the probable explanations for this negative attitude is the low levels of knowledge and skills regarding obesity management.[28]

On the other hand our study has shown a positive attitude of physicians toward their role and effectiveness in managing obesity. Similar positive attitudes have been found among Kuwaiti, Australian, Israeli and French GPs. However, about two thirds of participants in this study addressed the issue of difficulty in managing obesity which is consistent with the findings in other studies.[18,21,28,29] Similarly, a survey among Australian GPs revealed that most GPs considered practicing dietary and physical activity assessment and advice for overweight patients to be very important, although they acknowledged that sucha role was least likely to be practiced because they have inadequate nutrition knowledge and obesity counseling skills.[20,30] The importance of GPs in managing obesity is also recognized by patients, as patients' surveys have shown that they hold similar positive attitudes toward GPs' role in managing obesity.[31]

The study has shown that advice on dietary habits and physical exercise is the most common practice in obesity management among primary care physicians in Qatar. However the level of practice is lower than what has been reported in other research.[18] For instance compared to 95% and 99% of GPs in Israel and United States are advising on physical activity as a part of managing obesity in their practice, only 80% of GPs in Qatar advising on physical activity.[18,32] And compared to 97% of American GPs and 92% of German GPs advice on dietary change, about 82% of GPs in Qatar do this as a part of their obesity management practice.[32,33] It is reported that some primary care physicians don't discuss lifestyle issues with their patients due to a number of issues such as time constraints, fear of negative reactions, or lack of training.[34,35]

Consistent with findings of previous studies, GPs in Qatar tended to give advice to those who are obese and have obesity-related comorbidities such as type 2 diabetes, high cholesterol, or arthritis, as apart of their management for the chronic illness.[14,36] It is well known that the physicians are more likely to provide weight control advice to their patients who had obesity-related comorbidities to patients who were overweight or obese and without risk factors.[36,37] And such advice is associated with a greater likelihood of trying to lose weight.[38]

Our study revealed that only 5.9% of primary care physicians prescribe anti obesity drugs compared to 39% among Korean.[39] This low percentage is also reported by Middle East countries, like Kuwait and Israel (3% & 4% respectively).[18,29] The low prescribing level can be attributed to unavailability of these drugs in primary care, and the concerns about the potential adverse effects may outweigh the health benefits of weight reduction. In addition to that, several studies showed that GPs regarded promoting healthy lifestyle as more useful than those drugs in obesity management.[28,40]

In Qatar, obesity was mainly diagnosed by using BMI, which alone is not a sufficient predictor of risk of co-morbidities. There is more and more evidence that waist circumference or the waist: hip ratios are useful indices

of abdominal fat accumulation and a better correlation with ill health and risk of coronary heart disease.[5,41,42]

In conclusion, Primary Care physicians in Qatar felt that management of weight problems was one of their responsibilities. However, their knowledge about obesity management needs to be improved to affect their practice and attitude positively toward the obese individuals. This requires improvement in training of GPs in counseling their obese patients, and focusing on methods of giving dietary and physical activity advice regardless of the presence of comorbidities. Development of guidelines for obesity management in primary care is essential to help the GPs to practice obesity management on a standardized level.

References

1. World Health Organization. Obesity: Preventing and Managing the Global Epidemic. Report of a WHO Consultation on Obesity. Geneva, Switzerland: World Health Organization; 1998.
2. World Health Organization. Obesity: Preventing and Managing the Global Epidemic. Report of a WHO Consultation on Obesity. Geneva, Switzerland: World Health Organization; 2002.
3. World Health Organisation. Controlling the global obesity epidemic. 2003. http://www.who.int/nut/obs.htm.
4. De Onis M, and Blössner M. Prevalence and trends of overweight among pre-schoolchildren in developing countries Am J Clin Nutr 2000; 72:1032-1039.
5. Ofei F. Obesity A Preventable Disease. Ghana Med J. 2005 September; 39(3): 98-101.
6. World Health Organisation. Obesity, An epidemic. World Health Organization, Geneva 2000. available at: http://www.emro.who.int/nutrition/PDF/Obestity_Epidemic.pdf.
7. Waine C. Obesity and weight management in primary care. 1st ed. London: Blackwell; 2002.
8. Orzano AJ, Scott JG . Diagnosis and treatment of obesity in adults: An applied evidence - based review. Am Board Fam Pract 2004; 17:359-369.
9. Egger G, Donovan R, Spark R. Health promotion strategies and methods.2nd ed. Sydney: McGraw-Hill; 2004.
10. Lawlor DA, Keen S, Neal RD. Can general practitioners influence the nation's health through a population approach to provision of lifestyle advice?. Br J Gen Pract. 2000 Jun;50(455):455-9.
11. Rodondi N, Humair JP,Ghali WA, Ruffieux CA, Stoianov R, Seematter-Bagnoud L, etal. Counselling overweight and obese patients in primary care: a prospective cohort study. Eur J Cardiovasc Prev Rehabil. 2006 Apr;13(2):222.
12. WHO Global Info Base. Country profile (Qatar). [Online]. [2008?] [Cited 2008 Jan 3]; Available from: available at: http://www.who.int/infobase/report.aspx?rid=111&iso=QAT
13. Benar A. Prevalence of obesity, overweight, and underweight in Qatari adolescents. Food Nutr Bull. 2006 Mar;27(1):39-45.
14. Klumbiene J, Petkeviciene J, Vaisvalavicius V, Miseviciene I. Advising overweight persons about diet and physical activity in primary health care: Lithuanian health behaviour monitoring study. BMC Public Health. 2006 Feb 14;6:30.
15. Huang J, Yu H, Marin E, Brock S, Carden D, Davis T: Physicians' weight loss counselling in two public hospital primary care clinics. Acad Med 2004, 79(2):156-61.
16. Flocke SA, Clark A, Schlessman K, Pomiecko G: Exercise, diet and weight loss advice in the family medicine outpatient setting. Fam Med 2005, 37(6):415.
17. Campbell LV, Welborn TA. Current teaching about obesity in Australian universities. Med J Aust. 1994;160:584 -5.
18. Fogelman Y, Vinker S, Lachter J, Biderman A, Itzhak B, Kitai E. Managing obesity: a survey of attitudes and practices among Israeli primary care physicians. Int J Obes Relat Metab Disord. 2002;26:1393-7.
19. Cade J, O'Connell S. Management of weight problems and obesity: knowledge, attitudes and current practice of general practitioners. Br J Gen Pract. 1991;41:147-50.
20. Oberrieder, H, Walker, R, Monroe, D, Adeyanju, M. Attitude of dietetic students and registered dietitians toward obesity. J AmDiet Assoc 1995; 95: 914 - 915.
21. Bocquier A , Verger P , Basdevant A, Andreotti G, Baretge J, Villani P, etal . Overweight and Obesity: Knowledge, Attitudes, and Practices of General Practitioners in France. Obes Res. 2005 Apr;13(4):787-95.
22. Kristeller JL, Hoerr RA. Physician attitudes toward managing obesity: differences among six specialty groups. Prev Med. 1997;26:542-9.
23. Hebl MR, Xu J. Weighing the care: physicians' reactions to the size of a patient. Int J Obes Relat Metab Disord. 2001;25:1246-52.
24. Harvey EL, Hill AJ. Health professionals' views of overweight people and smokers. Int J Obes Relat Metab Disord.2001;25:1253- 61.
25. Puhl R, Brownell KD. Bias, discrimination, and obesity. Obes Res 2001; 9: 788 - 805.
26. Hoppe R, Ogden J. Practice nurses' beliefs about obesity and weight related interventions in primary care. Int J Obes. 1997; 21:141- 6.
27. Foster GD,Wadden TA, Makris AP, et al. Primary care physicians' attitudes about obesity and its treatment. Obes Res 2003; 11:1168-1177.
28. Campbell K, Engel H, Timperio A, Cooper C, Crawford D. Obesity management: Australian general practitioners' attitudes and practices. Obes Res. 2000;8:459-66.
29. Al-Jeheidli AH, Moquddan FI, Al-Rumh MK, Salmin NN. General Practitioners' Attitudes and Practices toward Managing Obesity. Kuwait Med J.2007; 39 (2):138-143.
30. Helman, T. (1997) Nutrition and general practice: an Australian perspective Am J Clin Nutr 65,1939S-1942S.
31. Brotons C, Ciurana R, Piñeiro R, Kloppe P, Godycki-Cwirko M, Sammut MR; et al. Dietary advice in clinical practice: the views of general practitioners in Europe. Am J Clin Nutr. 2003 Apr;77(4 Suppl):1048S-1051S.
32. Kushner RF. Barriers to providing nutrition counseling by physicians: a survey of primary care practitioners. Prev Med 1995; 24:546-552.
33. Weisemann A. Nutritional counseling in German general practices: a holistic approach. Am J Clin Nutr 1997; 65: 1957S - 1962S.
34. Johansson K, Bendtsen P, Åkerlind I. Advice to patients in Swedish primary care regarding alcohol and other lifestyle habits: how patients report the actions of GPs in relation to their own expectations and satisfaction with the consultation. Eur J Public Health. 2005 Dec;15(6):615-20.
35. Kloppe P, Brotons C, Anton JJ, Ciurana R, Iglesias M, Piñeiro R, et al. Preventive care and health promotion in primary care: comparison between the views of Spanish and European doctors. Aten Primaria. 2005 Jul-Aug;36(3):144-51.
36. Simkin-Silverman LR, Gleason KA, King WC, Weissfeld LA, Buhari A, Boraz MA, et al. Predictors of weight control advice in primary care practices: patient health and psychosocial characteristics. Prev Med. 2005 Jan;40(1):71-82.
37. Judd H. The management of obesity by general practitioners: report of a questionnaire survey. Royal Australian College of General Practitioners, 1987 Melbourne. J Fam Pract 1998;4 7:3 9 - 4 3.
38. Fontaine KR, Haaz S, Bartlett SJ. Are overweight and obese adults with arthritis being advised to lose weight?. J Clin Rheumatol. 2007 Feb;13(1):12-5.
39. Park HS, Park JY, Cho HJ. Attitudes and Reported Practice for Obesity Management in Korea After Introduction of Anti-obesity Agents. J Korean Med Sci 2005; 20: 1-6
40. Bray GA, DeLany J. Opinions of obesity experts on the causes and treatment of obesity-a new survey. Obes Res 1995; 3(Suppl 4): 419S - 423S.
41. Bigaard J, Frederiksen K, Tjonneland A, Thomsen BL, Overvad K, Heitmann BL, Heitmann BL: Waist circumference and body composition in relation to all-cause mortality in middle-aged men and women. Int J Obes 2005, 29(7):778-84.
42. Lakka H-M, Lakka TA, Tuomilehto J, Salonen JT: Abdominal obesity is associated with increased risk of acute coronary events in men. Eur Heart J 2002, 23:706-713.

Table 1 Sociodemographic characteristics of physicians who participated in the survey.

Variable	n	%
Sex		
Male	54	45.8
Female	64	54.2
Nationality		
Qatari	33	28
Non-Qatari	85	72
Years of experience in primary care		
< 10 years	33	28
11-20 years	54	45.7
>20 years	31	26.3
Specialization		
Family Medicine certified physicians	46	39
Non Family Medicine physician	72	61

Table 2 Percentage of correct knowledge of primary care physicians toward obesity

Statement	**Family Physicians**	**Non Family Physicians**	**Total**
	N (%)	**N (%)**	**N (%)**
Obesity defined as BMI > 30.	34(73.9)	54 (75.0)	88 (74.6)
Waist circumference measurements greater than 102 cm in men & 89 cm in women indicate an increased risk of obesity-related comorbidities.	37 (80.4)	47 (70.8)	88 (74.6)
Weight reduction medication is indicated when BMI is less than 30 even in the absence of cardiovascular risk factors.	8 (17.4)	18 (27.8)	26 (22)
Diseases that associated with obesity:			
a)Colon cancer	23(50.0)	43(59.7)	66 (55.9)
b)Endometrial cancer	25(54.3)	40(55.6)	65 (47.4)
c)Breast cancer	20(43.5)	41(56.9)	61 (51.7)
d)Osteoarthritis	24(52.2)	49(68.1)	73 (61.8)
conditions that predispose to obesity:			

a)Genetic	33(71.1)	50(69.4)	83 (70.3)
b)Hormonal abnormalities	40(87.0)	62(86.1)	102 (86.4)
c)Psychological status.	31(37.3)	52(62.7)	84 (71.1)
d)Low socioeconomic class.	19(41.3)	41(56.9)	60 (50.8)
A diet for weight loss should be high in carbohydrates and low in fat.	14 (30.4)	21 (30.4)	35 (29.6)
People with BMI ≥ 27 should be encouraged to lose weight.	35 (76.1)	44 (61.1)	89 (75.4)

Table 3 Attitude of primary care physicians towards obesity management

Statement		**Response in %**	**n (%)**
	agree	**neutral**	**disagree**
Obesity is a disease	88 (74.6)	11(9.3)	19(16.1)
Overweight people tend to be lazier than the normal weight people.	79(66.9)	17(14.4)	22(18.6)
Overweight people lack will power and motivation in comparison with normal-weight people.	76(64.4)	17(14.4)	25(21.2)
Counseling in weight reduction is easy	19(16.1)	20(16.9)	79(66.9)
GPs' role is to refer overweight and obese patients to other professionals rather than attempt to treat them.	29(24.6)	10(8.5)	79(66.9)
I am professionally well prepared to treat patients who are obese.	40(33.9)	46(29.0)	23(27.1)
For overweight and obese people even small weight loss can produce health benefit.	94(79.7)	13(11.0)	11(9.3)
GP should be a model and maintain normal weight.	84(71.2)	20(16.9)	14(11.9)
Treating overweight and obese people is professionally gratifying.	64(54.2)	28(23.7)	26(23.0)
Only a small percentage of overweight and obese people can lose weight and maintain this loss.	65(55.1)	22(18.6)	31(26.3)

Table 4 Practice of obesity management among primary care physicians in Qatar

Statement	**Response n(%)**			
	Usually	**Sometimes**	**Rarely**	**Not at all**
Do you advise your patients to do physical exercise as part of a weight reduction scheme?	95(80.5)	11(9.3)	7(5.9)	5(4.2)
Do you advise your patients to do dietary change as part of a weight reduction scheme?	97(82.2)	10(8.5)	7(5.9)	4(3.4)
Diagnostic tools for overweight or obesity:				
a) Weight without height:	40(33.9)	27(22.9)	17(14.4)	34(28.8)
b) BMI:	80(67.8)	20(16.9)	9(7.6)	9(7.6)
c) Waist circumference:	42(35.6)	19(16.1)	24(20.3)	33(28.0)
d) Waist hip ratio.	27(22.9)	12(10.2)	21(17.8)	58(49.2)
e) Comparison with ideal weight (Lorentz formula).	36(30.5)	20(16.9)	14(11.9)	48(40.7)
f) Appearance.	35(29.7)	36(30.5)	14(11.9)	33(28.0)
Do you refer your obese patient to others who specialize in obesity management?	21(17.8)	71(60.2)	21(17.8)	5(4.2)
Do you prescribe weight-reducing medications?	7(5.9)	7(5.9)	12(10.2)	92(78.0)
Would you only offer advice regarding weight control when patient ask for it?	33(28.0)	31(26.3)	18(15.3)	36(30.5)
Do you offer weight control advice for your patients with chronic illness e.g. DM or dyslipidemia as part of the management?	99(83.9)	13(11.0)	1(0.8)	5(4.2)
Have you given your patients leaflets on weight reduction?	34(28.8)	47(39.8)	20(16.9)	17(14.4)

Early Performance of Imaging Studies After First Urinary Tract Infection

ABSTRACT

Background: Guidelines recommend obtaining a renal ultrasonogram (RUS) for young children after a first urinary tract infection (UTI).

Objectives: To investigate the yield and potential risks/benefits of early, compared to late performance imaging studies as renal ultrasonogram (RUS) and if there is need for a voiding cystourethrogram (VCUG) after UTI.

Methods: We conducted a prospective study of 84 previously healthy children < 5 years old admitted from April 2006 to July 2007 with first documented UTI. We then divided the 78 patients who had (RUS) into two groups and compared them to a control group: group A - 49 children in whom RUS was performed within 2 days, group B - 29 children in whom RUS was performed > 2 days after UTI, and a historical control group C - 82 children in whom RUS was performed > 2 weeks following UTI.

Results: RUS was performed in 48/48 (100%), 6/35 patients (17.1%) and 34/116 patients (29.3%), and mild to moderate renal pelvis dilatation on RUS suggesting VUR was demonstrated in 38.8%, 37.9% and 39% in groups A, B and C respectively. No significant difference was found between these groups in terms of incidence ultrasound findings and positive results for voiding cystourethrogram (VCUG), and severity and grading of reflux within each group. One case of UTI secondary to VCUG occurred in a patient in whom the procedure was performed 4 months after the diagnosis.

Conclusions: Performing RUS early does not influence the detection rate, or severity of mild to moderate renal pelvis dilatation, or risk of secondary infection; it shortens the period of prophylactic use and increases performance rate of VCUG, thereby minimizing the risk of failure to detect VUR. The traditional recommendation of performing VCUG 3-6 weeks after the diagnosis of UTI should be re-evaluated.

Abbreviations: RUS, renal ultrasonogram; UTI, urinary tract infection; VCUG, voiding cystourethrography; VUR, vesicourethral reflux.

Khaled M. Amro, M.D*, Mohamed Alnaji, M.D, Salem Al-Zawahri, M.D, Mustafa Al-Zboon, M.D, Mohamed I. Aladwan, M.D.

*Pediatrician from department of pediatric RMS, at Prince Hashim Hospital Zarqa-Jordan.

Correspondence:
Dr. Khaled Amro
P.O. Box 1196, Zarqa-Jordan
E-mail: drkhaledam64@yahoo.com

Key words: renal ultrasonogram; urinary tract infection; child; vesicourethral reflux.

Introduction

The main goals of imaging studies in children with a first episode of urinary tract infection (UTI) are to identify urinary tract anatomic abnormalities. If such abnormalities are found, therapeutic measures are executed in order to prevent future infections and possible long term damage to the kidneys.

Currently, the recommended imaging study is renal ultrasound (RUS), which mainly detects abnormalities in the upper urinary tract such as hydronephrosis or obstruction. Furthermore, radiologists often report various degrees of dilatation of the collecting system of the kidney and urinary tract on renal ultrasound, suggesting that further investigation for VUR should be done. The standard test used to diagnose VUR is voiding cysto- urethrogram. The generally accepted practice is to perform VCUG in all children younger than 5 years old with first documented UTI. For children older than 5, the recommendations vary according to gender, clinical manifestations and family history of VUR[1-3]. The accepted practice has been to perform VCUG at least 3-6 weeks after a UTI in order to prevent false positive results, which may be caused by UTI-related transient changes in the urinary tract[4,5]. However, the validity of this practice has recently been questioned. Two recent retrospective studies[6,7] and one cross-sectional analysis8 have shown that the prevalence and severity of VUR in children with UTI were not influenced by the timing of VCUG performance (i.e., early vs. late performance following the diagnosis of UTI). In a study investigating the optimal timing of voiding cystourethrogram (VCUG) after UTI, only 48% of patients had their scheduled VCUG performed.6 This may be related to the invasive nature of the VCUG, which requires urethral catheterisation. Furthermore, parents and physicians may be reassured by a normal ultrasound, and forgo performing the VCUG. The objective of this study was to determine whether the presence of a dilated collecting system of the kidney and urinary tract, as reported by radiologists, predicted the presence of VUR on VCUG.

The purpose of this study was to prospectively evaluate the prevalence and grade of VUR in children with first documented UTI in whom RUS was performed early (within 2 days) after the diagnosis of UTI, to evaluate whether early detection of mild to moderate renal pelvic dilatation suggest VUR and VCUG performance poses an increased risk for UTI, and to examine whether early performance of RUS and VCUG improves the likelihood of having this study performed.

Patients and Methods

We prospectively evaluated children of both genders under the age of 5 years who were hospitalized over a 14 month period (April 2006 to July 2007) with first documented UTI at Prince Hashim Hospital in Zarqa city. This central care hospital serves a population of approximately half a million children of various ethnic origins in eastern of capital (Amman-Jordan.

Urinary tract infection was diagnosed when a symptomatic child had a

culture of a urine specimen obtained by suprapubic aspiration growing any number of colonies, a catheterized specimen growing > 104 colonies/ml, or a properly obtained, clean-voided, midstream urine specimen growing = 105 colonies/ml. Patients with a previous history of UTI, known VUR or other genitourinary anomalies were excluded from the study.

The original study design was to perform RUS within 2 days from the diagnosis of UTI in all patients who met the study's inclusion criteria, and in whom parental consent was obtained.

In fact, the study group was divided into two subgroups based on the timing of RUS: an "early group" (group A) in which RUS was performed within 2 days from the occurrence of UTI, and a "late group" (group B) in which RUS was performed later than 2 days from the diagnosis of UTI (due to delays caused by parents, primary care physicians, or the health management organization). RUS results of groups A and B were compared with the results of this procedure in a historical control group (group C), which included children with first documented UTI who were hospitalized at Prince Hashim hospital between June 2004 and May 2005 and in whom RUS was performed more than 2 weeks after the diagnosis of UTI. The data on this group were collected retrospectively (RUS results) and prospectively (clinical data).

Patients in study groups A and B who had voiding cystourethrography given oral antibiotic prophylacticaly one day before and three days after procedures to prevent VCUG-associated sequelae such as fever, chills or other evidence of UTI.

Results

During the study, 84 children under the age of 5 years with first documented UTI who met the inclusion criteria of the study were admitted to Prince Hashim Hospital. RUS then VCUG was performed in 78 patients who were divided into two subgroups. Group A comprised patients in whom RUS was performed within 2 days from the diagnosis (mean 1.5 days, range 1-2 days).

Group B comprised patients in whom RUS was performed more than 2 days after the diagnosis of UTI (mean 6 days, range 2-10 days). In 6 of 84 patients (7.1%) who were supposed to be included in the original group B, RUS was not performed. In five cases, the parents refused to expose the child to other procedure VCUG and one patient was lost to follow-up. RUS and VCUG was performed in all 49 patients who belonged to original group A. In 6/35 patients (17.1%) who belonged to original group B the procedure was not performed.

Group C comprised a historical control group of children in whom RUS was performed > 2 weeks from the diagnosis [Table 1]. In 34 of 116 patients (29.3%) who were supposed to be included in the original group C, the procedure was not performed. No statistically significant differences in gender and age were observed between the three study groups [Table 1]. Tables 2, and 3summarize the rates and grades of VUR within the three study groups. No statistically significant differences were found between groups A and B in term of rate and severity of reflux. The findings in both study groups were compared to those in the historical control group (group C) in which RUS and VCUG was performed more than 2 weeks after the diagnosis of UTI. No statistically significant differences were found between this group and group A in terms of rate and severity of renal pelvic dilatation. The overall rate of VUR in all patients in group A, B and C combined was 38.5% (30/78).

Early performance of RUS followed by VCUG was safe. Mild sequelae included: a) occurrence of fever without evidence of UTI in two patients in group A (1 and 4 days following the procedure, respectively, and b) the development of UTI caused by Pseudomonas aeruginosa in one patient in group B following a VCUG performed 2 months after the initial UTI.

Discussion

For a first episode UTI in infants, renal ultrasound is performed to rule out anatomic abnormalities of the urinary tract. It is a non-invasive form of imaging performed before the VCUG and after the initial infection. Various degrees of dilatation of the collecting system of the kidney seen on renal ultrasound are often reported. A Medline search, however, found only three studies that examined the significance of these findings in children. Davey and colleagues9 looked at older children (mean age 4.2 years) who were referred for renal ultrasound and VCUG for a variety of indications, including UTI. They found that the frequency of VUR in children with mild renal pelvic distension did not differ significantly from that in children with no distension on renal ultrasound (39% v 32%, p = 0.365). Blane and colleagues10 retrospectively analysed VCUG and ultrasound results of 493 children. All children who had a VCUG within eight hours of a renal ultrasound scan were included, except for children with myelomeningocoele or renal surgery. The mean age of their study population was 4.9 years. They found that ultrasound was not sensitive for VUR. Of the kidneys with VUR, 74% had normal ultrasound scans.

DiPietro and colleagues[11] found that ultrasound was unreliable in excluding VUR in children aged 5 years or older who were being evaluated for a UTI. Only two of 21 children with VUR on VCUG had abnormal renal ultrasound scans.

In our study we prospectively evaluated VCUG findings in children with first documented UTI in our institution. The original design of our study was to perform VCUG within 2 days from the diagnosis of UTI in all children studied and to compare these findings with those of a historical control study group. Nevertheless, in 29 of the 84 children enrolled in the study early VCUG was not performed for various reasons (see Results). Those children in whom VCUG was performed more than 2 days after the diagnosis of UTI constituted a prospective control group, which, together with the historical control group, served to underscore the meaningful findings of this study.

McDonald et al.[6] showed in their retrospective study that in 50% of children in whom VCUG was not performed early, the procedure was

not performed at all. In our prospective study, 17% of patients in the original group B (the "late group") and 29.3% of patients in the original group C (the historical control group) did not undergo the study. Based on these findings we conclude that postponing the performance of RUS followed by VCUG reduces the likelihood of performing the procedure.

The question whether VCUG should be performed during the initial hospitalization in a child with documented UTI, while receiving the initial antibiotic therapy and following an appropriate clinical response, remains open. The medical and financial implications of such a practice should be investigated.

McDonald and co-workers6 showed that there was no difference in the rate and grade of reflux between children in whom VCUG was performed early (within 7 days from the diagnosis of UTI) and children who had VCUG later. In another study, Mahant et al.[7] showed that performing an early VCUG did not influence the rate of detected reflux. It should be noted, however, that both studies were conducted retrospectively.

Conclusion

Renal ultrasound findings are neither sensitive nor specific for VUR in children with a first UTI.We conclude that early performance of VCUG (within 2 days) after first documented UTI does not influence the rate or severity of the detected VUR, does not augment the risk of secondary infection, shortens the period during which prophylactic antibiotic therapy is given, and increases the rate performance of the procedure, thereby minimizing the risk of failure to detect VUR. The traditional recommendation of performing VCUG 3-6 weeks after the diagnosis of UTI should be reassessed.

References

1. *Hellerstein S. Urinary tract infections. Old and new concepts. Pediatr Clin North Am 1995;42:1433-57.*
2. *Koff SA. A practical approach to evaluating urinary tract infection in children. Pediatr Nephrol 1991;5:398-400.*
3. *Hellstrom M, Jacobsson B. Diagnosis of vesicoureteric reflux. Acta Paediatr Suppl 1999;88:3-12.*
4. *Avery M, Mandell J, Simman C, Harmon W, First L. Genitourinary tract infections. In: Avery M, First L, eds. Pediatric Medicine. Baltimore, MD: Lippincott, Williams & Wilkins, 1989:611-14.*
5. *Rushton HG. Vesicoureteral reflux and scarring. In: Avner ED, Harmon WE, Niaudet P, eds. Pediatric Nephrology. 5th edn. New York: Lippincott, Williams & Wilkins, 2004:1030-48.*
6. *McDonald A, Scranton M, Gillespie R, Mahajan V, Edwards GA. Voiding cystourethrograms and urinary tract infections: how long to wait? Pediatrics 2000;105:E50-3.*
7. *Mahant S, To T, Friedman J. Timing of voiding cystourethrogram in the investigation of urinary tract infections in children. J Pediatr 2001;139:568-71.*
8. *Craig JC, Knight JF, Sureshkumar P, Lam A, Onikul E, Roy LP. Vesicoureteric reflux and timing of micturating cystourethrography after urinary tract infection. Arch Dis Child 1997;76:275-7.*
9. *Davey MS, Zerin JM, Reilly C, et al. Mild renal pelvic dilatation is not predictive of vesicoureteral reflux in children. Pediatr Radiol 1997;27:908-11.*
10. *Blane CE, DiPietro MA, Zerin MJ, et al. Renal sonography is not a reliable screening examination for vesicoureteral reflux. J Urol 1993;150:752-5.*
11. *DiPietro MA, Blane CE, Zerin MJ. Vesicoureteral reflux in older children: concordance of US and voiding cystourethrographic findings. Radiology 1997;205:821-2*

Table 1. Finding characteristics of children with urinary tract infection

Children who had RUS	Group A n=49 RUS< 2 days n=49 (100%)	Group B n=35 RUS > 2 days n=29 (82.9%)	Group C n=116 RUS> 2wks n=82 (70.7%)
Gender Female Male	 34 (71.4%) * 14 (28.6%) *	 30 (85.7%) 5 (14.3%)	 87 (75%) 29 (25%)
Age (mos)	1–60	0.33–48	0.25–60
Mean ± SD	14.5 ± 16.3 *	17.7 ± 13.6	14.7 ± 14.5

n = number of children
* Not significant vs. groups B and C

Table 2. Rates of renal pelvic dilatation and VUR in children with urinary tract infection

Children who had RUS	Group A RUS< 2 days n=49	Group B RUS > 2 days n=29	Group C RUS> 2wks n=82
Normal RUS	30 (61.2%)*	18 (62.1%)	50 (61%)
Renal pelvic dilatation with Reflux by VCUG	19 (38.8%)*	11 (37.9%)	32 (39%)

n = number of children
* Not significant vs. groups B and C

Table 3. Grades of VUR in children with urinary tract infection

	Group A VCUG < 2 days N=30	Group B VCUG > 2 days N=13	Group C VCUG>2wks N=51
Grade 1	3 (10%)*	2 (15.4%)	10 (19.6%)
Grade 2	10 (33.3%)*	5 (38.4%)	22 (43.1%)
Grade 3	10 (33.3%)*	3 (23.1%)	12 (23.6%)
Grade 4	6 (20%)*	3 (23.1%)	5 (9.8%)
Grade 5	1 (3.3%)*	0	2 (3.9%)

N = number of kidney units
* Not significant vs. groups B and C

Supporting Services and Quality of Life in People with Multiple Sclerosis

Mojtaba Azimian, MD ; Mostafa Eghlima, PhD; Ghoncheh Raheb,Phd; Mitra Zohmand,MSc.; Asghar Dadkhah, PhD.
University of Welfare and Rehabilitation science, Tehran

Correspondence:
Dr Asghar Dadkhah,
University of Social Welfare and Rehabilitation,
Evin, Kudakyar Avenue,
Tehran 19834, Iran.
E-mail: asgaredu@uswr.ac.ir ; Mazimian@Yahoo.com

Key Words: Supportive Services, Quality of Life, Multiple Sclerosis.

ABSTRACT

Background and aim: Multiple Sclerosis is one of the most common non-traumatic and weakening diseases of the CNS, which causes many somatic, psychic and social problems; and mainly has an unpleasant effect on different aspects of the patient's and their families' quality of life. This study has been performed for evaluating the relationship between supporting services and different aspects of life quality in MS patients in Tehran city.

Methods and materials: This study was a coherence type and done by simple random sampling from active existing files in Iranian MS association and Sina MS Super-specialist clinic. Among these, 60 files were selected. By estimating sample volume in coherence research, sample volume was determined. Life style was evaluated by a standard questionnaire containing 54 questions (MSQOI-54) and for evaluation of the type and quality of supportive services the researcher's questionnaire used 46 questions. The relationship among variables was assessed by statistical test of Spearman correlation coefficient.

Findings: There is significant relationship between supportive services and these items: Promotion of somatic health, decrease in somatic/emotional limitations in performance of the role, increase in psychological health, fatigue decline, increase in health sense, optimization of cognitive and social performance, decrease in anxiety regarding health, improvement in health condition and promotion of life style from the patients' point of view. There is no significant relationship between supportive services and increase in sexual performance of patients and pleasure from their sexual performance.

Conclusion: According to the results of this study some procedures and activities can be used for increasing supportive service levels in MS patients who need these services in order to promote their quality of life.

Introduction

Disease is not a selective phenomenon but it is a fact that it is an unwanted accident. Frequently, it has an abrupt and unpredictable onset and affects the subject's performance, method of life and his/her emotions[1]. MS is a chronic disorder of the CNS with gradual deterioration.[2] The type of its clinical condition changes from benign to a rapidly growing form. It is usually seen with coming and going attacks.[3] This disease is the most common reason for neurological illness in the young and adolescents. According to the disorder of the CNS, symptoms of this disease may involve different parts of the body and make patients significantly change their life way and their aims. In addition to producing somatic weakness, that is, they need special treatment activities, MS imposes many psychic, social and economic pressures on the patient and his/her family and due to fatigue and illness the patient depends on others which consequently leads to depression and lack of self-confidence. Sometimes there is a direct relation between degree of weakness and incidence of social and psychic problems in MS people.[4] On the other hand, because Ms is usually seen at ages less than 40 years, it involves young, active and productive people and consequently causes loss not only in professional conditions of the patient but also endangers society in from an economical point of view. Among these, females are more involved in this disease and as a result it profoundly affect smatrimonial situations and education of children and hurts families as practical and productive units of society, and deteriorates the health of future generations.[2] In chronic diseases, one of the most important aspects of the social, economic and treatment supports is to consider the quality of life of the patient.[5] The importance of the quality of life in this kind of disease rises from these facts:

a) there is no treatment for this diseases. On the other hand with improvements in industrial and treatment aspects life time/duration of patients can be increased.[2] MS is a chronic disease with unknown etiology and no exact treatment.6 Although the final and proposed aim is treatment of MS, until finding an exact treatment for that, it is very important to conserve and improve MS patients' quality of life.

Ms International Federation (MSIF) introduces indices-as supportive services for improving MS patients' quality of life as follows:

Independence and authority, Medical care, continuous care (such as availability of care and nursing services in home and society for the patient, as well as possibility of use of home for aged or other day and night centers (boarding schools) if residence place is not fit or proper for the patients' needs); prevention of the disease process and health improvement, support of family members, proper transportation systems, providing work opportunities and volunteers working for patients, salary and cash aid, education,

optimization of existing buildings and residence areas in society foruse by MS patient for an exteneed time[7].

According to Olive et al (1996) quality of life has a multi-dimensional meaning[8].

In this research, quality of life is divided into 14 indices, according to somatic and psychic dimensions; which are: somatic and psychic improvement, decrease of somatic and emotional limitation of the patient in performance of role, decrease in pain/fatigue and anxiety of the patient regarding his/her health, improvement of social/cognitive/health condition of the patient, sexual performance improvement and increase of patient's pleasure from his/her sexual performance, and also improving of health feelings and increment of quality of life from the patient's point of view[9].

Even if the disease process does not cease, with delivering optimal supportive services, incidence or progress of most of the symptoms of the disease can be decreased. Comfortable life can be provided, life quality can be increased and patients and their family can be helped in solving most of the problems and in compromising with the existing situation[2].

Although there is no exact statistic of the number of MS patients in Iran, primary estimations show that about 35 to 40 thousand MS patients live in Iran.10 The MS association of Iran have announced 30 thousand MS patients as an exact number of this disease[11].

Research shows that there is significant increase in the incidence rate of MS in recent years in Iran and the age of incidence has decreased[10].

So, with considering the ever increasing number of MS patients and the vast variety of symptoms and problems related to it and because research which has been done I on MS mostly pertains to medical treatment and less to social and psychic symptoms, and because of the lack of enough information about types and amount of supportive services with various aspects of patients' quality of life, the researcher with the aim of evaluating supportive services and quality of life of MS patients has performed this study.

Materials and Methods

This research is of the coherence type and pertains to the study of the relationship between supportive services and MS patients' quality of life. In this research among the active existing files of the at the MS association of Iran and Sina high professional (super-specialist) MS clinic, 60 files by simple random method were selected. For determining sample volume, establishing method for sample volume in coherence research has been used. Gathering research information was done via interview with patients and by standard questionnaire containing 54 questions about MS patients' quality of life (MSQOL-54) and a researcher-designed questionnaire regarding supportive services. 14 indices of a patients' quality of life were evaluated in two different aspects: somatic and psychic.[4]

Supportive services questionnaire has two parts: part 1 for obtaining demographic characteristics and part 2 with 46 five-choice questions for assessing supportive services.

MSQOL-54 questionnaire has been normalized in Iran.[12] Reliability of Researcher questionnaire was obtained with a) comparison of predetermined measuring criteria between this research and other research; a) consultation with other researchers and scientists who work on this issue and individuals who are familiar with that. Consultation with some teachers and instructors in social work, psychology and neurology fields with experience in MS disease and a doctor (MD) who has MS, and agreement of all of them regarding questionnaire content, confirmed reliability of the questionnaire. On the other hand, reliability of the questionnaire content was evaluated by a pre-test on 30 individuals in the study group, and accordingly some changes were made in the questions.

Sustainability of the mentioned questionnaire was verified after doing the pre-test and by calculation of a-Kronbach (a=0.87). Gathered information was analyzed by SPSS 15 software. By use of descriptive statistics, demographic information and variables were described in graphics, frequency/absolute tables. Statistical test of Spearman correlation coefficient was used for assessing relationship among variables.

Findings: In this study, 73% of the sample were female and 27% male; among them 70% were married, 27% were single and 3% divorced. The biggest age frequency was between 26 to 35 years. 35% of study patients have university (graduate) degree, 32% have diploma (under graduate degree) and 33% have under diploma (secondary) education. The age in 55% of patients was 4 years and more, in 25% between 3 to 4 years and in 20% less than 3 years. In this research, relationship between supportive services and 14 indices of quality of life in somatic and psychic point of view, was assessed and there was no significant relationship between supportive services and 12 of these indices, but these indices have a significant relationship with supportive services.

There is a significant relationship among services and somatic health improvement, decrease in emotional and somatic limitation of patient in performance of role, pain decrement and increment of patient's psychic health (Table 1). So, with increase of supportive service level providing for patients, somatic and psychic health is improved and amount of pain of patient and their somatic / emotional limitation in performance of role is decreased.

There is a significant relationship among supportive services and fatigue decrement, health sense increment, social / cognitive performance improvement and decline in anxiety of patients regarding his/her health (Table 2). This means that with introducing further supportive services to MS patients, the amount of his/her fatigue and anxiety regarding health is decreased, his/her feeling about health is increased and his/her social/ cognitive performance is improved.

There is a significant relationship among supportive services, and improvement of health condition and improvement in quality of life from

the patient's point of view (Table 3). But there is no significant relationship between supportive services and variables of sexual performance improvement and increase of patient's performance from his/her sexual performance. So, with increase of supportive services level, patient's health condition and quality of life (from his/her point of view) is improved.

In this research the relationship between supportive services and somatic/psychic dimensions of quality of life have been evaluated separately (Table 4). With increment in supporter services level (delivery to MS patients), there is improvement in their somatic/psychic aspects of quality of life.

Discussion

Disease is an event which reduces quality of life.13 MS is a chronic disease with various and day-to-day changing signs and symptoms in different individuals.14 This research depicts that there is a significant relationship between supportive services and somatic/psychic aspects of quality of life of MS patients. As mentioned in this study there is a significant relationship between supportive services and all indices of quality of life except variables of sexual performance and patient's pleasure of his/her sexual performance. Despite lack of presence of any study regarding relationship between supportive services and quality of life in MS patients, but with considering research in the same fields the following results can be elicited:

The findings of this research are consistent with this fact that by increment in supportive services delivered to MS patients their somatic/psychic health is improved and patients' abilities for doing everyday activities are increased and they feel more pleasure, relax more and have more enjoyment than before.

In addition, these results show that with increment of supportive services, social/cognitive performance of patients is improved and they will be able to further participate in group work and activities and to have more proper relationships with family and friends and background people and also to increase their concentration and attention on long-term and thoughtful activities. Results of this study depict that self-care works and education/support programs have a significant effect on increment of scores of quality of life in MS patients in the fields of social/psychic/public health performance. These mentioned results are in agreement with the results of the present study.[15]

Significant relationships between supportive services and decrement in social/emotional limitations of MS patients in performance of their role, is another finding of this study. So if further supportive services will be delivered to patients, their problems in house and work place, due to their social and sensual condition, which results in limitation in performance of role, would be decreased. Southerland et al (2005) in a study in Australia under the title of "Method of relaxation and quality of life of MS patients: example for self-education" on 11 MS patients (control group) and 11 MS patients (without intervention as a control group) concluded that use of these services cause more acceptance of energy and less limitation in somatic/psychic activities.[16] These results are in agreement with the present study.

Other findings of this research are consistent with this fact that increase in supportive services will decrease the amount of pain and fatigue of the patient and the patient will have more somatic abilities, more joy from his/her life and experience and less weakness. Results of one research project under the title of "Effect of education on method of self-care and amount of incidence of common problems in MS patients" shows that education (one of the supportive services indices in this research) is effective in causing improvement in self-care and decrement in fatigue and somatic pain of patients, which ate one of the symptoms of MS disease.[2] These results are in agreement with the results of this study.

Findings of this study show that there is a significant relationship between supportive services and health feelings and condition of patients and decrement in anxiety regarding their health. This means that with increase in supportive services, health condition of patients compromised previously will be increased and they feel more relaxation and less anxiety in this regard. In the study by di-Fabio et al in America (1997) (one group of patients with comprehensive rehabilitation services and one group without these services) value of these services in regard to improvement of quality of life in correspondence with patients' health, were shown.[17] These results are in agreement with the results of this present study.

In this research, also, relationship between supportive services and improvement of quality of life from the patient's point of view is evaluated. According to these results, there is a direct relationship between them. As a result it can be deducted that with delivering more supportive services, how the patients feel about his/her life and his/her evaluation of quality of life will be better. According to Peres, quality of life, in fact, is a manifestation, and projection of the patient's life experiences on the base of an individual's views.[18] So, it is important to estimate the views and thoughst of the patient regarding his/her health condition.[19] According to the study by Benedickt et al (2005) about the effect of different parameters regarding prediction of quality of life, it is seen that quality of life according to the patients view, is the most powerful predictor in quality of life of a MS patient.[20]

References

1. *Karimi Darman H.R.; Rehabilitation of special group with a focus on social work services, Tehran, Gostareh Publication; 2003.*
2. *Raeisi H; Thesis on assessment of education effect on self-care method and the incidence of common problems in MS patients referred to internal/neurology clinics of Shiraz city, Iran medical sciences and health treatment services university, 1998.*
3. *Azimian M; Somatic and psychic rehabilitation in MS patients; Journal of Rehabilitation. No 3,2000.*
4. *Murphy N, Confaureux C, Haas J, et. al. Quality of life in Multiple Sclerosis in French, Germany and the United Kingdom. Cost of Multiple Sclerosis study Group, Journal Neurosurg Psychiatry 1988;65: 460-6.*
5. *Dunn, Sheila A., et al. Quality of life for spouses of CAPD patients Journal of advanced Nursing,1994.*
6. *Madani H,Navipoor H, Roozbayani P; Effect of self-care on use of comparative procedures by MS patients; Kashan Medical sciences and health- treatment services univ., Journal of Feyz, , year 9, No. 3; 53-57,2005*
7. *Trisolini M, Wiener J, Miller D; Principles to promote the Quality of Life of people with MS. 2002 (www.Nationalmssociety.org).*
8. *Olive ,J, et al. Quality of life and Mental Services .Firsted ,London , Rutledge ,1996 :14-18 .*

9. Barbara G.Vickrey, MD. Multiple Sclerosis Quality of life (MSQOL)- 54 Instrument. Los Angeles, University of callifornia,1995.
10. Etemadifar M, No of MS-affected individuals in Iran country (www.sanimemorirs.com/archives/2006/09/2)
11. MS association of Iran; No of MS-affected individuals in Iran(www.irmss.org)
12. Borhani Haghighi A, Ghaem H; Study of quality of life in MS patients ; translation and cultural comparison of 54-question questionnaire regarding quality of life of MS patients; Journal of Brain and neuron sciences of Iran; year 4, No. 11-10,40-56,2005.
13. Cmilleri J, Brennan S. management of quality of life in surgery, J, R, Surg, Edinb, 1999;44:252-259.
14. Somerset M, Sharp D, Campbell R. multiple Sclerosis and Quality of life; a qualitative investigation. J Health servers policy 2002;7(3):151-9.Level of Evidence: 3.
15. Pahlavanzadeh S, Alimohammadi N; Effect of self-care on quality of life in multiple sclerosis referred to M.S clinic of Isfahan.2000.
16. Sutherland G, Andersen MB, Morris T. Relaxation and Health - related Quality of life in Multiple sclerosis: The example of autogenic training. J Behar Med. 2005;28,249-256.
17. Di Fabio RP, Choit, Soderberg, J, Hansen CR. Health-relate Quality of life for patient with progressive Multiple Sclerosis. University of Minnesota, 1977; 77(12) : 1704-16.
18. Parse, Rosemire. R. Quality of life: Science and living the art of human be coming. Nursing science Quattery, 1994;7(1) :16-20.
19. Ferel BR, Cohenn Ms, Rhiner M, Rozek A. pain as a metaphor for illness. Part 2: family caregiver's management of pain, oncology Nursing Forum,1991;18(8): 1315-21.
20. Benedict RH, Wahling E, Bakshi R. Fishman I, Munschauer F, Zivadinor R, Weinstock Guttman B. Predicting quality of life in multiple sclerosis. J Neurol Sci, 2005;231 (1-2):29-34.

Table 1: Correlation between supportive services and variables of improvement somatic health, decrease of somatic and emotional limitations in performance of role, pain decrement and psychic health improvement.

Statistical Test	Psychic improvement	Pain decrement	Decrease of emotional limitation in performance of role	Decrease of somatic limitation in performance of role	Somatic improvement	
Correlation Coefficient	** 508/0	* 315/0	* 277/0	512**/0	282*/0	Supportive services
Significance Level	0/00	014/0	032/0	00/0	029/0	
No	60	60	60	60	60	

** $p \leq 0.01$

* $p \leq 0.05$

Table (2): Correlation among supportive services and variables of fatigue decrement, increment of health sense, improvement of social cognitive performance and decrement in anxiety about health.

Statistical Test	Decrease of anxiety	Improvement in cognitive performance	Improvement in social performance	Improvement in health feeling	Fatigue decrement	
Correlation Coefficient	** 392/0	* 276/0	* 359/0	* 305/0	** 465/0	Supportive services
Significance Level	002/0	033/0	005/0	018/0	00/0	
No	60	60	60	60	60	

** $p \leq 0.01$

* $p \leq 0.05$

Table (3): Correlation among supportive services and variables of sexual performance improvement, health situation improvement, increment in pleasure of sexual performance and improvement in quality of life from the patient's point of view.

Statistical Test	Improvement in quality of life from patient's point of view	Increase in pleasure from sexual performance	Improve in health condition	Improve in sexual performance	
Correlation Coefficient	* 271/0	268/0	* 289/0	179/0	Supportive services
Significance Level	036/0	086/0	025/0	257/0	
No	60	42	60	42	

* $p \leq 0.05$

Table (4); Correlation between supportive services and somatic/psychic aspects of quality of life.

Statistical Test	Psychic dimension of quality of life	Somatic dimension of quality of life	
Correlation Coefficient	** 487/0	504**/0	Supportive services
Significance Level	00/0	00/0	
No	60	60	

** $p \leq 0.01$

HPV Vaccine Hype
The Gardasil; The Approved First World Cervical Vaccine

Dr. Ebtisam Elghblawi (MBBCh, MSc)

Correspondence:
Dr. Ebtisam Elghblawi
Email: ebtisamya@yahoo.com

Key words: HPV, genital HPV, Pap test, cervical cancer vaccine, Gardasil, HPV vaccine.

ABSTRACT

Cervical cancer is a common type of cancers that affects women worldwide. It is considered to be the second most seen cancer among women, and sometimes at younger ages it can be life-threatening. It is closely linked to HPV infection; especially HPV 16 and 18 strains which cause the lining of the cervix to change from normal to precancerous lesions, which if not detected and treated can change to cancer. Also HPV is associated with development of skin-coloured growths (genital warts). It is a very preventable disease due to the Pap screening test, which is still missing in developing countries sadly, and therefore many cases go undetected or present at a late stage whereby no further actions can be done. And this is considered a total tragic loss and waste of women.

This review article will highlight a simple, and general overview about HPV epidemiology, Pap screening in the era of HPV vaccination, and the proposed and approved Gardasil vaccine to combat cervical cancer in terms of effectiveness, tolerability, safety and pricing; and including Gardasil dosing, and administration, and its importance as a life-saving vaccine against cervical cancer. The vaccine is considered to be currently a great advancement for women's health however there still remains unanswered questions.

Epidemiology

About 9710 women in the USA annually are diagnosed with cervical cancer according to the American Cancer Society (ACS, 2006). About 20 million cases are infected with HPV worldwide, out of which about 6 million are American and about 400,000 in the developing world itself, with about 290,000 dying of cervical cancer worldwide annually (Stella Heley, 2007). According to CDC (Center of Disease Control and prevention), it is estimated that by age 50, about 80% of women will have genital HPV infection.

Finland and Australia is well known to have the lowest cervical cancer rate in the world, due to the national screening program. Australia has the second lowest record in the world, by about 60%, since the introduction of the national screening program in 1991 About 700 women are diagnosed each year and about 240 die. This is due to either not having a Pap test in the past 10 years, or being inadequately screened, and around 75% were over 50. 80% of cervical cancers are caused by HPV 16 and 18.

HPV is responsible for 99.7% of cervical cancer, 90% of genital warts, 70% of anal cancer, 50% of penile cancer, and about 25% of oropharyngeal cancers (Anonymous, 2006, Abby Lippman, Ryan Melnychuk, et al, 2007, Jenny may, 2007). HPV is a DNA virus which exhibits about 200 different strains classified according to DNA sequences, and about 30 are known as Sexually Transmitted Viruses (Judy Norsigian; Alicia Priest; Robin Barnett, 2007, Jenny may, 2007, Stella heley, 2007), and 40% are anogenital strains with 15 high risk types (oncogenic); HPV 16, 18, 31 &45. HPV types 16 and 18 are considered to be of high potential risk (70%) for developing cervical cancer worldwide, and 50% high-grade lesions; especially high-grade squamous intra-epithetial cancer, and cervical intra-epithetial cancer, while HPV 31 and 45 cause 10% of the cancer, and affect both the male and female genital area (Joanna Breitstein, 2006, Cormac Sheridan, 2007, Maryann Napoli, 2007), whereas type 6, 2 and 11 are low risk and blamed for 90% of genital warts, with 10% low-grade cervical lesions (Jenny May, 2007, Chemist & Druggist, 2007, Stella Heley, 2007).

HPV is the commonest Sexually Transmitted Disease (STD) and is highly infectious with 50% transmission rate post exposure (Jenny may, 2007). It's a common sexually transmitted disease , and it enters the skin through tiny micro-abrasions, where it remains confined to the surface epithelium, then enters the nucleus of the basal cell (Alicia Priest, 2006, Jenny May, 2007, Stella Heley, 2007). Then it relies on the replication of these cells, and its transformation, then exfoliation, and then spread. Via Pap smear those exfoliated cells are collected, and examined for certain features such as dense or double nucleus, or high nuclear-cytoplasmic ratio (Stella Heley, 2007). The immune cells cannott find it in order to fight it because HPV hides very well from the immune system. HPV is a very common infection in the first 10 years of establishing sexual activity. The first infection is sub-clinical, and what is called (common cold), and usually HPV infection clears within a year

in about 70% (Judy Norsigian; Alicia Priest; Robin Barnett, 2007, Jenny May, 2007, Stella Heley, 2007). There is no actual test to trace the clearance rate nor to suggest developing the actual cancer (Alicia Priest, 2006). Every active sexual woman will has at least one HPV infection in her lifetime, and the infection resolves on itsown so no-one can know if they are infected (Alicia Priest, 2006).

The WHO predicts a rise in mortality rate up to 25% over the next coming 10 years (Alicia Priest, 2006). The WHO is interested in including the vaccine in its essential medicine but the high costs, and the short supply remains a big obstacle. Also in the USA some conservative groups are opposed to making the vaccine a mandatory issue, and therefore their permission is needed for their girl's vaccination, as this will reflect a false message for safe sex, and encourage promiscuity (Maryann Napoli, 2007, Gill Jenkins, 2007). From the sex concept, the more partners a person has, the greater the HPV risk of infection (Alicia Priest, 2006).

HPV is a marker of sexual activity, and not everyone will develop cervical cancer. HPV is associated with poverty, poor nutrition, smoking, lack of education, low standard of living, all of which compromises the immune system and thus HPV persists and so cervix cancer can occur (Maryann Napoli, 2007, Judy Norsigian; Alicia Priest; Robin Barnett, 2007).

Pap test: Papanicolaou, 1949/50.

Cervical cancer is 90% preventable with Pap screening and treatment. Therefore this brings up the necessity of a Pap test, which after its introduction has dropped the cervix cancer rate by 75%. It is a simple screening tool for cervical cancer. It is carried out routinely in some countries such as the UK, and not available yet in the developing countries where women are still dying of a preventable disease. The vaccine does not replace the routine cervical cancer screening Pap test (Judy Norsigian; Alicia Priest; Robin Barnett, 2007).

The cervical squamous changes occur at the squamo-columnar junction (Stella heley, 2007). This area is vulnerable to infection by HPV (Stella Heley, 2007). So the Pap test is aimed at picking-up this area with the cellular changes (Stella Heley). The squamous changes can vary between low-grade squamous intraepithetial lesions, or high-grade squamous intraepithetial lesions (previously known as CIN).

The old CIN term can be treated, in order to prevent progression to squamous cell cervical cancer (Stella Heley, 2007). If the smear reveals atypical cells, or a low-grade lesion, the body will defend itself via the immune system (Judy Norsigian; Alicia Priest; Robin Barnett, 2007). But those women with high-grade lesions should be followed by further testing. The glandular changes smear (columnar epithelial cells at endocervical canal) should be referred for colposcopy by an expert gynaecologist oncologist. Removal of the abnormal cells prevent invasive cancer in 90% (Judy Norsigian; Alicia Priest; Robin Barnett, 2007, Jenny May, 2007).

Merck`s HPV Gardasil vaccine

This quadrivalent HPV recombinant vaccine (Gardasil), was developed to combat and prevent cervical, and precancerous genital warts by producing neutralizing antibodies which bind tightly to the virus surface and prevent its attack on host cells (Alicia Priest, 2006, Angie L.Goeser, 2007, Anonymous, 2007). The non-infectious vaccine is composed of highly purified virus like particles (Jenny may, 2007). It is a white cloudy liquid given by intramuscular injection in three stages as is the case with hepatitis vaccine (Monica R McLemore, 2006). It cannot be given to pregnant women, and is not recommended for lactating women though there is no documentation yet regarding its excretion in milk. It is recommended for girls and women between 9-26 years (Barbara Sibbald, 2006, Anonymous, 2006, Angie L. Goeser, 2007). It should be shaken well before given The first dose is given, then two months later after dose 1 another, and finally six months after dose 1, yet another, in either the deltoid or upper antero-lateral thigh area (Angie L. Goeser, 2007). It is not known yet if a booster shot is needed.

The vaccine can be given concurrently with hepatitis, tetanus, reduced diphtheria, acellular pertussis, and meningococcal vaccines but not in the same syringe, or the same injection sites (FDA, 2006, Monica R McLemore, 2006, Angie L. Goeser, 2007, Jenny May, 2007). If the vaccine series is interrupted for one reason or another, it should be continued without restarting the whole series (Angie L. Goeser, 2007). There is no need to assess the HPV status before vaccination (Angie L. Goeser, 2007). The single dose costs $147, and the three-dose series $441 (Alicia Priest, 2006, drugs and herbs, 2006, Anonymous, 2006, Angie L. Goeser, 2007, Stella Heley, 2007). Side effects reported are pain, swelling, erythema, fever, nausea, naso-pharyngitis, dizziness, diarrhea, vomiting, myalgia, toothache, respiratory tract infection, malaise, arthralgia, insomnia, and nasal congestion (Monica R McLemore, 2006, Angie L. Goeser, 2007, Jenny May, 2007). It has been manufactured by Merk and Co., and has been offered int two forms: single-dose vials (0.5 ml), or single-dose, pre-filled, luer lock syringes (0.5ml). This vaccine should be refrigerated at 36-46 F, and should not be frozen. The main purpose for the vaccine is to prevent and not treat or cure those who have already contracted the HPV virus already (Alicia Priest, 2006, Jenny May, 2007). Also the vaccine would not work against other types other than HPV 1, 11, 16, and 18 (Monica R McLemore, 2006). It is not known how long the vaccine will protect, but protective antibodies persisted for about four to five years (Marc Iskowitz, 2006, Angie L. Goeser, 2007).

In June 2006 the FDA (U.S. Food and Drug Administration) has approved the first vaccine (Gardasil) for preventing cervical cancer, and genital warts in females between 9-26 years based on clinical trials (Marc Iskowitz, 2006, Barbara Sibbald, 2006, Jenny May, 2007). The CDC (Centers for Disease Control and prevention) recommended vaccination of those

girls between 11-12 years of age before indulging in sexual activity, and it was added to the prevention vaccine program in 1 November 2006, and also it can be given to young females of 9-10 years before starting sexual activity (Angie L. Goeser, 2007, Jenny May, 2007). Catch-up vaccination is recommended for those who are 13 to 26 years (Angie L. Goeser, 2007). It is also advocated to vaccinate boys and young men between 9-15 years to prevent HPV infection with type 6, 11, 16 &18 but study on this is not yet completed, and maybe will be licensed later, plus the fact that men will be the natural community reservoir for HPV virus (Stella Heley, 2007, Meenakshi Dawar, Shelley Deeks, Simon Dobson, 2007, Gill Jenkins, 2007). The vaccine became available in Australia in August 2006. Australia is the 3rd country who have approved the vaccine after FDA in June 2006 (Stella Heley, 2007).

Also another new cervix bivalent cancer vaccine "Cervarix" has been launched in the UK in 2005, which is manufactured by GlaxoSmithKline (Natasha T Metzler, 2005). It has been estimated to be effective against two Human Papilloma virus; HPV 16 and 18, which are claimed to be the culprit for more than 70% of cervical cancer cases (Marc Siegel, 2006). This has been followed then by the vaccine "Gardasil" by Sanofi Pasture MSD in the UK in 2006, which is effective against HPV 6, 11, 16 and 18 (Natasha T Metzler, 2005, Pauline Comeau, 2007). It is actually developed by Merck in New Jersey; at the Whitehouse station (Cormac Sheridan, 2007). It is still not approved finally by the UK NHS, however some private sectors provide it (Marc Siegel, 2006, Anonymous, 2007).

According to Merck and Co. (drug manufacturers), Gardasil is the perfect guard, as it carries promising results in short terms; it has been targeted against the two common types of HPV (16 & 18), which are the main culprit of cervical cancer and genital warts. The trials were carried out on about 25,000 patients between 16-23 years in about 33 countries and the trial is in its Phase III, and showed 100% effectiveness (Kathie Lynas, 2005, Marc Siegel, 2006). It should be borne in mind that this vaccine would not protect against other HPV strains (research highlights, www.nature.com/reviews/cancer, 2005). The vaccine will provide protection against HPV 6, 11, 16 & 18.

The Gardasil vaccine's availability and implementation needs the work, the cooperation, and full engagement of stakeholders; whether media, opinion leaders, physicians, pharmacists, health workers, and the whole general populations to unleash the market for this vaccine. After all public health education campaign (safe sex, condom use, cervical cancer screening) is important rather than plugging in the vaccine without an explanation which will affect its acceptance from the public generally speaking (Abby Lippman, Ryan Melnychuk, et al, 2007).

Equally both Gardasil and Cervarix are extremely immunogenic; both induce high antibody titres that are many times higher than those induced by natural HPV infections, and this immunity lasts for about 5.5 years, (Meenakshi Dawar, Shelley Deeks, Simon Dobson, 2007).

The vaccination program should be built on tangible goals; for instance whether to eradicate the high-risk HPV types from the population, or to cut the death rate from cervical cancer, all of which need a different approach and strategy (Abby Lippman, Ryan Melnychuk, et al, 2007). In both cases thais implies considering vaccination of boys and young men in the former goal, and/ or directing Gardasil to all HPV types (broad ranges of oncogenic HPV) apart from considering the only two high-risk HPVs (16&18) in the latter goal (Abby Lippman, Ryan Melnychuk, et al, 2007).

The 9-13 years age group should be the priority target group for mass vaccination. vaccinated girls and women should still restrict themselves to safe sex practices, and consider the care program of Pap testing due to missing of effectiveness data regarding Gardasil, and it is still not confirmed yet how much the vaccine can add value, plus the fact that it only protects against some HPV types and not all (Anonymous, 2006, Abby Lippman, Ryan Melnychuk, et al, 2007). Finally there are still more questions than answers about HPV and Gardasil. Parents are now worried about the growing number of vaccines which are given to babies and young children.

Education of public

It is essential to educate the public about cervical cancer and hence to cut down its incidence when possible, by considering the following points:

- Government should educate public about cervical cancer, HPV, genital warts, and Gardasil (Abby Lippman, Ryan Melnychuk, et al, 2007).
- Address the importance of healthy perssonel and safer sexual practices.
- Regular Pap testing for women.
- Screen for STDs.
- Cessation of smoking.
- Uphold unbiased research for evidence-based policy, and health care decision-making.

Conclusion

In developed countries Pap smear is the sole mandatory tool, in order to rule out any affected case, but on the contrary in developing countries this is still missing, and many cases go unnoticed. It is vital to develop a national immunization strategy to make certain a complete and systematic appraisal of all relevant factors before decisions regarding the implementation of a new immunization program are made. Also in order to halt cervical cancer, we needs improved reproductive health practices and the widespread availability of publicly funded programs for Papanicolaou smear testing, with follow-up testing for suspicious lesions.

After all it is not clear how much Gardasil will add in this aim, and how safet it is; unfortunately if something new has been discovered, tested and found to be working well, that does not imply it is correct; as, for example the story about the drug failure; COX-2 (Vioxx); when Vioxx was discovered before 2003 and had been announced widely and been used by many globally, and sometime later on it was revealed that it caused serious cardiac risks, and then withdrawals from the market began

in 2003. In that case there should be always a warning before anything new is released, and on what basis.

It's also very important to consider the social and the cultural resistance in each country, and also to implement the vaccine before girls become sexually active, in order to save lives, especially in the developing countries. After considering the HPV strains, which are associated with cervical cancer development, and the fact that it can't protect against other HPV strains, the vaccine will reduce, rather than eradicate HPV infection and this is the correct description for Gardasil. Based on this fact, and from this concept, therefore Gardasil cannot be proposed for every woman, because it is costly for the public health funds at this stage. Gardasil might prove to be a useful tool in the long run, after collecting enough data on its administration on girls, and ruling on its safety and effectiveness as well. Until then the Pap screening should be funded and developed for every women in all nations. Finally Pap screening remains the mandatory tools for preventing cervical cancer.

It is still not yet known how much the incidence of cervical cancer in the developing countries is due to the lack of a cervical cytology screening program, and thus many cases are lost without early diagnosis, and that is a big waste, and will contribute to the high mortality rate for a preventable killing disease of women. Therefore it is important to raise the issue with the decision makers, about the importance of Pap testing, in ruling out those affected cases and applying treatment at earlier stages. Gardasil cannot replace the requirement of Pap testing.

Also it is not clear yet if Gardasil will protect against other STDs, plus vaginal and vulvar cancers, and if young men were vaccinated, to cut down the incidence of HPV infection rate, as men are the only reservoir for HPV. Also not known yet is if a booster dose of Gardasil is needed or not as a matter of fact for its effectiveness which will last from 4 to 5 years according to the trials finding.

Lastly it is mandatory to raise public health awareness and education about safe sex, practice, and safety by changing behaviours, and applying a new studied strategy to promote the better reproduction health of the community, by targeting younger age groups with an education mass media campaign which is the cornerstone for any primary health care.

References

Anonymous, news: In brief, Practice Nurse; 2007; 34, 6; ProQuest Nursing & Allied Health Source, pg. 10.

HPV vaccine beyond the hype, 2007, www.ConsumerReports.org 47.

Kathie Lynas, Late Clips, Canadian Pharmacists Journal; 2005; 138, 7; ProQuest Nursing & Allied Health Source, pg. 21.

Research highlights, www.nature.com/reviews/cancer, 2005, vol 5, p 840.

Drugs and Herbs, Cancer vaccine approved, 2006, Consumer Reports on Health, 6.

Monica R McLemore, Gardasil®: Introducing the New Human Papillomavirus Vaccine. Clinical Journal of Oncology Nursing; 2006; 10, 5; ProQuest Medical Library, pg. 559.

Barbara Sibbald, News @ a glance, Canadian Medical Association. Journal; 2006; 175, 5; ProQuest Medical Library pg. 464.

Nature biotechnology, www.nature.com/nature-biotechnology, 2007, vol 25, no 3.

Angie L. Goeser, Quadrivalent HPV Recombinant Vaccine (Gardasil) for the Prevention of Cervical Cancer, steps New Drug Reviews, 2007, American Family Physician, Vol 76, No 4, 574.

Anonymous, Merck Gains Approval for Two New Vaccines, Biopharm International; Jul 2006; 19, 7; ProQuest Nursing & Allied Health Source pg. 16.

Abby Lippman, Ryan Melnychuk, Carolyn Shimmin, Madeline Boscoe, Human papillomavirus, vaccines and women's health: questions and cautions, 2007, CMAJ, 177(5).

Alicia Priest, Cervical cancer vaccine may come soon to Canada, Canadian Medical Association. Journal; 2006; 175, 3; ProQuest Medical Library pg. 235.

Anonymous, New Vaccine Prevents Cervical Cancer, FDA Consumer; 2006; 40, 5; ProQuest Medical Library, pg. 37.

Anonymous, CDC releases 2007 immunization schedule, adds 2 new vaccines Healthcare Traveler; Feb 2007; 14, 8; ProQuest Nursing & Allied Health Source pg. 62.

Maryann Napoli, How Vaccine Policy is made: The Story of Merck and Gardasil. HealthFacts; Mar 2007; 32, 3; ProQuest Nursing & Allied Health Source pg. 1.

Anonymous, Rapid approval of vaccine for prevention of cervical cancer. WHO Drug Information; 2006; 20, 2; ProQuest Nursing & Allied Health Source pg. 88.

Anonymous, Rolling out HPV vaccines worldwide, The Lancet, 2006; 367, 9528; ProQuest Medical Library pg. 2034.

Judy Norsigian; Alicia Priest; Robin Barnett, GARDASIL: What you need to know about the HPV vaccine, Canadian Women's Health Network; 2007; 9, 3/4; ProQuest Nursing & Allied Health Source pg. 14.

Chemist & Druggist., Clinical News: HPV vaccination for all girls, proquest, 2007. pg. 18.

Marc Siegel, Antidote, Medical Marketing and Media; 2006; 41, 8; ProQuest Nursing & Allied Health Source pg. 14.

Marc Iskowitz, Gardasil ads remain platonic... for now, Medical Marketing and Media; 2006; 41, 7; ProQuest Nursing & Allied Health Source pg. 11.

Cormac sheridan, dublin, biotrin assay to monitor cervical cancer exposure rates, news, vol 25 no, 2007 nature biotechnology.

Joanna breitstein, cervical cancer: endangered species, pharmaceutical executive; may 2006; proquest nursing & allied health source, 26, 5 pg.154.

Jenny May, HPV vaccination; A paradigm shift in public health, Australian Family Physician, 2007, Vol 36, No 3, 106.

Natasha T Metzler, Potential HPV Vaccine Roadblocks, Pharmaceutical Executive; Dec 2005; ProQuest Nursing & Allied Health Source, 25, 12pg. 26.

Stella Heley, Pap test update, Australian Family Physician, 2007, vol 36, no 3, 112.

Meenakshi Dawar, Shelley Deeks, Simon Dobson, Human papillomavirus vaccines launch a new era in cervical cancer prevention, 2007, CMAJ, 177(5).

Gill Jenkins, HPV vaccine debate, Hospital Doctor; 2007; ProQuest Health Management pg. 38.

Pauline Comeau, Debate begins over public funding for HPV vaccine, Canadian Medical Association. Journal; 2007; ProQuest Medical Library; 176, 7, pg. 913.

Table 1: Difference between both vaccines; Gardasil and Cervarix ((Meenakshi Dawar, Shelley Deeks, Simon Dobson, 2007).

Name	Gardasil	Cervarix
Manufacturer	Merck Frosst Canada Ltd.	GlaxoSmithKline Inc.
Type	Prophylactic vaccine consisting of virus-like particles containing L1 capsid proteins	Prophylactic vaccine consisting of virus-like particles containing L1 capsid proteins
Antigens	Quadrivalent vaccine: HPV types 6 ,11 ,16 and 18	Bivalent vaccine: HPV types 16 and 18
Dose	0.5 mL intramuscular injection at 0, 2 and 6 months	0.5 mL intramuscular injection at 0, 1 and 6 months
Approval	Approved for sale	Not yet available

How to Visualize Public Health Data? Part one: Box Plot and Map

ABSTRACT

Health care professionals including family physicians increasingly become involved in public health data analyses. Data visualisation is the first step in data analyses, which help to disclose complex structures within data. The chief aim of the present article, which is the first article in a series of two, is to discuss the pros and cons of two ways of data visualisation i.e. box plot and map using a real public health data example.

Dr. Mohsen Rezaeian (PhD, Epidemiologist, Associate Professor)
Social Medicine Department, Rafsanjan Medical School, Rafsanjan, Iran.
Tel: +98 391 5234003
Fax: +98 391 5225209
Email: moeygmr2@yahoo.co.uk

Key Words: Box plot, Map, Data visualization, Health care professionals.

Introduction

Health care professionals increasingly become involved in public health data analyses. They either have to analyse public health data by themselves or have to use the results of the analyses, which have been done by other health care professionals. Therefore, they have to be familiar with different ways of public health data analyses. Data visualisation is the first step in data analyses, which help to disclose complex structure in data[1]. From this point of view, data visualisation may not only create interest and attract the attention of the viewer but also provide a way of discovering the unexpected[2]. In the present article, which is the first article in a series of two, the pros and cons of two ways of data visualisation i.e. box plot and map are discussed, using a real public health data example.

Box Plot

One of the most useful methods of summarising data is to present the lowest value, the lower quartile, the median, the upper quartile and the highest value in a graph called box plot[3]. In this display, the median is used to show the central value and the range of the upper and lower quartiles to show variability of the data.

To make this graph, a box is drawn with ends at the upper and lower quartiles and a crossbar at the median value. Next, a line is drawn from the lower quartile to the lowest value and from the upper quartile to the highest value. To complete this picture and by using the following formula, the position of the outliers is also indicated usually using a circle symbol[3]:

Lower quartile - 1.5 inter-quartile range & upper quartile + 1.5 inter-quartile range

The application of box plot will be demonstrated using a public health database later on.

Map

“From the perspective of public health practice, knowledge that a health problem is concentrated in identifiable places is essential for the efficient distribution of resources for prevention, treatment or amelioration[4].” Therefore, maps are becoming more and more important in public health data analyses.

The production of attractive and informative disease maps harmonize any formal statistical analyses of spatial variations and for their attractiveness, maps will influence the recipient of the information much more than the associated statistics(5). Maps reveal geographical relations that are not obvious from numerical and tabular data[6].

However, like any other graphical displays there are a number of principals that one has to follow in order to produce an informed map. For instance, selecting the appropriate administrative boundaries, selecting the appropriate colour scheme or hatching, plus selecting an appropriate method of data classification patterns, are among the most important issues in mapmaking, which requires cautious considerations[5,7].

In the next section and by using a real public health data example I am going to show one of these principals i.e. selecting an appropriate method of data classification and for the rest

of these principals I am going to refer the readers to the other articles[4,5]. It should be noted that the process of classification can be explained as systematically grouping data based on one or more characteristics. This should result in a clearer picture and should also improve insight into the data. Research has also revealed that in order to get an overview of the theme mapped at a single glance, the number of classes should not exceed more than seven[8].

Public Health Data Example

The data used in this article comes from the results of Iranian National Demographic Health Survey (DHS) which was conducted in the year 2000[9]. The piece of data that was selected for visualisation purposes is related to the percentage of people over 15 years with hypertension in the then 28 provinces of Iran (Table 1). Based on the figures, which are presented in an ascending order in Table 1 it is very difficult to summarise the data or visualise any relationship between provinces.

In order to summarise the data a box plot was produced (Diagram 1). As mentioned earlier a number of important summary indices can be seen by this graph. For instance, by looking at this graph one could easily visualise the following summary indices:

Lowest value = 7.10

Lower quartile = 8.85

Median = 11

Upper quartile = 12.47

Highest value = 16.20

Inter-quartile range = 3.62

One also easily visualises that two provinces i.e. Markazi and Yazd were considered as the outliers for their high percentage of people over 15 years with hypertension i.e. 18.9 and 19.3, respectively.

Nevertheless, box plot is still unable to reveal any relationship between provinces. Therefore, one has to apply a map to reveal any such relations.

Therefore, two maps were produced from the current data selecting two acceptable methods of classification as follows: The first method is Quantile, which divides the number of observations evenly over the number of classes taken. The name of this method is based on the number of classes, for instance, when applied to four classes it is called Quartile and with five classes, Quintiles[8]. The second method is Equal Interval, in which the class width is equal for all classes[8]. For each map a white to black colouring scheme has been adapted. According to this scheme those provinces which have a higher percentage of people over 15 years with hypertension, have adopted a darker colour and vice versa.

Map 1 depicts a Quintiles classification of the percentage of people over 15 years with hypertension within different provinces of Iran. This map reveals all 28 provinces of Iran evenly categorized in five classes i.e. 6 provinces placed in three categories whilst five provinces are in two other categories. Based on this map there are five provinces i.e. Azarbayjan-e-shargi, Gilan, Qazvin, Markazi and Yazd, which adopt a black colour indicating that they have a high percentage of people over 15 years with hypertension.

Map 2 also depicts Equal Interval classification of the percentage of people over 15 years with hypertension within different provinces of Iran. For producing this map the highest percentage i.e. 19.3 has been detracted from the lowest percentage i.e. 7.1. Then, we get the resulting figure i.e. 12.2 divides by 5 i.e. the number of classes, which becomes equal to 2.44. This means that the interval between classes must be set at 2.44. Based on this map there are only two provinces i.e. Markazi and Yazd, which adopt a black colour indicating that they have a high percentage of people over 15 years with hypertension.

It should be noted that both maps are correct looking at the problem from different angles. Whilst Map One divides provinces evenly, Map two is more in accordance with box plot trying to highlight outliers. Both maps also highlight that more provinces in the northern and central parts of Iran suffer from hypertension compared to southern provinces.

Conclusion

Although maps reveal the spatial relationships that might not be seen in tables[10] we should not rely on the presentation of a single map[5] because a single map is only one of the large number of maps that might be produced from the same data[11]. On the one hand, it has been pointed out that the end point of data visualisation is not necessarily a single 'correct' map"[12], and, on the other hand, it has been argued that it is crucial to ensure that correct rules are applied in the mapping processes[13]. Furthermore, one should also bear in mind that other graphical displays such as box plot may also help health care professionals to better summarise and visualise their data[5].

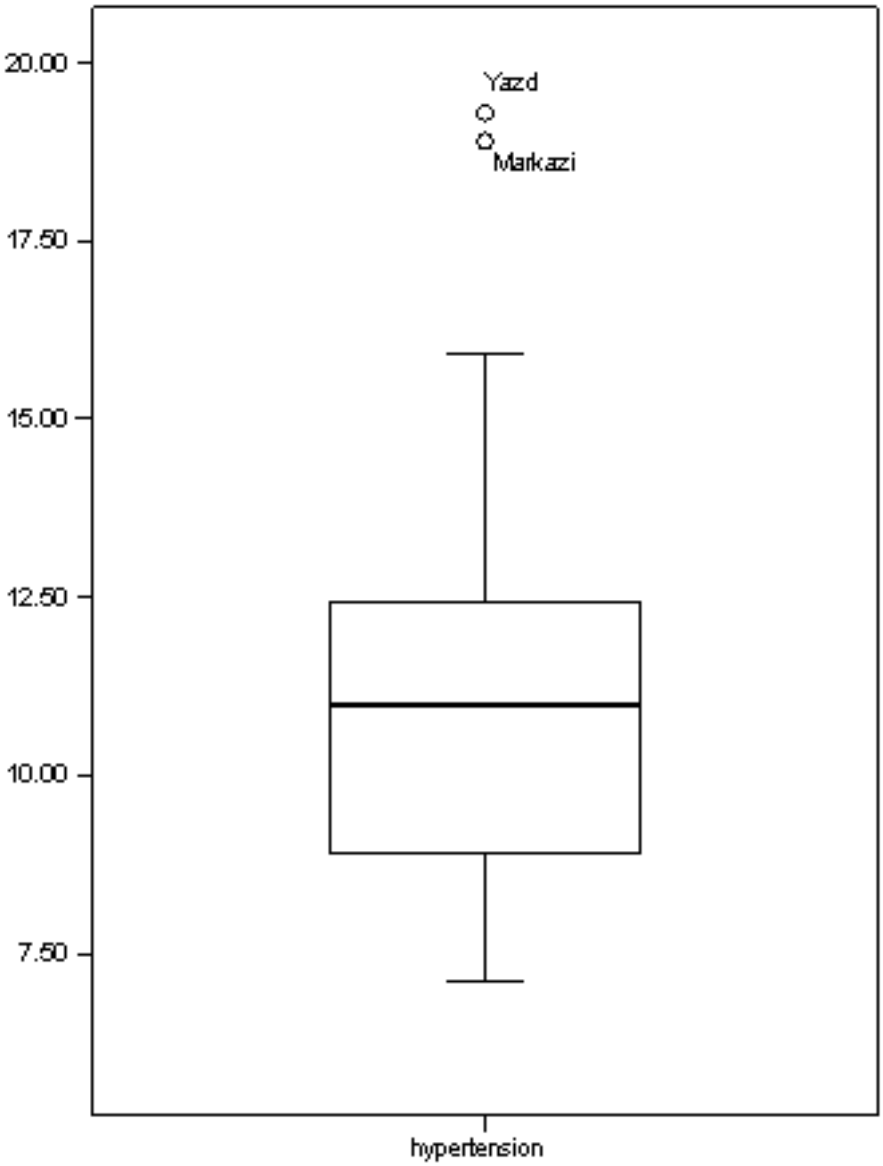
References

1. *Cleveland WS. Visualising data. Hobart Press, Summit, NJ, 1993.*
2. *Everitt BSE, Dunn G. Applied multivariate data analysis. London: Arnold, 2001.*
3. *Dunn G, Everitt B. Clinical biostatistics. London: Edward Arnold, 1995.*
4. *Rezaeian, M. Dunn, G. St. Leger, S. Appleby L. Geographical epidemiology, spatial analysis and geographical information systems: a multidisciplinary glossary. J Epidemiol Community Health 2007; 61 : 98-102.*
5. *Rezaeian, M. Dunn, G. St. Leger, S. Appleby L. The production and interpretation of disease maps: A methodological case-study. Soc Psychiatry Psychiatr Epidemiol. 2004; 39: 947-954.*
6. *Parchman, ML. Ferrer, RL. Blanchard, KS. Geography and Geographic Information Systems in Family Medicine Research. Fam Med 2002; 34:132-137.*
7. *Smans M, Esteve J. Practical approach to disease mapping. In Elliott P, Cuzik J, English D, Stern R. Geographical and environmental epidemiology-methods for small area studies, pp 141-150. Oxford: Oxford University Press, 1996.*
8. *Kraak M, Ormeling F. Cartography: visualisation of spatial data. Harlow: Longman, 1996.*
9. *National Demographic Health Survey (DHS). Iranian Ministry of Health and Medical Education; 2001.*
10. *Bell BS, Broemeling LD. A Bayesian analysis for spatial processes with application to disease mapping. Stat Med 2000; 19 : 957-974.*
11. *Monmonier M. How to lie with maps. Chicago: The university of Chicago Press, 1996.*
12. *Gatrell AC, Bailly TC. Interactive spatial data analysis in medical geography. Soc Sci Med 1996; 42 : 843-855.*
13. *Clif AD. Analysing geographically related disease data. Stat Methods Med Res 1995; 4 : 93-101.*

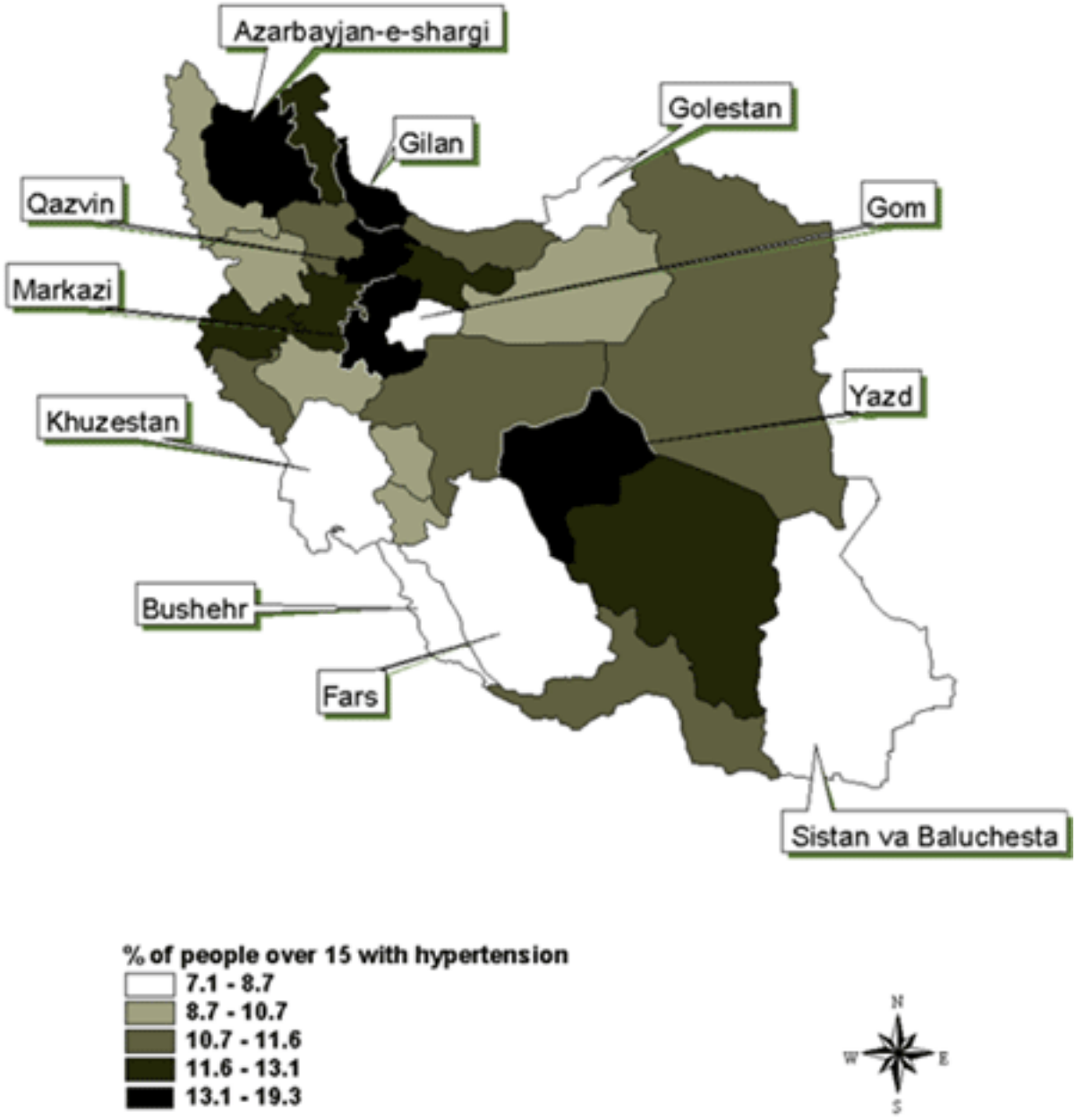
Table 1 The percentage of people over 15 years with hypertension within different provinces of Iran

Iranian Provinces	**% of people over 15 years with hypertension**
Gom	7.1
Bushehr	7.5
Sistan va Baluchestan	7.9
Khuzestan	8.6
Fars	8.7
Golestan	8.7
Semnan	8.8
Chahar Mahall va Bakhtiar	9
Azarbayjan-e-gharbi	9.2
Kordestan	9.3
Lorestan	10.4
Kohgiluyeh va Buyer Ahmad	10.7
Ilam	10.8
Mazandaran	10.8
Zanjan	11.2
Khorasan	11.2
Khorasan	11.4
Hormozgan	11.6
Kermanshah	11.7
Hamadan	11.7
Kerman	12.4
Ardabil	12.5
Tehran	13.1
Azarbayjan-e-shargi	13.5
Gilan	15.1
Qazvin	15.9
Markazi	18.9
Yazd	19.3

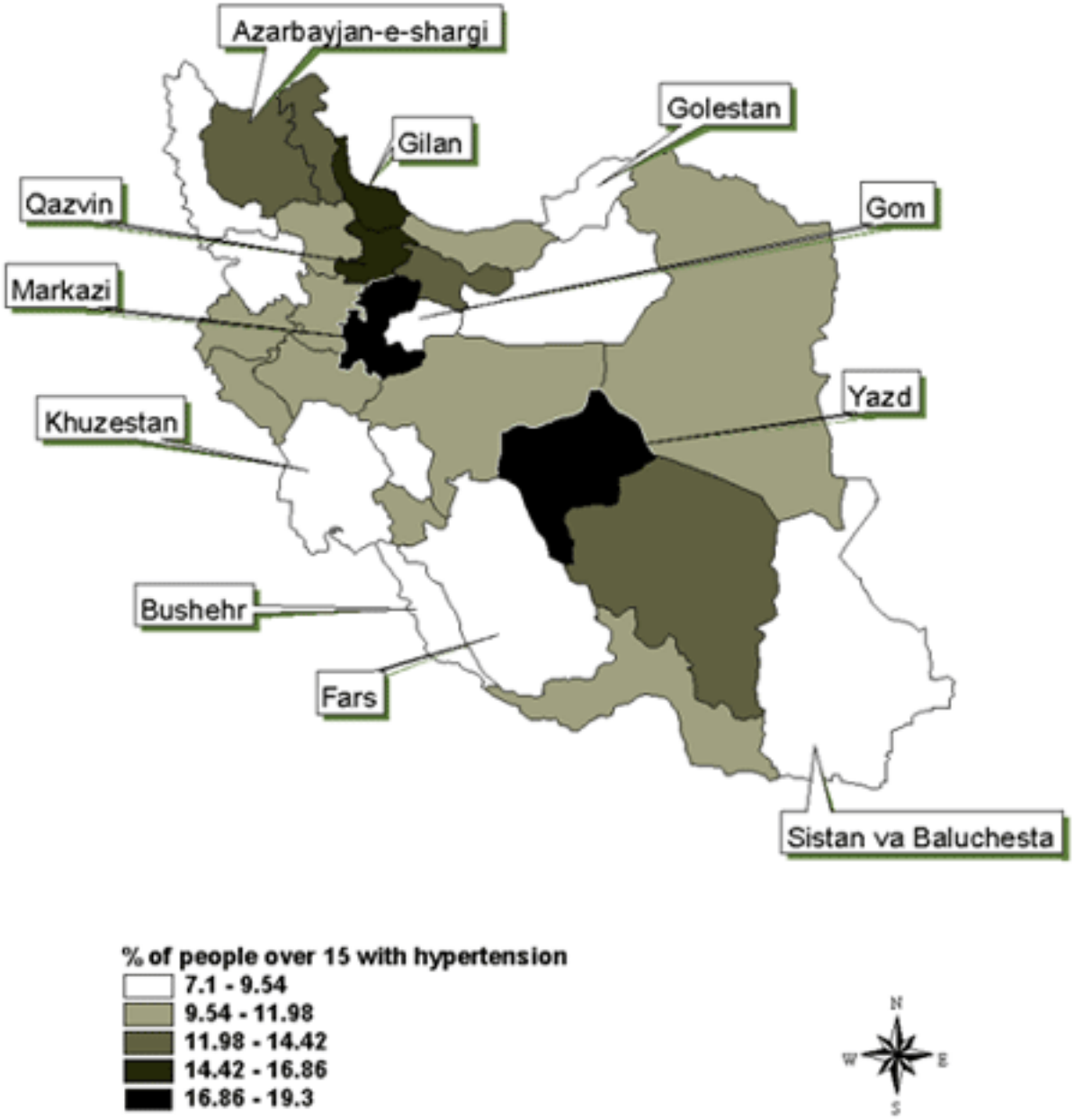
Diagram 1 Box plot depicting the percentage of people over 15 years with hypertension within different provinces of Iran



Map 1 Map depicting Quintiles classification of the percentage of people over 15 years with hypertension within different provinces of Iran



Map 2 Map depicting Equal Interval classification of the percentage of people over 15 years with hypertension within different provinces of Iran



Otological Manifestations among Patients with Cleft Palate

ABSTRACT

The worldwide incidence of cleft palate (with or without cleft lip) is 1:750-1:2000. Patients with cleft palate are more prone to hearing loss than normal individuals and this decrease in hearing is secondary to eutachian tube (ET) dysfunction. The dysfunction in ET function is due to an abnormal insertion of levator veli palatini and tensor veli palatini muscles into the posterior margin of the hard palate and the palatal aponeurosis.

Aser El-Hrout , MD*, Khaled Hamasha, MD*, Hussien Al-Qasim**

* : Otolaryngeologist

** : Audiologist

Correspondence:

Dr.Khaled Hamasha

P.O.Box 150029,

Area code 13115,

ZERKA, JORDAN

Email : khamasha73@yahoo.com

Key Words: cleft palate,ET dysfunction, otitis media with effusion (OME).

Aim and Objective

This study aims to :

1. Confirm the existence of otological problems associated with cleft palate.
2. To assess the severity of these problems

Materials and Methods

The cases are selected from patients attending the ENT clinic at KHMC (KING HUSSEIN MEDICAL CENTER) during the period between April 2006 - May 2007.

During the first visit, history and clinical examination of the head and neck region are undertaken followed by common and special investigations done during the next visit.

Hearing assessment was performed on patients 5 years of age and above using the tuning fork tests in the clinic and pure tone audiometry (PTA)

Patients younger than 5 years of age hadtheir hearing assessed by distraction tests.

Investigations :

1. PTA (patients > 5 years of age)
2. Tympanometry (to all patients in order to assess ET function)
3. X-ray mastoids (both sides)

Results and Discussion

56 cases of cleft palate patients (with or without cleft lip) are included in this study.

(18 patients were males and 38 were females).

20 patients belong to the age group 2-5 years (90% are females)

8 patients belong to the 1-2 year and 5-10 year age groups respectively.

8 infants were included in the study.

12 patients belong to the 10-20 year age group.

8 patients were older than 20 years.

About 87.5% of these patients with cleft palate are having ear problems.

12.5% of the ears affected have normal tympanic membrane (TM) (14 ears).

64.2% of the ears affected have dull TM with abscent normal TM landmarks (72 ears).

7.1% of the affected ears have active effusion with minimal retraction (8 ears).

14.2% of the ears affected have chronic suppurative otitis media with TM perforation. (16 ears).

1.85% of the ears affected have attic pathology and possible cholesteatoma (2 ears).

ET dysfunction was found among 84% of patients with cleft palate and that dysfunction is inversely related to the patient's age.

Regarding tympanometry:

23.2% of patients have Type A tympanogram.

75% of the patients have Type B tympanogram (recurrent effusion in the middle ear) which leads to mild to moderate conductive hearing loss.

Only 1 patient got Type C tympanogram with ET dysfunction (-ve middle ear pressure)

Conclusion

1. The most affected age group among patients with cleft palate is 2-5 years.
2. ET dysfunction is common among these patients.
3. Most of these patients with cleft palates and ET dysfunction suffer from hearing loss.
4. Adenoid size has no impact on the severity of hearing loss among patients with cleft palate.

References

1. *Goain AK, Conley SF, Santoro TD, Denny AD. A prospective evaluation of submucous cleft palate in patients with isolated cleft lip versus controls. Plastic Reconstructive Surgery 1999;103:1857-63.*
2. *Grabb WC. General aspects of cleft palate surgery. Little, Brown: Boston; 1971.*
3. *Graham MD. A longitudinal study of ear disease and hearing loss in patients with cleft lips and palates. Trans Am Acad Ophthalmol Otolayngol 1963;67:213.*
4. *Calnan JS. Sub mucous cleft palate. Br J Plast Surg 1954;5:286-96.*
5. *Harker LA, Koontz FP. The bacteriology of cholesteatoma Cholesteatoma: First International Conference. Aesculapius: Birminghamm; 1977. p. 264-7.*
6. *Cummins CW. Otolaryngology and Head Neck Surgery. 3rd edn. Mosby: Cleft Lip and Palate.*
7. *Kaplan EN. The occult sub mucous cleft palate. Cleft Palate J 1975;12:356-68.*
8. *Kelly AB. Congenital insufficiency of the palate. J Laryngol Rhinol Otol 1900;25:281-342.*
9. *Ludman H, Wright T. Diseases of the ear, 6th edition 1998.*
10. *Miller MH. Hearing problems associated with cleft palate. Ann Otol Rhinol Laryngol 1959;68:90.*
11. *Master FW, Bingham HG, Robinson DW. The prevention of hearing loss in children with cleft palate. Plast Reconstruct Surg 1960;25:203.*
12. *Robinson PJ. Secretory otitis media and mastoid air cell development. Int J Paediatr Otolaryngol 1991;25:13-8.*
13. *HLinthicum FH. Incidence of middle ear disease in children with cleft palate. Cleft Palate Bull 1959;9:23.*
14. *Muntz HR. An overview of middle ear disease in cleft palate children. Fac Plast Surg 1993;9:177.*
15. *Severeid SR. A longitudinal study of Eustachian tube function and middle ear disease in cleft palate children. University of Iowa Master's Thesis: 1971.*
16. *Spriestersbach DC, Lierle DM, Moll KL, Prather WF. Hearing loss in children with cleft palates. Plast Reconstruct Surg 1962;30:336-47.*
17. *Seno S, Kamide Y, Schacharn PA, Paparella MM. Micropathologic changes of pars tensa in children with otitis media with effusion. Arch Otolaryngol Head Neck Surg 1994;120:815-9.*
18. *Severeid LR. Development of cholesteatomas in children with cleft palate. In : McCabe BF, Sade J, Abramson M editors. Cholesteatoma: First International Conference, Aesculapius: Birminghamm; 1927. p. 287-92.*

Table 1: The patients distribution according to otoscopic findings the number of ear s= 112)

Otoscopic findings	Number of ears	Percentage (%)
Normal TM	14	12.5
Dull TM	72	64.4
Retraction/OME	8	7.1
CSOM with TM perforation	16	14.2
CSOM with attic disease	2	1.8

Table 2: The patients distribution according to PTA(Pure Tone Audiometry) results(n=56)

Pure Tone Audiometry	Number of Patients	Percentage (%)
Normal hearing	13	23.5
Unilateral hearing loss	20	35.3
Bilateral hearing loss	23	41.2

Figure 1 A. Retraction pars - tense region, B. Dull TM with loss of light reflex - OME