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## From the Editor



**Abdulrazak Abyad**  
(Chief Editor)

This is the third issue this year. We are starting with this issue a special section on alternative health care and life style modification. In this issue there are two such papers, one that discusses the issue of macrobiotics and the second the issue of Cupping therapy "Al heijamah".

We also announce and congratulate our MEJFM Middle East Doctor of the Year, Professor Ali Reza Kaldi, from Tehran, Iran. Click here for more details.

The first paper in our series on alternative health care a paper from Lebanon addresses the health impacts of a macrobiotic lifestyle on people in some of the Middle Eastern countries, particularly in Lebanon. A cross-sectional study of developmental research was used for this research which consists of a quantitative approach that used a questionnaire filled by a random sample of respondents. The people surveyed, or the respondents, were individuals exposed to a macrobiotic lifestyle. The hypotheses were tested using frequency analysis, chart analysis and cross-tabulation using the Statistical Package for the Social Sciences (SPSS). The researcher concluded that most of the people in the surveyed Middle Eastern countries adopt macrobiotics or are interested in this lifestyle for health reasons primarily.

A second paper from Qatar attempted to test the effect of cupping therapy in treating chronic headache and chronic back pain. Cupping therapy "Al heijamah" is a very common non-conventional therapy in the Arabic societies. It has been used in the treatment of a wide range of conditions; such as hypertension, rheumatic conditions, ranging from arthritis, sciatica and back pain, migraine, anxiety, and general physical and mental well-being. The study was a clinical intervention (pre and post design)

utilizing non- conventional therapy (AL Heijamah) for treatment of patients with chronic back pain or chronic headache, with three months follow up at Out patients Department (OPD) of Hamad General Hospital (HGH), to show the efficacy of that procedure on chronic pain using Visual Analog pain scale, pre and post intervention. The total number of the participants was eighty six. The pain score for patients with headache was decreased from eight to four after cupping therapy followed by intermittent periods of fluctuation of pain scored from four to five for around five weeks, then it maintained constant at four score till the end of the follow up period. Meanwhile the pain scale for patients with low back pain decreased from seven to three after two weeks and stayed constant till the end of the twelve weeks. The authors concluded that the effect of cupping therapy (Al heijamah) for chronic headache and back pain has been studied and the results revealed significant improvements in participants as a result of cupping therapy.

A paper from Qatar looked at Knowledge, Attitude and Beliefs towards HIV/AIDS among Youth Students. The authors stressed that ignorance about the disease and how the virus is transmitted have often generated fear and prejudice towards those who are infected. A pre-tested semi-structured questionnaire was administered on 600 youth students selected randomly from Aligarh Muslim University campus. Mean age of respondents is 21.53 years. Awareness level about HIV/AIDS was quite high among youth students in AMU. About 60.5 percent of students are well aware about HIV/AIDS transmission. However, findings suggest that they have still a significant amount stigma about HIV/AIDS among them.

A retrospective case note review paper from Libya looked at gratification disorder in infants and children. It reviewed all the children referred to Neurodevelopment Clinic (NDC), Paediatric out-patient department at Al-Khadra hospital, Tripoli, Libya between year 2004 and year 2008 with the diagnosis of suspected epilepsy and abnormal behaviour. The author concluded that infantile masturbation is an important differential diagnosis of epilepsy and abnormal paroxysmal behaviour. It is often misdiagnosed because of its peculiar presentation in children, has a wide spectrum of different behavioural pattern without manual genital stimulation, a low index

of suspicion, and because parents are ashamed and afraid of stigma. Referral to professionals with experience in these sorts of behaviours often save time, money and prevents unnecessary investigations and treatment.

A case report from Jordan reported a case of Cutis Marmorata Telangiectatica Congenita at age 15 months. Cutis Marmorata Telangiectatica Congenita (CMTC) is an uncommon, sporadic congenital vascular malformation characterized by a generalized or localized reticulated cutaneous vascular network. It is one variant of a disorder of abnormal pigmentation of skin due to melanocytic and vascular abnormalities called Phakomatosis pigmentovascularis (PPV).

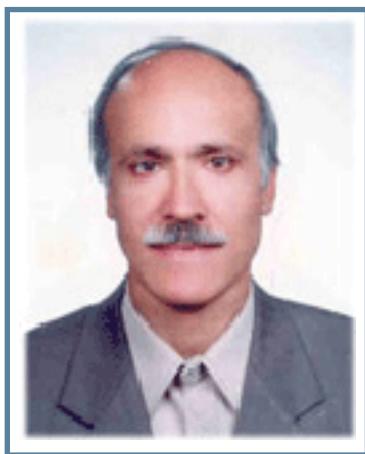
A paper attempted to compare the radiological manifestations of tuberculosis between diabetics and non diabetics. A total of 32 adult diabetic patients were compared with 32 adult non diabetic patients with smear positive pulmonary tuberculosis regarding pulmonary computerised tomographic findings from January 2001-December 2007 at King Abdulaziz University Hospital in Jeddah. Both groups had no significant difference in the radiological findings. The authors concluded that Tuberculosis has similar radiological presentations in both diabetics and non diabetics. High degree of suspicion is necessary for prompt diagnosis and treatment of tuberculosis as it can affect lobes other than the common upper lobes of the lungs.

A paper from Irbid looked at the effect of using antibiotics post tonsillectomy in decreasing post operative morbidity. Children of ages 2.5-10 years who underwent tonsillectomy with or without adenoidectomy. Patients were randomly divided into 3 groups, group A received Augmentin, group B received oral penicillin and group C received nothing. All patients were re-evaluated one week post surgery. Patients who received Augmentin (group A) were found to have less post tonsillectomy bleeding, less pain and resumed normal diet earlier than the other two groups. No significant difference was found between group B and group C. The authors concluded that antibiotics decrease post tonsillectomy morbidity, but depending on the type of antibiotic used, as Augmentin decreased post tonsillectomy morbidity in the study while oral penicillin did not.

# Special announcement:

## MEJFM Middle East Doctor of the Year for 2009

### Professor Ali Reza Kaldi Tehran, Iran



Our MEJFM Middle East Doctor of the Year for 2009 is Professor Ali Reza Kaldi (PhD, MA, BA) from the University of Welfare and Rehabilitation Sciences, Department of Sociology; Iranian Research Centre on Ageing, Evin, Tehran, Iran.

A prolific author, across a range of medical journals, Professor Kaldi's focus is on the often neglected sociological aspects of medicine and human well-being. He courageously explores the topics many of us find too hard, but explores them in a non-confrontational manner, allowing the reader to form a more educated view of the complexities of social problems and their effect on physical and mental health.

Lesley Pocock  
Publisher

#### Extracts from Professor Kaldi's Curriculum Vitae:

##### **Publications - Books**

Sociology of Modernization & Development,  
David Harrison  
Translated into Farsi 1998

Attitude Change & Social Influence,  
Arthur R. Cohen  
Translated into Farsi 1999

Understanding Crime Prevention:  
Social Control, Risk and Late Modernity  
Gordon Hughes  
Translated into Farsi 2001

Rehabilitation Nursing  
Dr S.S.B. Maddah, Dr A.R.Kaldi et al., Published in Farsi, 2002

East Asian Welfare Model  
Roger Goodman  
Translated into Farsi, 2002

The Sociology of Ageing  
Published in Farsi, 2003

Margaret Mead  
Published in Farsi, 2004

Introduction to Gerontology and Geriatrics, Dr H. Shojaei, Dr S. Maghsoudnia, Dr A.R. Kaldi et al  
Published in Farsi, 2005

##### **Articles**

"The Interrelations Between Environmental Structure and Social Anomie" , No. 28, Autumn 1379 (2000), Journal of Social Science, ShahidBeheshti University, Tehran – IRAN.

"Disabled Persons and Marriage : Problems and Obstacles", No. 31 Winter 1377 (1998) Journal of Social Science and Humanities

(Daneshnameh), Islamic Azad University, Tehran – IRAN .

"People's Attitude Towards Disable Persons", No. 11, Autumn 1379 (2000) , Journal of Social Science, Allameh Tabatabai University, Tehran–IRAN .

"Scientific Approach", No. 24 , Spring and Summer, 1380 (2001) , Journal of Science Policy (Rahyaft) , Tehran – IRAN .

"Students' Tendency in Following the Norms in High Schools in Tehran" No.19, Autumn. 1380(2001), Journal of Psychology, University of Tarbiat - Modaress, Tehran - IRAN .

"Science and Its Method", No. 25, Fall 1380 (2001), Journal of Science Policy (Rahyaft), Tehran - IRAN .

"Culture, Creativity & the Development of Science & Technology", No. 26, Winter 2002, Journal of Science Policy (Rahyaft), Tehran-IRAN .

"Globalization and its' Challenge for Higher Education and Research, No. 27, Spring 2002, Journal of Science Policy (Rahyaft), Tehran-IRAN .

"Citizens'Attitudes Toward Participation in Urban Management", No. 42, Winter 2002, Journal of Population, Tehran-IRAN.

"Sociological Analysis of Alienation Among University Students", No.35, Autumn (1381) 2002, Journal of Social Science, Shahid Beheshti University, Tehran-IRAN.

# DO DIABETICS HAVE DIFFERENT RADIOLOGICAL PRESENTATIONS FROM NON-DIABETICS IN PULMONARY TUBERCULOSIS?

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## Methods

The study was conducted at KAUH on adult PTB patients who were admitted to the isolation unit for confirmation of the diagnosis and treatment purposes. The patients were from different countries mainly Saudi Arabia, Yemen, Chad, India and Pakistan. The study period was from January 2001 till December 2007. PTB was considered if the sputum smear was positive for acid fast bacilli (AFB) and/or was positive for culture of mycobacterium tuberculosis. Patients were considered to be diabetic if they were known to have DM and were receiving anti-diabetic therapy at the time of hospital admission, or were later found to have at least two fasting serum glucose levels, greater than 126mg/dL, or random serum glucose levels greater than 200mg/dL.

Patients were excluded if they had positive HIV test, were receiving immunosuppressive treatment or steroids or had pleural effusion only.

Radiological evaluation was based on computerised tomographic scanning (CT) of the chest which was interpreted by two radiologists. The following features were studied: the presence of infiltrates, cavities, pleural effusion, hilar lymphadenopathy, side of lung affected (right, left or bilateral) and the lobe of the lung affected (upper, middle or lower).

Only 32 patients could be included as the study group (TB DM group). Out of 87 PTB patients who did not have DM, 32 patients were selected randomly as the control group (TB group). Charts were reviewed for their demographic data and chest CT scan reports.

## ABSTRACT

**Objective:** To compare the radiological manifestations of tuberculosis between diabetics and non diabetics.

**Methods:** 32 adult diabetic patients were compared with 32 adult non diabetic patients with smear positive pulmonary tuberculosis regarding pulmonary computerised tomographic findings from January 2001-December 2007 at King Abdulaziz University Hospital in Jeddah. Results were compared and analyzed.

**Results:** Both groups had no significant difference in the radiological findings. Upper lobe involvement was 81% versus 88% ( $p = 0.49$ ), lower lobe was 72% versus 53% ( $p = 0.12$ ). Bilateral involvement was 53% versus 56% ( $p = 0.83$ ) and cavities were present in 68% versus 54% ( $p = 0.30$ ) in the diabetics and non diabetics respectively.

**Conclusion:** Tuberculosis has similar radiological presentations in both diabetics and non diabetics. A high degree of suspicion is necessary for prompt diagnosis and treatment of tuberculosis as it can affect lobes other than the common upper lobes of the lungs.

**Keywords:** pulmonary tuberculosis, diabetes mellitus, computerised tomography

## Introduction

Diabetes mellitus (DM) and pulmonary tuberculosis (PTB) may coexist frequently, but the radiological manifestations of tuberculosis in diabetic patients may differ from non diabetic patients. In 1927 Sosman and Steidl(1) were the first to report a higher rate of lower lung field involvement in diabetics compared to non diabetics and later many others reported similar findings. (2-7) However, other authors have been unable to find these differences.( 8-10)

Since conflicting reports are present especially in Saudi Arabia, (5-9) where very little information is available on this subject, we decided to share our experience at King Abdulaziz University Hospital (KAUH) in Jeddah and conduct a comparative study to see the pattern of radiological presentations of PTB in diabetics and non diabetics.

	TB DM GROUP (32) N (%)	TB GROUP (32) N (%)	P
<b>Lung lobe affected</b>			
Upper only	6 (19%)	13 (41%)	0.27
Middle only	2 (6%)	0 (0%)	0.27
Lower only	4 (13%)	3 (9%)	0.27
Upper + Middle	1 (3%)	2 (6%)	0.27
Upper + Middle + Lower	8 (25%)	4 (13%)	0.27
Upper + Lower	11 (34%)	9 (28%)	0.27
Middle + Lower	0 (0%)	1 (3%)	0.27
All Upper Lobe	26 (81%)	28 (88%)	0.49
All Middle Lobe	11 (34%)	7 (22%)	0.26
All Lower Lobe	23 (72%)	17 (53%)	0.12
<b>Associated features</b>			
Cavity	17/25 (68%)	14/26 (54%)	0.30
Lymph nodes	13/25 (52%)	16/26 (62%)	0.49
Effusion	6/25 (24%)	3/26 (12%)	0.24
<b>Side affected</b>			
Right	6 (19%)	7 (22%)	0.83
Left	9 (28%)	7 (22%)	0.83
Bilateral	17 (53%)	18 (56%)	0.83

**TABLE 1. CT SCAN FINDINGS OF TB DM GROUP AND TB GROUP**

## Results

Men to women ratio was 1:1, Saudis were 41% while non Saudis were 59% in both groups. The age of the TB DM group was 47.17 years (range 15 - 75) and of the TB group was 32.19 years (range 12 - 70).

The CT scan findings are shown in Table 1. The TB DM group had lower frequency of upper lung lobe (ULL) lesions in comparison to the TB group (19% vs 41%) and higher frequency of lower lung lobe (LLL) lesions (13% vs 9%), but the difference was not statistically significant. When all the patients with the ULL lesions (joining upper, upper + lower, upper + middle and upper + middle + lower subgroups) were pooled together, both groups showed nearly similar results (81% vs 88%), but a higher frequency of pooled LLL lesions (combining the lower, upper + lower, middle + lower and upper + middle + lower subgroups) was observed in the TB DM group than the TB group (72% vs 53%). These results also did not reach statistical significance.

Table 1 also shows that more than half the cases in both groups had bilateral lung involvement (53% and 56%). It also shows that pleural effusions and cavities were more common in the TB DM group than the TB group, but the difference was not statistically significant.

## Discussion

Several recent large studies of tuberculosis in adults have documented that in reactivation tuberculosis patients, 70-87% had upper lobe infiltrates, 19-40% also had cavities.(11-12) Lower lung field tuberculosis has varied from 2-9% in incidence in adults.(11)

In diabetic patients, the radiological images of PTB have been described as atypical or unusual, mainly to indicate the presence of lesions in locations other than the common upper lung regions seen in reactivation tuberculosis.(1-7) This has been attributed to a possible immune abnormality in the diabetic patients.(2)

In our study, both the study group and the control group were

compared for the CT scan findings. CT scan was used instead of chest roentgenogram for the diagnosis of PTB as it is more sensitive, particularly for smaller lesions located in the apex of the lungs.(13)

Both groups studied had similar findings regarding the involvement of the upper lobes as the most common presenting location of tuberculosis, followed by the lower lobes not only in diabetics but also in the non diabetic group, with some difference between them which was not significant.

The lack of a significant difference in the lower lung lobes involvement was reported earlier in other studies,(8-10) and in a Turkish study that showed involvement of lower lung fields only in diabetics older than 40 years.(14)

Bilateral and multi-lobar involvement was also common in our patients in both groups and this has been shown in other previous studies as well.(4,9)

Cavities were more commonly present in the diabetic patients but

but not much statistically significant difference was found with the non diabetic patients.

Many studies have shown a higher rate of cavitary disease in diabetics,<sup>4,7,15-17</sup> others have not confirmed this finding<sup>8,9</sup> and showed similar results to ours.

The great involvement of LLL in our patients, both diabetics and non diabetics, together with ULL and bilateral involvement with cavities shows the wide spread and aggressive nature of PTB in our community.

It seems that our study shows that DM did not affect the radiological presentation of PTB to a significant extent and it does not support the original observation of Sosman and Steidl<sup>1</sup> that PTB tends to occur predominantly at the lower lung fields in patients with DM. A study involving a larger number of patients may give results of significant value and find observations similar to the original workers.

## Conclusion

We believe that since Saudi Arabia is considered a high prevalence country where a severe form of PTB seems to exist, any lesion appearing in areas other than the upper lung fields in patients with or without DM should be investigated for the possibility of PTB so that treatment is not delayed and control of this disease could be possible.

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# Using Antibiotics Post Tonsillectomy

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## ABSTRACT

**Objective:** To observe the effect of using antibiotics post tonsillectomy in decreasing post operative morbidity, and what type of antibiotics should we use if they are of benefit?

### Patients and methods:

Children of ages 2.5-10 years who underwent tonsillectomy with or without adenoidectomy at Prince Rashid Hospital in Irbid from July 2006 - July 2007 were enrolled in the study. Patients were randomly divided into 3 groups: group A received augmentin, group B received oral penicillin and group C received nothing. All patients were re-evaluated one week post surgery.

**Results:** Patients (group A) who received augmentin, were found to have less post tonsillectomy bleeding, less pain and resumed normal diet earlier than the other two groups. No significant difference was found between group B and group C.

**Conclusion:** Antibiotics decrease post tonsillectomy morbidity, but depending on the type of antibiotic used, as augmentin decreased post tonsillectomy morbidity in our study, while oral penicillin did not.

Hemorrhage is one of the main complications of tonsillectomy. It has been divided into two broad categories, primarily occurring <24 hours after surgery and secondarily occurring >24 hours post operation (5).

Although streptococcus pyogenes was once the pathogen responsible in 90% of cases of chronic tonsillitis, in the last decade there has been increasing evidence that hemophilus influenza and staphylococcus aureus may now play a prominent role. Both of these are B-lactamase producers and are characterized by multi-resistance to antibiotics (6).

### Oral penicillin

(phenoxymethylpenicillin) is a useful antibiotic against streptococcal, pneumococcal and gonococcal infections, but it is inactivated by bacterial B-lactamase. Amoxicillin and clavulanic acid (augmentin) is a B-lactamase stable antibiotic and has a broad antimicrobial spectrum that includes oropharyngeal anaerobes, gram positive cocci and most gram negative bacilli. It is highly active against the common pathogens in chronic recurrent tonsillitis (3).

## Introduction

Tonsillectomy with or without adenoidectomy is one of the most commonly performed surgical procedures. Approximately 250,000 adenotonsillectomy are performed in the United States each year (1). Although severe complications are rare, post operative morbidity is often significant. Symptoms include odynophagia, dysphagia, otalgia, fever, halitosis and decreased oral intake. (2)

The first week post surgery can be extremely difficult for both child

and parents, therefore in seeking to provide excellent care for our patients we were interested in minimizing the morbidity after such a procedure.(3)

After tonsillectomy the colonization of the open tonsillar fossa by oral bacterial flora may cause severe localized inflammatory reaction with subsequent pain exacerbation (2), therefore, it is reasonable to assume that reduction of bacterial population at the open surgical wound may decrease local inflammation, promote healing process and accelerate recovery (4).

The purpose of this study was to observe the use of antibiotics (oral penicillin and augmentin) in reducing post operative morbidity.

## Patients and Methods

This study was carried out at Prince Rashid Hospital in Irbid from July 2006 to July 2007. Children of ages (2.5-10) years who underwent tonsillectomy with or without

adenoidectomy, were enrolled in the study.

Exclusion criteria included: use of antibiotics 2 weeks before surgery, history of penicillin or augmentin allergy and any drug side effects.

Patients were randomly divided into 3 groups:-

**Group A** - received augmentin (dose according to weight and age) for one week postoperatively.

**Group B** - received oral penicillin (dose according to weight and age) for one week postoperatively.

**Group C** - received none.

All operations were done using bipolar diathermy for dissection and hemostasis. All had similar premedications, anesthetic technique and post operative analgesia.

All groups were matched for age and sex. All patients were discharged home on the following day and parents were advised to bring their child to hospital if he/she had any bleeding. All patients were seen after one week post surgery and were asked about:

- 1- Any bleeding.
- 2- Number of days before resuming normal diet.
- 3- Pain using visual analogue pain score (0-little or no pain,10-severe unbearable pain) which was utilized in an effort to objectively analyze the degree of pain by asking the patient or parents to mark along an unmarked 10 cm line where they felt their pain to be, in the first week after surgery.(3+7)

## Results

157 patients were initially enrolled in the study, ranging from 2.5 to 10 years (mean age 5.8). There was no statistical difference in age or gender between the three groups.

## Results:

Characteristic	Group A (52) who received augmentin	Group B (54) who received penicillin	Group C (51) none
Male	25	26	27
Female	27	28	24
Mean age	5.6	5.9	6.1

**Table 1**

52 patients were randomized to group A (who received Augmentin )

54 patients were randomized to group B (who received oral penicillin)

51 patients were randomized to group C (who received none).

4 of the patients who were excluded from the study, one developed diarrhea in group A, one patient was found to have penicillin allergy in group B and 2 patients in group C received antibiotics preoperatively.

10 patients developed bleeding (secondary type), one of them from group A, from group B and 5 from group C. They were admitted to hospital and treated conservatively.

The parents were told to observe how many days passed before the child resumed his/her normal diet. It took 2.1 days on average for group A, 5.06 days for group B and 5.51 for group C.

Using visual analogue scores pain was objectively analyzed by the three groups as 1 (no pain) and 10 (severe unbearable pain). The mean pain score was 2.9 in group A, 6.6 in group B and 6.8 in group C.

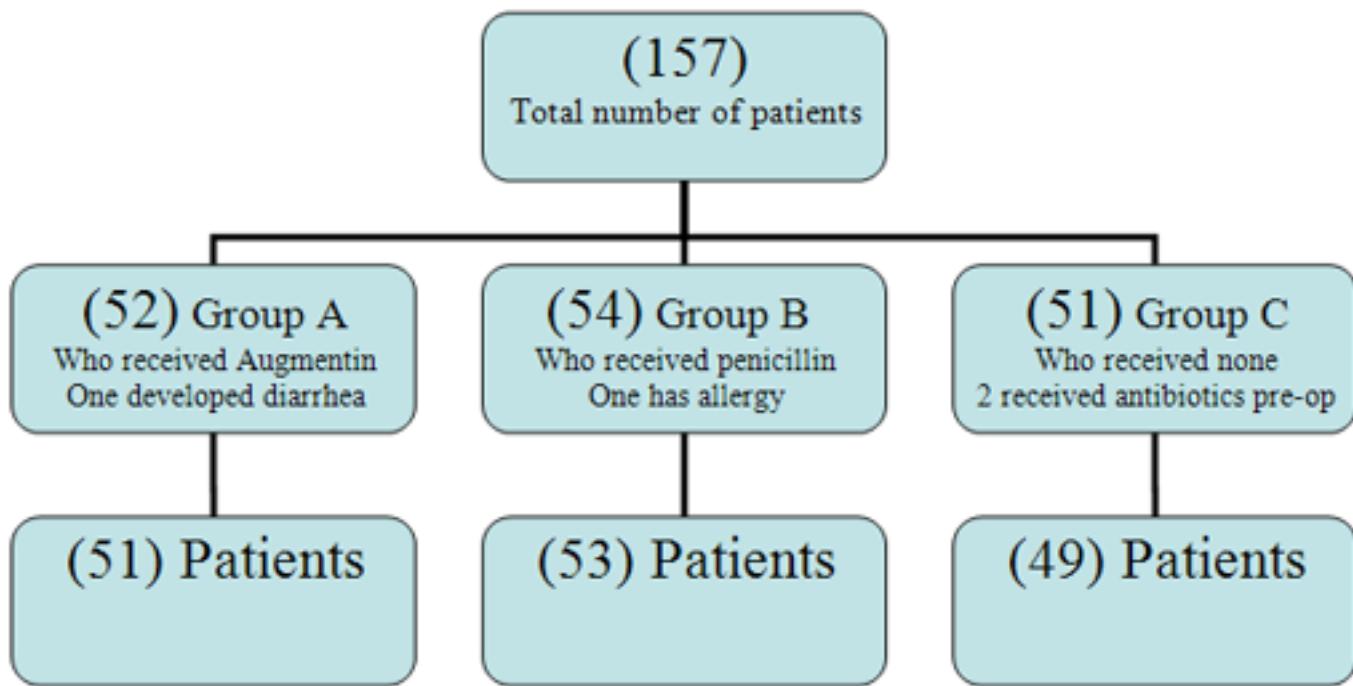
Characteristic	Group A who received Augmentin	Group B who received penicillin	Group C who received none
Bleeding	1	4	5
Days before resuming normal diet	2.1	5.06	5.51
Pain score	2.9	6.6	6.8

**Table 2**

## Discussion

In Jordan, particularly in Royal Medical Services we usually give antibiotics and analgesia for one week post tonsillectomy as the pain is the main complaint of the patients. The main current indications for tonsillectomy and adenoidectomy are recurring infections and blockages of the upper airways, which may possibly lead to serous otitis media, repetition otitis media, rhinosinusitis, snoring, sleep apnea, and altered craniofacial growth- often compromising the child's development and performance at school.(10)

After tonsillectomy with or without adenoidectomy, the colonization of the open tonsillar fossa by the oral flora may cause severe local inflammatory reaction exacerbating post-operative pain (8). The exposure of nerve terminals and the action of chemical inflammatory mediators such as lactic acid, leukotrienes and prostaglandins resulting in muscle spasm are the cause of such pain(9). The use of antibiotics post tonsillectomy has been found to quantitatively lessen the bacterial content of the tonsillar fossa and is felt to eradicate



bacteria in this open wound thus minimizing infection, stimulating healing and hastening recovery (8).

Colreavy et al. in 1999 compared 2 groups of children. Group A, treated with amoxicillin-clavulanate for 7 days after tonsillectomy, and group B, the control group. In this study, patients treated with antibiotics post operatively showed considerable lower morbidity when compared against the control group (3).

Some studies suggest that infection of the tonsillar fossa may contribute or even be the cause of secondary hemorrhage. The estimates in literature about the incidence of post-operative hemorrhage vary from 0-20 %. There is a study published in 1986 proposing that one of the reasons for lower bleeding rates could be the use of antibiotic therapy post surgery (10).

A review of the microbiology of palatine tonsils and adenoids issued in 1988 by De Dio et al. identified hemophilus influenza and staphylococcus aureus as the most common pathogens. Both microorganisms produce B-lactamase and are characterized by multi-resistance to antibiotics (9).

On the other hand, a study done by Guerra, et al. studied the impact of amoxicillin for 7 days post adenotonsillectomy and found no improvement in patient recovery (10). Another study by Al-Kindy SA in Saudi Arabia found that post tonsillectomy antibiotics did not prove to have a role in minimizing postoperative morbidity (11).

### Conclusion

Antibiotics decrease post tonsillectomy morbidity, but depending on the type of antibiotic used, as Augmentin decreased post tonsillectomy morbidity in our study while oral penicillin did not.

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# Knowledge, Attitude and Beliefs towards HIV/AIDS among Youth Students in India

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## Introduction

In 1981, the deadly virus of AIDS (Acquired Immunodeficiency Syndrome) was first detected in the United States. Subsequently in 1983, scientists in United States and France independently identified a virus that causes AIDS and named it HIV (Human immunodeficiency virus). Although, the infection of HIV/AIDS is just 25 years old, the damage it has made to mankind is appalling and overwhelming (Naidu & Aparna, 2008). The menace of HIV/AIDS has becomes more severe until now; there are no preventive vaccines and medicines.

In absence of a full package of preventive medicine, promotional education for HIV/AIDS is the only choice for HIV/AIDS prevention. Accurate and timely information is critical to HIV/AIDS prevention. Ignorance about the disease and how the virus is transmitted have often generated fear and prejudice towards those who are infected (Sudha et al., 2005).

Over the last decade, HIV/AIDS has emerged as a serious challenge with grave implications to the future socio-economic development of India. National AIDS Control Organization (NACO) estimated 51.3 lakhs of people infected with HIV based on the Sentinel Surveillance data, 2004. HIV prevalence rate in India was estimated 0.91 percent in 2004. Similar estimate of 50 lakhs of people infected with HIV is given by UNAIDS in 2004. UNAIDS further projected an increase in HIV infected population by 5.7 million in 2007.

## ABSTRACT

Accurate and timely information is the critical to HIV/AIDS prevention. Ignorance about the disease and how the virus is transmitted have often generated fear and prejudice towards those who are infected. The vulnerability and role of adolescents and youth are important in scientific prevention and control of HIV/AIDS. In this context, the present study was undertaken to survey knowledge, attitude and beliefs about HIV/AIDS among college youth. A pre-tested semi-structured questionnaire was administered on 600 youth students selected randomly from Aligarh Muslim University campus. Mean age of respondents is 21.53 years.

Awareness level about HIV/AIDS was quite high among youth students in AMU. About 60.5 percent students are well aware about HIV/AIDS transmission. However, findings suggest that there is still significant stigma about HIV/AIDS among them, particularly regarding social contact with HIV/AIDS infected persons.

**Key words:** Youth, Knowledge, Attitude, Belief, HIV/AIDS, AMU.

A cursory look to recent evidence suggests that it is high time to concentrate our attention on the alarming HIV/AIDS situation in our contemporary society. The fatal cases are increasing day by day and recent trends reveal that adolescents and youth are among the groups with the largest increase in HIV infection. The impact of HIV will be more devastating on youth and their economically productive age group and as such the quality of human resources of the society will suffer (Kermode et al., 2005; Mahto & Kumar, 2008).

HIV/AIDS is no more just a health issue, but an overall development issue and if left unchecked has a potential to reverse the decades of progress in our country. Therefore, it is the duty of the government as well as of society to save the younger generation from this social and economic disaster. We all know that social changes are commanded and transmitted from the schools, and teacher trainees are the future teachers who have to deal with adolescent pupils and with the future of India. So, it is therefore necessary to assess their Knowledge and Attitude towards HIV/AIDS education. Hence they would be trained and prepared to overcome the hazards of a HIV/AIDS pandemic (Sudha et al., 2005; Mahto and Kumar, 2008).

**Vulnerability and role of Youth in the fight against HIV/AIDS**  
 Sudden changes in physical, psychological, and social attributes of youth often encourage them to experiment and to be adventurous. Youth is a time when hitherto secrets and mysteries (or pleasures) of sex life unveil themselves; a time when temptations are great and such encourage them to be enthusiastic and careless. As a result, they are disposed to indulge in risky and dangerous behaviour. Youth is therefore the time when they are most vulnerable to HIV/AIDS (JHU, 2001; Naidu & Aparna, 2008).

Evidence shows that age 15-24 is the highly vulnerable age for HIV/AIDS. About one third of HIV infection cases occur in this age group and

most of them are women. Among those aged 15-24, the number of young women living with HIV/AIDS has been estimated to be almost twice that of young men (UNAIDS, 2002; HFF, 2006; CDC, 2005; CDC, 2006; CDC, 2008). Globally, young women in age 15-24 are 1.6 times more likely to be HIV positive than young men (UNFPA, 2005; The Times of India, 2008). At the same time, the awareness level is quite low among youth. In India, only 36 percent of men have comprehensive knowledge about HIV/AIDS whereas this percentage is significantly lower for women at 20 percent (IIPS & ORC Macro, 2008).

Because of the above cited reasons, youth are an inevitable part in any HIV/AIDS awareness programme and should be given rigorous HIV/AIDS preventive education. Youth is the right time when preventive strategies can be implemented best and learnt, before they indulge in risk-taking behaviours. More specifically, young people in colleges and universities have a vital role in the prevention and control of HIV infection. Their role includes protecting not only themselves, but also their family members, their peers, their neighborhood and their community (Naidu & Aparna, 2008).

There are several advantages in including youth in HIV/AIDS prevention programs. Youth have stamina to be forceful and communicate better with other young people than others. They could effectively pass best knowledge among their family members, neighborhood and community people. Youth have the enthusiasm, energy and idealism that can be harnessed to alleviate religious and social mythology and barriers against HIV/AIDS. Their social conscience could be explored to make them representatives in the fight against the menace of HIV/AIDS.

Given the above background, a primary study was undertaken in the campus of Aligarh Muslim University (AMU), Aligarh, during March-May, 2008. The present study aimed to undertake a systematic evaluation

of knowledge, attitude and beliefs among youth students on the AMU campus. In addition, this paper tried to assess the variations in knowledge, attitude and beliefs about HIV/AIDS, if any, among youth students. The selection of AMU campus to undertake the study is very important in many ways. Firstly, a majority of students enrolled in the AMU belong to the Muslim community which is well known for complex orthodoxy and rituals. Secondly, the study provides an opportunity to know whether the exposure to higher education prepares them to change their attitude and to think beyond the traditional concepts and beliefs.

## Data and Methodology

The present study is based on primary survey data collected in the campus of Aligarh Muslim University (AMU), Aligarh during March-May, 2008. The data was collected from a total of 600 subjects with the help of semi-structured questionnaire to assess the baseline knowledge, attitude and beliefs towards HIV/AIDS among students in AMU. The written informed consent of the respondents was taken prior to the interview considering the matter of confidentiality and seriousness of HIV/AIDS.

A two-stage stratified random sampling technique was used to select subjects under study. At first stage, the total sample size was distributed proportionate to the total number of students in different faculties. The number thus obtained were distributed in three groups of students namely, undergraduate, postgraduate and research scholar proportionate to their size. From each determined group of students, the desired number of subjects was chosen randomly. The final sample size consisted of 28 research scholars, 156 postgraduate students and 416 graduate students from different faculties.

Bivariate and multivariate statistical techniques were used to examine knowledge level about HIV/AIDS among youth students. Multivariate logistic regression model was fitted

Demographic Parameter	Number (Percent)
<b>Age (in years)</b>	
< 20	210 (35.0)
20-25	352 (58.7)
>25	38 (6.3)
Mean Age of respondents (in years)	21.53
<b>Sex</b>	
Male	360 (60.0)
Female	240 (40.0)
<b>Marital Status</b>	
Unmarried	557 (92.8)
Married	43 (7.2)
<b>Category</b>	
Research Scholar	28 (4.7)
Post Graduate	156 (26.0)
Graduate	416 (69.3)
Religion	
Muslim	514 (85.7)
Hindu	81 (13.5)
Other	5 (0.8)
Type of Residence	
With Family	103 (17.2)
Rented Room	48 (8.0)
Hostel	449 (74.8)

Table 1: Demographic profile of the study population in AMU, Aligarh (n=600)

to examine the effect of different socio-demographic factors of having comprehensive knowledge about HIV/AIDS among youth students. Different factors used in the regression model are sex, marital status, type of residence, education level and education stream. The data was collated and analyzed quantitatively using the SPSS computer software programme.

#### Demographic Profile of Study Population

Table 1 presents different demographic characteristics of the study population. Mean age of respondents was 21.53 years. The majority of the students (n=352) or 58.7% of the sample were in age 20-25 years. Respondents aged below 20 years constituted the second largest group of respondents (n=210) and thereby comprising 35% of the sample. The majority of the students were unmarried (n=557) comprising 92.8% of the sample. 85.7 percent of students belong to the Muslim religion and remaining 14.3% reported belonging to Hindu

and other religious groups. 69.3% or 416 students are studying at graduate level and 26.0 are enrolled in postgraduate level courses. The gender distribution of the sample showed that the majority of respondents were male (n=360) or 60% while females (n=240) constituted 40% of the sample. 81.5 % students are living in hostels near to the university campus.

#### Knowledge, Attitude and Beliefs about HIV/AIDS

Table 2 presents the assessment of knowledge, attitude and beliefs about HIV/AIDS among youth students. Overall, knowledge level about HIV/AIDS is quite substantial among youth students in AMU. Knowledge and attitude about HIV/AIDS varies by the level of education as well. The students enrolled in under-graduate courses reported marginally lower levels of knowledge about HIV/AIDS compared to those enrolled in post-graduate and research oriented courses. However, it has been seen that there is lack of complete knowledge about HIV/AIDS among

students in AMU. Knowledge level regarding the transmission of HIV/AIDS is quite poor among students in AMU. Only 66.5 under-graduate students were sure that HIV cannot be transmitted through mosquito bite whereas this was 72 and 80 percent among post-graduate and research students respectively.

Students were quite sure that HIV/AIDS is a sexually transmitted disease, but they were not confident to answer the question that a person having an STD is at greater risk of HIV infection. Only 66.6 percent of under-graduate students were sure that a person with STDs is at greater risk of HIV infection whereas respectively 61.5 percent and 75.0 percent post-graduate and research students were confident in this. A similar pattern arose for the knowledge regarding the transmission of HIV/AIDS through mother to child by the practice of breastfeeding. Most of the students are quite sure that condom use is the best way of HIV/AIDS prevention.

Despite having good knowledge about HIV/AIDS, most students are still hesitant to talk about HIV/AIDS with parents, friends and doctors. A very negligible proportion of youth students have undergone HIV testing. Most students have heard about HIV/AIDS through TV, radio, magazines and newspapers, though lack a thorough understanding of the issues involved. Results indicate that youth students are still in a dilemma about making social contacts with HIV/AIDS infected persons. Only 50 percent of students have reported that there is no harm in meeting a HIV/AIDS infected person. About one quarter of young students are still not ready to allow a HIV/AIDS infected person to continue work. Only about 42 percent students said that they would feel comfortable to talk with a HIV/AIDS infected person.

#### Level of Knowledge about HIV/AIDS: Statistical Assessment

To assess the level of comprehensive knowledge level regarding HIV/AIDS among youth students, a statistical approach has been employed.

<b>Questions related to knowledge/attitude/beliefs about HIV/AIDS</b>	<b>Undergraduate (%)</b>	<b>Post-graduate (%)</b>	<b>Research Scholar (%)</b>
1. Students who know full form of HIV and AIDS	93.3	92.9	94.3
2. AIDS is the terminal stage of infection by HIV	82.2	89.4	95.5
3. An individual infected with HIV infection dies within 2-10 years	80.0	82.7	78.6
4. HIV cannot be transmitted through mosquito bite	66.5	72.0	80.0
5. HIV cannot transmit through sharing toilets, or bed with someone who has AIDS	84.9	86.5	85.7
6. HIV can be transmitted by barber and at hair saloons	63.0	70.5	64.3
7. HIV can be transmitted from infected mother to newborn child	91.3	90.1	98.9
8. HIV can be transmitted through breastfeeding by infected mother	66.6	61.5	75.0
9. HIV cannot be transmitted through shaking hands, kissing, sneezing & coughs, sharing swimming pools	81.5	81.4	89.3
10. HIV/AIDS is a sexually transmitted disease (STD)	92.8	91.7	100.0
11. Persons having STDs are at high risk of HIV infection	66.6	74.4	82.3
12. Vaccine is available to prevent HIV/AIDS infection	10.0	5.4	4.4
13. A person who often contacts prostitutes and has unprotected sex can get HIV/AIDS easily	89.2	94.5	97.6
14. There is no harm to meet with a person having HIV/AIDS	54.8	55.0	58.6
15. Should a HIV/AIDS infected person be allowed to continue work	70.5	75.9	86.4
16. In general, would you be comfortable to work with a HIV/AIDS infected person	39.1	42.2	49.8
17. Percent who feel comfortable to talk to parent about HIV/AIDS	2.1	3.4	2.3
18. Percent who feel comfortable to talk to doctors about HIV/AIDS	5.3	6.7	12.2
19. Percent who feel comfortable to talk with friends about HIV/AIDS	4.5	10.0	21.2
20. Percent of students who heard about HIV/AIDS through Newspaper/TV/Radio	87.7	89.2	82.1
21. Percent who ever tested for HIV/AIDS	0.3	0.2	0.5
22. Condom use is the best way of HIV/AIDS prevention	89.7	88.9	95.2
23. Abstinence is 100% best prevention method	90.4	89.1	95.6

Table 2: Knowledge, attitude and beliefs about transmission and prevention of HIV/AIDS among youth students, 2008

<b>Background</b>	<b>Not aware</b>	<b>Somewhat aware</b>	<b>Well aware</b>
<b>Education Stream</b>			
Medical Background	0.00	5.95	94.05
Science Background	0.96	35.78	63.26
Others	5.42	52.22	42.36
<b>Level of Education</b>			
Undergraduate	2.64	36.78	58.97
Postgraduate	1.92	39.10	67.86
Research Scholar	0.00	32.14	
<b>Sex</b>			
Male	2.78	37.78	59.44
Female	1.67	36.25	62.08
<b>Marital Status</b>			
Married	2.33	23.26	74.42
Unmarried	2.33	38.24	59.43
<b>Type of Residence</b>			
With family	1.20	27.35	71.45
Rented room	7.57	32.14	60.29
Hostel	12.45	37.42	50.12
<b>Total</b>	<b>2.3</b>	<b>37.2</b>	<b>60.5</b>

Table 3: Level of comprehensive knowledge about HIV/AIDS among education professionals in AMU by different background characteristics, 2008

<b>Independent variables</b>	<b>Odd ratio (Exp. B)</b>
<b>Education Stream</b> (Medical Background®)	
Science Background	0.92**
Others	0.75**
<b>Level of Education</b> (Undergraduate®)	
Postgraduate	1.13
Research Scholar	1.34**
<b>Sex</b> (Male®)	
Female	1.02
<b>Religion</b> (Muslim®)	
Hindu & others	1.20*
<b>Marital Status</b> (Married®)	
Unmarried	0.87
<b>Place of Residence</b> (With family®)	
Rented room	0.68
Hostel	0.71*
Log likelihood	-517.03
Prob. >Chi2	0.001

Note: ®: reference category. \*\*\*p<0.01, \*\*p<0.05, \*p<0.10

Table 4: Logistic regression analysis: Odd ratios showing variation in comprehensive knowledge about HIV/AIDS among youth students in AMU, 2008

An index measuring the level of knowledge about HIV/AIDS is constructed in a based group scoring method. A total of 10 important questions pertaining to knowledge and attitude about HIV/AIDS were identified to construct this index (Table 2). A student who answered all answers correctly was awarded 100 marks. The index was defined on

3 cut-off point scales and a suitable rating has been given. Students securing 0-30 marks are defined as "Not Aware", students with 40-70 marks as "Somewhat Aware about HIV/AIDS" and those students securing 80-100 marks are classified as "Well Aware about HIV/AIDS". Table 3 presents the level of comprehensive knowledge about

HIV/AIDS among AMU students. From results, it is clear that AMU students have a higher comprehensive knowledge about HIV/AIDS. Only 2.3 percent of students have not acquired comprehensive knowledge about HIV/AIDS. On the other hand, a greater proportion, of 60 percent, acquired complete comprehensive knowledge about HIV/AIDS.

Table 3 further depicts variation in levels of comprehensive knowledge about HIV/AIDS among AMU students, by their background characteristics. Students enrolled in the courses of the medical stream acquired more accurate and complete information regarding HIV/AIDS compared with the students from other streams including science. Differentials by the level of education had also shown plausible results. Research scholars have more comprehensive knowledge about HIV/AIDS. Sex had not any countable variation in comprehensive knowledge about HIV/AIDS among youth students. Marital status plays an important role in shaping knowledge and awareness about HIV/AIDS. Married students are more aware about HIV/AIDS than unmarried students.

Table 4 presents results from logistic regression analysis showing the variation in having complete comprehensive knowledge about HIV/AIDS by background characteristics. Here the dependent variable is of binary responses coded as 1 if a student has complete comprehensive knowledge about HIV/AIDS i.e. answered all 10 questions otherwise coded as zero. Students of science stream and other streams are respectively 8 percent and 25 percent less likely to acquire comprehensive knowledge on HIV/AIDS compared with medical stream students. Research scholars have a higher likelihood of having comprehensive knowledge about HIV/AIDS than undergraduate and graduate students. No significant differentials were seen in having comprehensive knowledge about HIV/AIDS by sex. Unmarried students had lower chances of reporting comprehensive knowledge about HIV/AIDS. Place of residence also showed an important role in having comprehensive knowledge about HIV/AIDS. Students living with their families have higher chances of having complete comprehensive knowledge about HIV/AIDS compared to those students not living with their families.

## Conclusion

The present study has made an effort to study knowledge, attitude and beliefs about HIV/AIDS among youth students in a comprehensive manner and critical evidences are documented. Youth student of AMU campus

have good amount of knowledge on HIV/AIDS. However, they lack in term of a comprehensive knowledge on HIV/AIDS. Many of them are not aware about the risk factors of HIV/AIDS infection. More sustained efforts are needed to make the students fully aware of the modes to transmission and prevention of HIV/AIDS. A significant number of students were not aware that HIV can not be transmitted through mosquito bite; and a person visiting barbers can be infected when instruments are not sterilized. At same time, they have fear and stigma to have social contacts with HIV/AIDS infected persons.

Though the purpose of the paper was to study knowledge, attitude and beliefs about HIV/AIDS among youth student, however remarkable variation are seen in having comprehensive knowledge on HIV/AIDS. Student other than medical background and student enrolled in graduate courses have low level of comprehensive knowledge on HIV/AIDS. Students belonging to Hindu community have shown greater likelihood of having comprehensive knowledge on HIV/AIDS. Students living in hostel/rented rooms are having lesser chances of having comprehensive knowledge on HIV/AIDS and thus this group of students in more vulnerable group as they have no peer educator from family or community. Here, the role of university becomes important to spread HIV/AIDS education among youth students.

The study is based on small sample size; however results have greater scope for policy implications. Youth need accurate, timely and age-appropriate information about HIV infection and AIDS. There is need to sensitize them that how to talk with their parents or other trusted adults about HIV/AIDS, how to identify and eliminate risk, how to talk with a potential partner about risk, where to get tested for HIV, and how to use a condom correctly. Educational institutional could be important partners for reaching youth before high-risk behaviors are established (Ramachandar et al., 1998; CDC, 2008).

To spread education about HIV/AIDS prevention, the university administration could introduce lessons/syllabus that pertains to HIV/AIDS in the curriculum at entry level. University could encourage its teachers and

teacher's association bodies to take active role in spreading knowledge and awareness on HIV/AIDS and to help students to change their attitude and behaviour towards HIV/AIDS infection. There is need for peer educators in university hostel who could provide information on HIV/AIDS infection (Ramachandar et al., 1998). India has mounted a broad intervention program, including the government, and international, nongovernmental, and community-based organizations. The main barriers to effective control are insufficient resources, illiteracy, and stigma (Solomon et al., 2004). Attitudinal change programme is urgently needed to change the existing knowledge of the youth about HIV/AIDS affected persons. This may change the behaviour of the youth. All these will positive impact on HIV/AIDS prevention programme (Kumari, 2004; Em & Lach, 2004).

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# Gratification disorder in infants and children: A normal behaviour with different abnormal presentation

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## ABSTRACT

**Aims:** Little is known about gratification disorders and infantile masturbation. Very little information is available electronically and on paper. It is unmentionable and not discussed openly in Arabic and Moslem cultures. The aim is to increase the awareness among Pediatricians and primary health care providers of the importance of considering (gratification disorder) i.e. infantile masturbation, when dealing with children presenting with recurrent paroxysmal movement disorders.

**Methods:** Retrospective case note review of all the children referred to Neurodevelopment Clinic (NDC), Paediatric out-patient department at Al-Khadra hospital, Tripoli, Libya between year 2004 and year 2008 with the diagnosis of suspected epilepsy and abnormal behaviour.

**Results:** 9 children were diagnosed, 3 males and 6 females, as having infantile masturbation (gratification disorder). The median age at the first

presentation for males was 13 months and the median age at the first presentation for females was 15 months. The median age at diagnosis for males was 15 months and for females was 19.5 months. Four children (one male and three females) came from homes where parents were concerned about their children's behaviour. (Doctor shopping) Five children (two males and three females) were referred by clinicians from other hospitals in Tripoli and other regions with uncertain diagnosis of epilepsy (3) and abnormal behaviour (2), all presenting for the first time to the clinic. In four children diagnosis was confirmed by mobile phone video recording.

**Conclusion:** Infantile masturbation is an important differential diagnosis of epilepsy and abnormal paroxysmal behaviour. It is often misdiagnosed because of its peculiar presentation in children, and it has a wide spectrum of different behavioural patterns without manual

genital stimulation, a low index of suspicion, and because parents are ashamed and afraid of stigma. Referral to professionals with experience in these sorts of behaviours often save time and money and prevents unnecessary investigations and treatment. Direct observation of the episode is essential, and videotaping is a useful tool in confirming the diagnosis.

**Keywords:** Infantile masturbation, Gratification disorder, Normal sexual behaviour, Arab and Moslem cultures, Tripoli, Libya.

## Introduction

Masturbation is unmentionable and not discussed openly in Arabic and Moslem cultures. Gratification is something that gratifies; and it is a cause for satisfaction.

Gratification is the positive emotional response (happiness) to a fulfillment of desire. According to the American Heritage Dictionary, the act of gratifying is a way of pleasing, the mind, the taste, or the appetite.(1) If it is a normal part of human sexual behaviour why is it called a disorder at all and why is it shameful to talk about it? I think this is another example of the medicalisation of normal human behaviour.

Masturbation is the excitation of one's genital organ, usually to orgasm by manual contact or means other than sexual intercourse -which does not take place in infants and children.

Little is known about gratification disorders and infantile masturbation and very little information is available electronically and on paper.

Gratification disorder is often misdiagnosed because of its peculiar presentation in children; has a wide spectrum of different behavioural patterns without manual genital stimulation, a low index of suspicion, and because parents are ashamed and afraid of stigma.

Infantile masturbation mimics many pediatric movement problems, and, if unrecognized, may lead to considerable parental anxiety, unnecessary investigations and wrong and potentially harmful therapy.(2) In this small study my aim is to put some more light on the spectrum of symptoms that these children may present with.

## Methods

A retrospective case note review of all the children referred to Neurodevelopment Clinic (NDC), Paediatric out-patient department at Al-Khadra hospital, Tripoli between year 2004 and year 2008 with the diagnosis of suspected epilepsy and abnormal behaviour. The NDC is a regular weekly clinic, assessing 25 - 30 patients per session (0-16 years), and a consultant led clinic (AZ) in addition to two registrars, one SHO and a nurse. The clinic serves Tripoli, its suburbs, other hospitals, and re-

ceives referrals from other regions in Libya. The clinic does not care for all children with epilepsy in the region. The same consultant (AZ) saw all the patients and makes the diagnosis. Diagnosis was made primarily on detailed history and thorough general and neuro-developmental examination. Diagnosis was confirmed on four occasions by mobile video recording of the events. No further investigations were required in all children diagnosed with the disorder. Ethical committee approval for the study was not needed.

## Results

9 children were diagnosed, 3 males and 6 females, as having infantile masturbation (gratification disorder). The median age at the first presentation for males was 13 months and the median age at the first presentation for females was 15 months. The median age at diagnosis for males was 15 months and for females was 19.5 months. Four children (one male and three females) came from homes where parents were concerned about their children's behaviour. (Doctor shopping) Five children (two males and three females) were referred by clinicians from other hospitals in Tripoli and other regions, with uncertain diagnosis of epilepsy (3) and abnormal behaviour (2). All presented for the first time to the clinic. Episode frequency ranged from 8 times per day to twice per week. The average length of the episode was 4 minutes.

Seven children had been investigated before attending NDC. Six had MRI brain scans, one had CT of brain. All the seven had EEGs, six normal EEGs, and one with non-specific changes. Four children had haematological and biochemical tests. These included CBC, blood sugar, calcium, and TFT. One child had EMG and NCV. One child had Gastrographin studies and one child had MCUG. Two children were never investigated and diagnosis was made by mobile phone video recording.

Five children were given the diagnosis of epilepsy before attending the NDC. Five children had received AED (sodium valproate) without improvement.

Four children had been seen in another country for a second opinion and advised to continue AED.

Four children were given variable labels

- One child possible epilepsy
- One child hypoglycaemic episode.
- Two children abnormal behaviour.

All children had normal neurological examination.

All children had normal neurodevelopmental examination.

## Discussion

The concept of childhood masturbation was recognized as early as 1909 by Still. Typically it begins at 2 months of age, although in-utero masturbatory behavior has been reported also.(3) Incidence of this behavior typically peaks at 4 years of age and again in adolescence.(2) Although a normal behavior in childhood, it often is unrecognized by families and caregivers, especially because genital manipulation frequently is absent.(2)

In addition, in young children, unusual postures and movements can occur during masturbation and may lead the primary care provider to infer that seizures, abdominal pain, colic, or other neurological or medical problems are present.(2, 4)

Infantile masturbation is an important differential diagnosis of epilepsy and abnormal paroxysmal behaviour.(5) Referral to professionals with experience in these sorts of behaviours often saves time, money and prevents unnecessary investigations and treatment. Direct observation of the episode is essential, and videotaping is a useful tool in confirming the diagnosis. Little is available in the literature regarding long-term follow up of masturbatory behaviour.(2)

In our series five children came for follow up. Three children got better and the episodes reduced in frequency and parents were happy about their progress; two children continue to exhibit this behaviour and the other four children failed to attend any follow up appointments probably because of the wrong belief that this is a shameful act and it is better not to talk about it any further.

<i>Situations</i>	<i>Number of children</i>
<b>Anywhere</b>	<b>4</b>
<b>Chair</b>	<b>2</b>
<b>Using a toy</b>	<b>1</b>
<b>Tickling the child</b>	<b>1</b>
<b>Lying on the floor (prone)</b>	<b>1</b>
<b>Manual stimulation of genitalia</b>	<b>None</b>

Table 1: Places where episodes took place

<b>Scissoring of legs and stiffness</b>	<b>8 children</b>
<b>Grunting</b>	<b>7 children</b>
<b>Rocking</b>	<b>8 children</b>
<b>Sweating</b>	<b>6 children</b>
<b>Redness of face</b>	<b>4 children</b>
<b>Smacking lips</b>	<b>2 children</b>
<b>Slept afterward</b>	<b>2 children</b>
<b>Alteration of consciousness</b>	<b>None</b>
<b>Easily distracted by the parents</b>	<b>All</b>

Table 2: Type of behaviours manifested during the episodes

Epilepsy of childhood can be confused with other paroxysmal behaviour of different causes. This probably contributes to the misdiagnosis as well as over-diagnosis of epilepsy.

Our results confirmed that gratification disorder is commonly misdiagnosed as epilepsy or other medical problems as has been well discussed by other authors in previous studies. Masturbation is unmentionable and not discussed openly in our culture. It is still worse when it occurs in infants. It is often misdiagnosed because of its peculiar presentation in children, has a wide spectrum of different behavioural patterns without manual genital stimulation, a low index of suspicion, and because parents are ashamed and afraid of stigma.

Infantile masturbation mimics many pediatric movement problems, and, if unrecognized, may lead to considerable parental anxiety, unnecessary investigations and wrong and potentially harmful therapy.

A Medline search showed almost no information on infantile masturbation in Libya and other Arabic and Moslem countries. It is said to occur in 90-94% of males and 50-60% of females at some time in their lives.(4) It has been mistaken for epilepsy,(6) abdominal migraine, colic, periodic and manneristic behaviour and dystonia.(7)

Children with masturbatory behavior can appear to have altered consciousness with a glassy-eyed, fixed gaze. However, a key feature to masturbatory behavior is that it is volitional and can cease with distraction.(7) However, even for experienced movement disorders specialists, the distinction between paroxysmal movement disorders and masturbatory behavior can be difficult.(8) Sexual abuse and perineal irritation should be ruled out.(9, 10) Masturbatory behavior has been reported in sexually abused children.(8) Perineal discomfort such as that caused by vulvo-vaginitis, urinary tract infections, or dermatitis

may exacerbate the behavior but may also be the result of the behavior.(4,7) The exact relationship between perineal irritation and masturbatory behavior is unclear. Perineal irritation may intensify the behavior and increase the frequency with which it is performed. On the other hand, daily application of friction to the perineum may precipitate irritation of the region. An external genital examination should be performed, and perineal irritation should be treated.(2)

If the physical and neurological examinations are normal, no additional diagnostic testing needs to be performed. Reassurance for the family is the key to management; with redirection should the behavior prove embarrassing for the family or occur in public.(9, 10)

The parents should be educated that this is a normal behavior resulting from random exploration of the body by the infant. Masturbation likely is initiated when the infant discovers that certain maneuvers can bring about a pleasant and comforting sensation. It may be viewed in the same category as thumb-sucking, body-rocking, or other behaviors that infants use to enhance comfort.

This behavior may subside as the infant becomes engaged in other objects or activities in the environment. Again, the parents should be reassured that this is a normal behavior and it may be seen in infancy.

Little is available in the literature regarding long-term follow-up of children with masturbatory behavior.

Sexual behavior that appeared most frequently included self-stimulating behaviors and peaked at 5 years of age for both boys and girls, dropping off over the next 7 years. These children have normal development and the behaviors do subside.

Videotape the event in question. Not only will this facilitate diagnosis, but viewing it with the parents can help them realize that it is not a life-threatening event, and will help

them change their view of the child's behavior as a disease. This is a normal behavior, and parents should view it as a harmless, non-painful, non-shameful habit.

Scolding, slapping or threatening the child is not appropriate. Efforts to stop the behavior forcefully will only reinforce it and possibly instill a sense of shame or wrong-doing as the child gets older.

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## Pictorial feature: Doctors in War Zones

Darren Saffin

Australian Army



**Squadron Leader Mary Langcake with a young patient in Afghanistan**

Many Reservist members of the Australian Defence Force (ADF) train for years to be ready for overseas deployment. Mary Langcake waited only a matter of months.

The trauma surgeon spent six challenging weeks in Afghanistan operating on soldiers and civilians - a little less than 12 months after joining the RAAF Specialist Reserve.

"It was trauma that you don't see in civilian practice," said Dr Langcake, Director of Trauma at Sydney's St George Hospital. "I saw blast injuries that I'd read about and talked about but it was the first time I'd experienced them in reality."

"Nearly 30 per cent of the patients we treated were local children, which was a chilling reminder of the danger these people live with every day. It was also culturally rewarding - knowing that my skills and experience were of benefit to the local people. "It was a tough gig, though, and left me with a fair bit to process and reflect on."

But overall, I reckon it made me a better surgeon."

# Special feature: The Survey of the Health Impacts of a Macrobiotic Lifestyle in some Middle Eastern Countries

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## ABSTRACT

This study addresses the health impacts of a macrobiotic lifestyle on people in some of the Middle Eastern countries, particularly in Lebanon. Results of this analysis will be used to heighten the awareness of the public, government, health agencies and health care professionals on the positive attributions of macrobiotics. A cross-sectional study of developmental research was used for this research which consists of a quantitative approach that used a questionnaire filled by a random sample of respondents. The people surveyed or the respondents were individuals exposed to a macrobiotic

lifestyle. The hypotheses were tested using frequency analysis, chart analysis and cross-tabulation using the Statistical Package for the Social Sciences (SPSS). The researcher concluded that most of the people in the surveyed Middle Eastern countries adopt macrobiotics or are interested in this lifestyle for health reasons primarily.

**Keywords:** Macrobiotics; Health; Statistics; Middle East

## Introduction

The basic macrobiotic diet is primarily vegetarian, based on the Orient philosophy of yin and yang: whole grains, vegetables, legumes, soy products, sea weeds, miso soup, some fish and some fruit, and is low in fat, sugars and processed foods. The "standard" macrobiotic diet varies according to different environmental conditions, especially climate, season, temperature and atmosphere. It also varies according to personal differences in sex, age, activity and cultural background as well as individual condition of health and needs (see appendix I for more details). Many researchers have reported a direct relationship between a macrobiotic lifestyle and the prevention of and curing several illnesses, such as: Hypertension, Hypercholesterolemia and Hypertriglyceremia, Cancer, AIDS and Heart diseases [1-6].

The principles of macrobiotics as it is known today is due to the tireless work and vision of George Ohsawa (1893-1966) in Japan and was introduced to and popularized in the United States by Michio Kushi for the last four decades [1]. During this rich history of macrobiotic development, a galaxy of books, magazines and publications were introduced [1, 7]. Since then, macrobiotics was being introduced to the Middle East (to Lebanon in particular), but became more exposed on a small scale around 7 years ago through a few health centers and TV programs. However, the exact implications of this lifestyle on people in this region are still unknown. This study addresses the health impacts of a macrobiotic lifestyle on Middle Eastern people, particularly in Lebanon. However, researchers will address the social and economical impacts in future publications.

From a medical perspective, there is a misunderstanding or a lack of enough knowledge of macrobiotics (or diet related issues) among conventional practitioners. Most medical doctors in this region believe that diet has no significant effects on curing most modern illnesses. In spite of that belief, they do think that certain foods might be one of many factors that cause, cure or prevent certain widespread degenerative illnesses. In building awareness among doctors and health care specialists, they will be able to see the major contribution of a macrobiotic lifestyle in not only curing most of today's sicknesses, but at least in relieving symptoms and the decreased need for medication. Medical specialists would then be able to combine the best of both worlds by diagnosing, preventing and treating disorders using conventional methods (such as medication or surgery) and alternative therapies (such as macrobiotics).

This study regarding the macrobiotic diet and lifestyle will provide government agencies in this region with data to support the encouragement of this way of life, if it is followed in a balanced way and avoiding any pitfalls. Government health agencies would encourage for instance the import and even produce of organic food (that is still not always accessible nor always feasible) by decreasing import taxes and by amending some of the import/export regulations regarding this particular food stuff. In addition, health agencies may encourage farmers to grow organic food by providing them with funds and preliminary resources at low cost. Farmers could also be provided with a wide market to encourage the growth of organic food, especially since this region embraces a great agricultural area.

For the past two decades, the percentage of degenerative diseases has been escalating at a rapid rate due to several reasons mainly adopting the Western fast food and modern lifestyle. With time, they have abandoned most of their healthy traditional cuisine and active lifestyle,

heading towards a more convenient, easy going and fast paced lifestyle. This research will highlight for the public the need for a solution- one that is feasible, simple and can be applied in parallel with a modern and technological way of living. The answer is a macrobiotic lifestyle tailored for people in the Middle East that would improve their health status significantly, encourage family meals and good quality social interaction, and would actually decrease their total expenses on food, medication and health services.

## Materials and Methods

The research follows a quantitative approach which consists of a questionnaire and the analysis and interpretation of the generated data with the help of Statistical Package for the Social Sciences (SPSS). The topic of interest was studied from a present point of view to yield the desired information. Therefore, a cross-sectional study of developmental research was generally used.

### a. Selected variables for the study

The researchers covered all the variables needed in order to form a clear understanding about the subject and found that it is essential to ask first about personal information regarding their nationality, gender, age, occupation and so on. Then, the health impact of macrobiotics on preventing and curing their diseases was investigated. And as clearly stated in the analysis below, two or more of these different variables together with the help SPSS were linked.

The set of independent variables investigated in the research are:

1. PROFESSION
2. AGE
3. GENDER
4. EDUCATION
5. NATIONALITY
6. MARITAL STATUS
7. NUMBER OF MEMBERS LIVING IN THE SAME HOUSEHOLD
8. DURATION ON MACROBIOTICS
9. NUMBER OF MEALS CONSUMED PER DAY

10. MAIN REASON FOR PRACTICING MACROBIOTICS
11. SPECIFIC HEALTH PROBLEMS
12. MACROBIOTICS HELPS PREVENT CERTAIN DISEASES
13. MACROBIOTICS HELPS CURE CERTAIN DISEASES
14. EFFECT OF MACROBIOTICS IN THE PROGRESSION OR RELIEF OF DISEASES

### b. Data Collection and Analysis

The most common source of data for such research is communicating with respondents. Thus, this study used a set of questionnaires filled by a random sample of respondents. Since the percentage population who follow macrobiotics or have sufficient knowledge of it is very small (less than 1%), only individuals that have been exposed to this lifestyle were studied. A subject data-gathering technique would provide a deeper and wider range of information. For this reason, a one-on-one survey was used. In addition, the sample size was limited to 156 individuals. The samples were collected from two major places in Beirut, Lebanon: Salam Center and Beit Al Afiyah. These two places are visited frequently by people from Lebanon, Syria, Jordan, Algeria, Morocco and some Gulf countries (Saudi Arabia, Kuwait, United Arab Emirates and Qatar).

### c. Research Question and Hypotheses

The main research question in this study is "Do macrobiotic people in the Middle East believe that this lifestyle can cure, prevent and relieve symptoms of diseases?"

Two main hypotheses, which seemed reasonable from the researchers' experience and macrobiotic lifestyle, were formulated:

**H1:** More than 50% practice macrobiotics due to a health problem or to prevent one.

**H2:** More than 90% believe that a macrobiotic lifestyle has positive effects on a person's health status.

To test the hypotheses, frequency and percentage analysis are useful to diagnose the major characteristics

of the selected sample. Also, cross tabulation is crucial in determining the relation and link between the variables. The use of the SPSS constitutes the basis for conducting such analysis.

#### d. Scope and Limitations

There were several limitations to this study ranging from time to places from which samples were collected. The first major limitation of this study was the fact that the researcher had limited time to gather information. This is because the high season for people from all over the Middle East to visit Lebanon is in August. So the time frame was limited to only one month.

Another limitation was the sample size. The fact that choosing a random sample of respondents to gather data from, and then checking/organizing the gathered data would cost even more time, the researcher was bounded with a set of 156 questionnaires.

## Results and Findings

The sample is composed of 156 respondents. According to the "normal distribution theory", the sample size will lead results that have a 7.8% margin error and 95% confidence interval [8]. All the results are presented in charts and tables obtained from the outputs files of the SPSS software

#### Data Analysis and Testing

Analysis of data that is related to personal information variables is shown in Appendix II. In this part, the researchers focus their analysis on the more specific variables that are related to the above two hypotheses (H1 and H2) and hence tested the research question (Q: Do macrobiotic people in the Middle East believe that this lifestyle can cure, prevent and relieve symptoms of diseases?).

There were some multiple responses to several questions targeted. Thus, some information was drawn based on those responses. Table 1 includes

three category questions serving as reasons for practicing macrobiotics:

- 29.8% of the sample practices macrobiotics because they have health problems.
- 13.8% of the sample practices macrobiotics because a family member or friend suffers from a certain illness.
- 31.7% of the sample wants to prevent possible health disorders.

Therefore, and according to the data shown in Table 1 hypothesis H1 is accepted. In addition, chart 1 clearly illustrates that 99.3% of the sample believes that macrobiotics can cure, prevent and relieve symptoms of certain diseases. Therefore, and according to the data shown in this chart hypothesis H2 is accepted

Based on these results, the answer to the research question according to this study is: Yes, macrobiotic people in the Middle East believe that this lifestyle can cure, prevent and relieve symptoms of disorders.

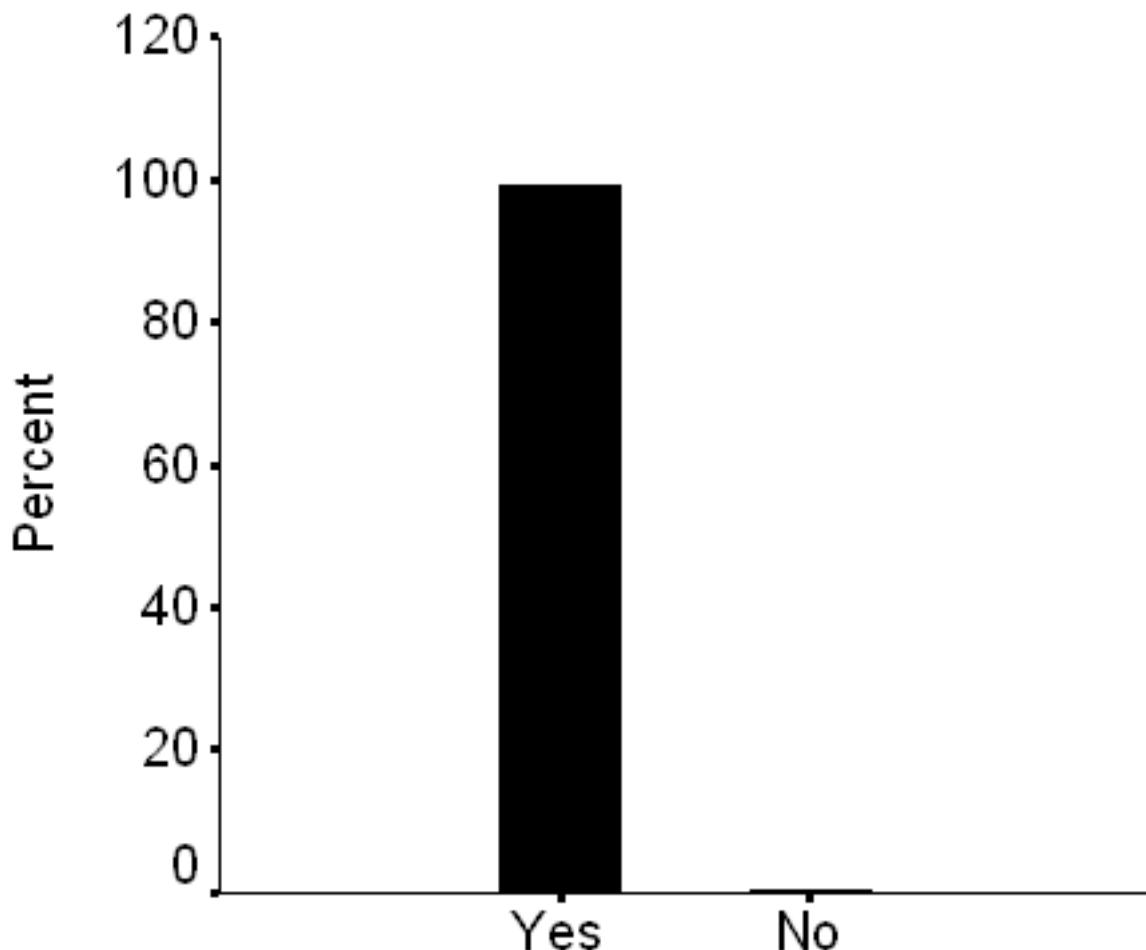


Chart 1: Percentage of sample that believe macrobiotics can prevent and cure diseases

Category label	Count	% Responses	% Cases
I have health problems	65	29.8	42.8
A family member/friend has an illness	30	13.8	19.7
To prevent possible health disorders	69	31.7	45.4
Don't practice macro but interested	54	24.8	35.5
<b>Total responses</b>	<b>218</b>	<b>100.0</b>	<b>143.4</b>

**Table 1: Main reasons for practicing Macrobiotics**

Category label	Count	% Responses	% Cases
Digestive problems	12	14.1	16.4
Cancer	15	17.6	20.5
Diabetic or blood problems	9	10.6	12.3
Nervous system disorders	6	7.1	8.2
Blood pressure	5	5.9	6.8
Respiratory system problems	4	4.7	5.5
Bone pain	18	21.2	24.7
Allergies	7	8.2	9.6
Hormone/Endocrine problems	4	4.7	5.5
Health problems in general	5	5.9	6.8
<b>Total responses</b>	<b>85</b>	<b>100.0</b>	<b>116.4</b>

**Table 2: Main health problems indicated by the sample surveyed**

Category label	Count	% Responses	% Cases
Bad/no effect	11	5.4	7.6
Slowly relieved pain and other symptoms	48	23.4	33.3
Rapidly relieved pain and other symptoms	25	12.2	17.4
Cured the disorder	42	20.5	29.2
Reduced medication	52	25.4	36.1
Reduced conventional medical therapies	26	12.7	18.1
<b>Total responses</b>	<b>205</b>	<b>100.0</b>	<b>142.4</b>

**Table 3: How did macrobiotics affect certain diseases?**

Nationality	Frequency	Percent	Valid Percent	Cumulative Percent
Lebanese	83	53.2	61.5	61.5
Syrian	16	10.3	11.9	73.3
Jordanian	2	1.3	1.5	74.8
Algerian	4	2.6	3.0	77.8
Moroccan	3	1.9	2.2	80.0
Gulf countries surveyed*	27	17.3	20.0	100.0
Total Valid	135	86.5	100.0	
Total Missing	21	13.5		
<b>Total</b>	<b>156</b>	<b>100.0</b>		

Gulf countries surveyed: Saudi Arabia, Kuwait, United Arab Emirates and Qatar.

**Table 4: Frequency analysis of the “Nationality” variable**

<b>Age</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
20 Years or less	18	11.5	12.2	12.2
Between 21-30 years old	34	21.8	23.0	35.1
Between 31-40 years old	47	30.1	31.8	66.9
Between 41-50 years old	34	21.8	23.0	89.9
Between 51-60 years old	12	7.7	8.1	98.0
More than 61 years old	3	1.9	2.0	100.0
Total Valid	148	94.9	100.0	
Total Missing	8	5.1		
<b>Total</b>	<b>156</b>	<b>100.0</b>		

**Table 5: Frequency analysis of the “Age” variable**

<b>Duration on Macrobiotics</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid Percent</b>	<b>Cumulative Percent</b>
0	8	5.1	5.4	5.4
1 month	22	14.1	15.0	20.4
3 months	16	10.3	10.9	31.3
6 months	21	13.5	14.3	45.6
12 months	19	12.2	12.9	58.5
More than 12 months	61	39.1	41.5	100.0
Total Valid	147	94.2	100.0	
Total Missing	9	5.8		
<b>Total</b>	<b>156</b>	<b>100.0</b>		

**Table 6: Frequency analysis of the “Duration on Macrobiotics” variable**

<b>Occupation</b>	<b>Frequency</b>	<b>Percent</b>	<b>Valid percent</b>	<b>Cumulative percent</b>
Student	34	21.8	22.8	22.8
Self employed	27	17.3	18.1	40.9
Employed	28	17.9	18.8	59.7
Housewife	49	31.4	32.9	92.6
Retired	4	2.6	2.7	95.3
Unemployed	7	4.5	4.7	100.0
Total Valid	149	95.5	100.0	
Total Missing	7	4.5		
<b>Total</b>	<b>156</b>	<b>100.0</b>		

**Table 7: Frequency analysis of the “Occupation” variable**

The researchers looked further into the type of health problems that the population is concerned with and how did macrobiotics affect certain diseases? By examining the data in table 2, 21.1% of the sample was concerned about bone pain, while 17%, 14.1%, and 10.6 % were concerned with cancer, digestive problems, and diabetic or blood problems, respectively.

Table 3 shows that the responses to the question: How did macrobiotics affect certain diseases? The majority (25.4%) indicated that macrobiotics reduced medication, however 23.4% pointed that pain and symptoms of the diseases were slowly relieved. An encouraging 20.5% indicated that this lifestyle cured the disorder associated with the disease. Further investigation to these results will be postponed for future work

## Discussion and Conclusions

According to this study where both hypotheses H1 and H2 were accepted, the researcher concluded that most Middle Eastern people adopt macrobiotics or are interested in this lifestyle for health reasons primarily. This conclusion is based on the following reasons:

# Some people in the studied Middle Eastern countries have resorted to macrobiotics to satisfy their curiosity after hearing many successful stories on “spontaneous or miraculous” cessation of many ailments.

# In the surveyed low income countries like Lebanon and in many hospitals (excluding the few well known ones), some medical equipment is not up to date or missing. In addition, part of the macrobiotic community in this region specifically the Gulf, have adopted this lifestyle since they themselves or their relatives suffer from ailments and found it to be more effective than conventional therapies they had already tried. Many others found macrobiotics to be a good complementary lifestyle to their conventional therapies.

# Knowing that in Lebanon and most of the low income countries of the Middle East modern medical treatments are in most parts very costly, there is a lack of proper Medicare and health insurances are expensive. All that makes alternative therapies like macrobiotics, which are less expensive, seem very attractive.

# Historically speaking, Arabic medicine roots from this region and is based on herbal and other ancient home remedies following a similar path to macrobiotics in several treatment aspects.

Macrobiotics encourages one to take full responsibility of his own well being. Most people in the Middle East find it easier to surrender to modern medicine and taking little part in the treatment process. Relieving symptoms as quick as possible by taking medication seems to be a habit.

Macrobiotics seems very challenging to most of them since it entails taking one's health into one's own hands, making major diet and lifestyle changes and withstand the discharging phase. Therefore, from the health point of view, macrobiotics will most likely be adopted by Middle Eastern people in cases of major illnesses that were unsuccessfully

treated by conventional means. In addition, many of them will follow macrobiotics for a certain period of time to relieve pain or until they are cured; then go back to their old eating habits until probably they fall back into sickness. Here, the researcher concluded that many people in this region look upon macrobiotics as a temporary diet rather than a permanent lifestyle.

Although macrobiotics is not only a diet by itself, rather a lifestyle, this research implies that most people in the Middle East are more interested in its health and diet facets rather than its philosophical and spiritual domains. This can be emphasized since a macrobiotic diet has several positive effects on a person's health status when a disorder is involved. Contrary to modern belief, a grain and vegetable diet provides more strength and endurance than a meat and sugar diet. In many cases, a macrobiotic lifestyle reduces the need for medication, slowly relieves pain and other undesirable symptoms and decreases the need for conventional medical therapies. In other cases, this lifestyle cured persons from various ailments. Several medical doctors praise the macrobiotic diet for its low fat, sugar and caloric properties. Macrobiotic diet is high in fiber and complex carbohydrates. When you omit processed foods, you begin to strengthen your immune system ([www.drweil.com](http://www.drweil.com)). A nontraditional diet, if implemented properly can be healthful, promote longevity, and protect against illness. Vegetarian diets offer a number of advantages, including lower levels of saturated fat, cholesterol, and animal protein with higher levels of carbohydrates, fiber, magnesium, boron, folate, antioxidants such as vitamins C and E, carotenoids, and phytochemicals [ 9]. These diets also provide health benefits in the prevention and treatment of certain diseases. They key to reaping the benefits of a vegetarian diet is in the understanding of the phrase “appropriately planned,” meaning, identifying the key nutrients deficient and finding ways to supplement them.

The major concerns are that vegetarian and strict macrobiotic diets may be low or lacking in protein, omega 3, iron, calcium, vitamin D, and vitamin B12. So there are certain key points to consider avoiding the drawbacks of a macrobiotic diet.

Plant protein can meet the requirements when a variety of plant foods is consumed and energy needs are met. Research indicates that an assortment of plant foods eaten over the course of a day can provide all essential amino acids and ensure adequate nitrogen retention and use in healthy adults, thus complementary proteins (i.e. rice and beans) do not need to be consumed at the same meal [10]. Most importantly, the quality of plant protein varies: whereas soy protein can meet protein needs as effectively as animal protein, wheat protein eaten alone may be 50% less usable than animal protein [11]. Seafood, especially white fish and sometimes salmon, if consumed once or twice a week, will benefit the diet with a good source of protein and omega 3 fatty acids.

Plant foods contain only nonheme iron, which is more sensitive than heme iron to both inhibitors and enhancers of iron absorption. Inhibitors include phytate, calcium, teas, coffee, cocoa, and fiber, while enhancers include vitamin c and other organic acids [12]. Thus, a diet higher in fruits and vegetables rich in vitamin C can favorably impact iron absorption. Recommended iron intakes for vegetarians are 1.8 times those of nonvegetarians because of lower bioavailability of iron from a vegetarian diet (Food and Nutrition Board, 2001). However, it is likely that iron needs will vary from vegetarian to vegetarian based on the make up of their overall diet [9].

Calcium is present in many plant foods and fortified foods. Low oxalate greens (bok choy, broccoli, Chinese/Napa cabbage, collards, kale, okra, turnips greens) provide calcium with high bioavailability (49-61%) in comparison with calcium fortified juices, tofu, and cows milk (31-32%), and with fortified soymilk, sesame

seeds, almonds, and red and white beans (21-24%) [13]. However, oxalates present in some foods can greatly reduce calcium absorption, so vegetables that are high in oxalates, such as spinach and beets are not good sources of usable calcium despite their high calcium content [9]. The ADA recommends that vegetarians meet the recommended intakes for calcium by consuming at least eight servings per day of foods that provide 10-15% of the adequate intake for calcium as indicated in the Vegetarian Food Guide Pyramid. Macrobiotic diet plans call for limited amounts of dairy products. If you do not want a lot of animal milk in your diet, consume leafy green vegetables, grains, nuts, tofu, pumpkin seeds, calcium-enriched orange juice and soy drinks.

Vitamin D status depends on sunlight exposure and intake of vitamin D fortified foods or supplements. Sun exposure to the face, hands, and forearms for 5-15 minutes per day during the summer is believed to provide sufficient amounts of vitamin D for light skinned people, while darker skinned people require longer exposure [14]. Macrobiotic food that is fortified with vitamin D include soymilk, rice milk, and some breakfast cereals. Therefore, if sun exposure and intake of fortified foods are insufficient, then vitamin D supplements are recommended [9].

Sources of vitamin B12 that are not derived from animals include B12 fortified foods, such as soymilk, breakfast cereals, and yeast, or supplements [9]. A balanced macrobiotic diet contains tempeh and natto (forms of fermented soybeans) that are rich in Vitamin B12. It is essential that macrobiotic people not consuming enough tempeh and other Vitamin B12 rich food use a supplement, fortified food, dairy product, or eggs to meet recommended intakes of vitamin B12 especially pregnant, lactating women and for breastfed infants if the mother's diet is not supplemented [15].

Lacto-ovo-vegetarian children exhibit growth similar to that of their

nonvegetarian peers [16]. Poor growth in children has been seen primarily in those on very restricted diets, such as macrobiotic, fruitarian, or unbalanced vegetarian/vegan diets [17]. Frequent meals and snacks and the use of fortified breakfast cereals, breads, and pastas with foods higher in unsaturated fats can help vegetarian and macrobiotic children meet energy and nutrient requirements (American Dietetic Association, 2003).

The researcher truly believes that a well-balanced macrobiotics lifestyle will be successful in the Middle East especially low income countries and the market for its organic and macrobiotic products will grow noticeably in the near future. If not abiding 100% with a macrobiotic diet, a well-balanced lifestyle from macrobiotics important guidelines could simply be applied, most essentially: eating organic seasonal food, mostly vegetarian food (whole grains, beans, legumes, seaweeds, vegetables), eating according to our seasonal needs, exercising, avoiding fast food and processed food, etc... Therefore, governments and health agencies of those countries should:

# Cooperate with international macrobiotic institutes, like the Kushi Institute in the States or in Holland, to organize workshops, conferences and research programs and to open a macrobiotic institute in cooperation with the international institutes.

# Rely on this mutual cooperation to pave the way for the government to accredit alternative therapies in general and macrobiotics in particular.

# Encourage farmers to grow organic food.

# Support organized import and export regulations regarding organic foodstuff.

Encourage already existing health centers to adopt macrobiotics as part of their therapies by providing them with resources and putting them in touch with the macrobiotic institutes.

## Summary and Overall Recommendations

People that follow macrobiotics or are knowledgeable about it in the Middle East believe that this lifestyle can cure, prevent and relieve symptoms of many disorders.

A variety of menu planning approaches can provide adequate nutrition for vegetarians and macrobiotics:

1. Choose daily a variety of foods including whole grains, vegetables, fruits, legumes, nuts, seeds, and if desired, fish (weekly). Seasonal fruits and vegetables alone is highly recommended.
2. Choose whole, unrefined foods often and minimize the intake of highly sweetened, fatty and heavily refined foods. Organic products would be ideal.
3. If animal foods such as dairy products and eggs are used, choose lower-fat dairy products and use both eggs and dairy products in moderation.
4. Learn healthier substitutes like fortified/enriched rice milk, soy milk and tofu instead of dairy products.
5. Use high quality supplements if needed like vitamin B-12, calcium, iron or omega 3.
6. It is imperative that practitioners educate parents on the importance of maintaining proper nutrition and keep continuous surveillance for signs of nutritional deficiencies. Never avoid necessary medical consultation.
7. If you choose a macrobiotic lifestyle, consuming yeast extracts, soy products, spreads without animal fats and enriched whole grains is helpful. You could also add supplements depending on your need like a multivitamin, B Complex vitamins, vitamin D, calcium, magnesium, iron or omega 3 fatty acids .

Referring to these results it is obvious that the modal is adequate and effective in studying some of the health aspects of macrobiotics (in the Middle East) that were targeted in this research. However, some of the following reasons might affect the conclusions:

- # The small size of the sample relative to the number of variables.
- # Since this topic is currently a new idea and people in this region are mainly conserved, a threat may arise from the respondents' level of understanding and perception to the process and the questions they were asked to answer.
- # The integrity of the respondents, in answering the questionnaires, plays a good deal of importance in the efficiency of the model.

For future research, the following topics need to be addressed and further investigated:

- # Government regulations, rules and services in this region with the outcome of promoting a macrobiotic lifestyle.
- # The effects of this lifestyle on curing and preventing particular ailments, the success rates, recovering period, etc.
- # Document and record health cases in health centers, hospitals, institutes and clinics that use the macrobiotic approach as part of their therapies.

## Acknowledgement

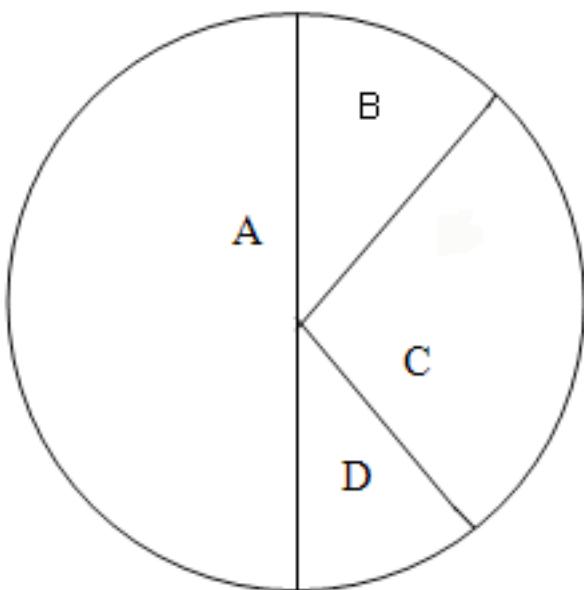
I am indebted to Dr. Abdulrazak Abyad for his encouragement to target our research in the Arab world and for taking the time to review this work.

(Appendices next page)

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## Appendix I



### Standard Macrobiotic Meal

**A:** 50-60% whole cereal grains:

This includes whole brown rice, barley, millet, buckwheat, wheat. From time to time, pasta, bread, baked goods and other flour products may be used.

**B:** 5-10% miso soups:

They are preferably made with vegetables, and occasionally beans, grains, and sea vegetables.

**C:** 25-30% vegetables:

More than two thirds of the vegetables are served cooked and up to one third may be prepared in the form of fresh salads or pickles.

**D:** 5-10% beans, bean products and sea vegetables:

Beans include adzuki, chickpeas, lentils, etc. bean products include tempeh, tofu and natto. Sea vegetables are eaten in small volume (less than 5%) and include wakame, kombu, nori, etc.

Plus occasional supplementary foods:

- # Fish and sea food (using less fatty varieties)
- # Seasonal fruits, cooked, dried and fresh
- # Nuts and seeds
- # Natural nonaromatic and nonstimulant beverages
- # Naturally processed seasonings and condiments

## Appendix II

Analysis of data on the personal information variables is shown in Tables 4 to 7:

- # 61.5% of the sample was Lebanese while the rest were from surrounding Middle Eastern countries (Table 4).
- # 89.9% of the sample was under 50 years old (Table 5).
- # 41.5% of the sample was on macrobiotics for over a year (Table 6).
- # 59.7% of the sample was employed or a student (Table 7).

As for the other variables like gender, education, marital status, family size and number of meals consumed per day, the statistics revealed the following:

- # 65.3% of the sample was females.
- # 55.1% of the sample had university education.
- # 55.8% of the sample was married.
- # 85.5% of the sample was a family of 5 members or less.
- # 78.4% of the sample had 3 meals a day.

# Effect of cupping therapy in treating chronic headache and chronic back pain at “Al heijamah” clinic HMC

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## ABSTRACT

**Objective :** To test the effect of cupping therapy in treating chronic headache and chronic back pain.

**Background:** Cupping therapy “Al heijamah” is a very common non-conventional therapy in the Arabic societies that has been used in the treatment of a wide range of conditions, such as hypertension, rheumatic conditions, ranging from arthritis, sciatica and back pain, migraine, anxiety, and general physical and mental well-being.

**Methods:** This study was a clinical intervention (pre and post design) utilizing non- conventional therapy (AL Heijamah) for treatment of patients with chronic back pain or chronic headache, with three months follow up at the Out patients Department (OPD) of Hamad General Hospital (HGH) Hamad Medical Corporation (HMC), State of Qatar, from May 2007 to December 2007, to show the efficacy of that

procedure on chronic pain using Visual Analog pain scale, pre and post intervention.

**Results:** The total number of the participants was eighty six, slightly more than half of them were male (51.2%). The majority were non Qatari (72.1%); thirty seven of them had headache and forty nine of them had back pain. Most of the participants were treated with wet cup therapy (98.8%) and only one of them was treated with dry cup. Fifty two of the participants had only one session of cupping while only five of them completed the four sessions. The pain score for patients with headache was decreased from eight to four after cupping therapy followed by intermittent periods of fluctuation of pain, scored from four to five for around five weeks, then it maintained constant at four score till the end of the follow up period. Meanwhile the pain scale for patients with low back

pain decreased from seven to three after two weeks and stayed constant till the end of the twelve weeks.

**Conclusion:** The effect of cupping therapy (Al heijamah) for chronic headache and back pain has been studied and the results revealed significant improvements in participants as a result of cupping therapy. Further studies with larger samples, for longer duration of follow up and use of a comparison group are recommended.

**Key words:** Complementary, alternative medicine, cupping, heijamah.

## Background

Complementary and Alternative Medicine (CAM), is defined as "a group of diverse medical and health care systems, therapies, and products that are not presently considered to be part of conventional medicine"(1).

Despite uncertainties about the effectiveness of most CAM therapies, the use of CAM by patients has been well documented, with most studies suggesting that 30-98% of patients use some form of CAM therapy (2-4). Cupping therapy "Al heijamah" is a very common traditional therapy in the Arabic societies. The word cupping means sucking. The practice of Al-Heijamah has been part of Middle-Eastern cultural practice for thousands of years with citations dating back to the time of Hippocrates (400 BC). To embrace Cupping Therapy, the ancient Egyptians, and the oldest recorded medical textbook, Ebers Papyrus, were written in approximately 1550 BC in Egypt about cupping (5). In the Islamic world these practices were conducted to a large extent by barbers, cuppers and others outside the sphere of the learned physicians who composed treatises (6). In the Arabian Gulf Hijamah was used not only for treatment, but also for prophylaxis against diseases (7). Cupping Therapy can be divided into two broad categories: Dry Cupping and Wet Cupping. Dry Cupping Therapy tends to be practiced more commonly in the Far-East whereas Wet Cupping is favored in the Middle East and Eastern Europe (18). The principles of acupuncture and acupressure are very similar to the Wet Cupping Therapy, except for the fact that Wet Cupping involves the letting of blood whereas acupuncture and acupressure utilize suction and stimulation of points to attain the desired results. Letting out blood is in fact among the oldest acupuncture techniques. Acupressure and acupuncture analgesia have proved that they can elicit the release of morphine-like substances (endorphins), serotonin or cortisol which can lead ultimately to pain relief and alter the physiological status of

the individual (8). Acupressure and acupuncture in fact are being utilized and have proven usefulness in pain and addiction management (8, 9, & 10). At a biological level; acupressure and acupuncture work by stimulating or activating the immune system; enkephalin secretion; neurotransmitter release vasoconstriction and dilatation and the gates for pain in the CNS which interpret pain sensation (8, 11). Finally, it is believed that stimulation of acupoints can lead to the pain gates to be overwhelmed by increasing frequency of impulses therefore leading ultimately to closure of the gates and hence pain reduction (12, 13). According to the National Institute of Health (NIH) Consensus Development Panel (1997), acupuncture is also effective against chemotherapy nausea and vomiting, nausea in pregnancy, dental pain, adjunct therapy, addiction, stroke rehabilitation, headache, menstrual cramps, tennis elbow, fibromyalgia, low back pain, carpal tunnel syndrome and asthma (14, 15). As Cupping Therapy has been proposed as an effective treatment for pain and given the similarities with acupuncture and acupressure theory, it is possible therefore to accept the above mechanism of biological action for Cupping Therapy for pain reduction as well. This paper reports the results of a prospective experimental trial carried out in Qatar with the aim of exploring the efficacy of cupping therapy for treatment of chronic back pain and chronic headache, with follow up of three months.

## Methods

The general objective for this study was Welfare of patients with chronic back pain and chronic headache and the specific objectives were to assess patients with chronic back pain and chronic headache and to assess the effect of cupping on chronic back pain and chronic headache, both immediately after treatment and during the follow up visits, using a well established pain score.

**Study design:** Clinical intervention study (pre and post design). It

was carried out at Out patients Department (OPD) of Hamad General Hospital (HGH), Hamad Medical Corporation (HMC) from May 2007 to December 2007. All patients attended the outpatient department for treatment by Alheijamah were included in the study during the field work period.

**Inclusion criteria:** Patients with chronic headache or chronic back pain, lasting more than 3 months, of any sex, 18 years or older were included. A total of 86 patients of both sex were recruited.

**Exclusion criteria:** Patients who received analgesic medication or physiotherapy were excluded as well as patients who could not discontinue medication for two days before and during follow up period. Patients who had a febrile illness, organ failure, heart, hepatic, kidney, bone marrow, any type of anemia and pregnant females were also excluded. Patients who had chronic low back pain that needed treatment by surgical intervention, patients with spinal stenosis, fracture or tumors of bone or spine, disorders of genitourinary system such as kidney stone, uterine fibroids, and chronic low back pain due to osteoporosis, were also excluded. Patients who were complaining of chronic headache of ophthalmologic or orofacial or sensual origin and chronic headache due to dental causes and general systemic illness (hypertension) were also excluded. Patients' assessment sheet was developed in order to clarify the demographic characteristics of patients (age, gender, nationality), the present history of the complaint and its duration, as well as the past history of similar therapy, followed by full clinical examination, both general and local, in addition to laboratory and radiological investigation such as complete blood count, sedimentation rate, and blood chemistry.

Assessment of pain was done at the initial therapy and in follow up visits by using a numerical pain scale graded 0 to 10, whereby 0 denotes no pain , 1-4 mild pain, 5-6 moderate pain, and 7-10 severe pain.

**Instruments and equipment:**

Vacuum equipment.  
Electric suction SAM 12, Power: 220 V AC, 50 Hz, 95 watts.  
Vacuum Gauge: 6.25 cm (2.5 inch, square dial). (0-760 mm Hg) calibration (0 to - 100 kpa).  
Simple (non-magnetic) high quality disposable plastic cups of variable sizes ranging from 2 to 3 inches in diameter.  
Scalpel with a size of 15.

**Cupping therapy procedures:**

There are two types of cupping therapy; dry cupping (no blood letting), and wet cupping, where there is blood letting. There are two sites for cupping therapy for the patients with chronic back pain; lower anatomical area at lumbo-sacral and sacroiliac joint ( acupuncture points of this lower back anatomical area are shangliao BL- 31, Ciliao BL-32, Xiaochangshu BL- 27, Pangguangsh BL- 28, Baohuang BL- 53); upper back at the level of the 7th cervical spine process and the area between right and left scapulae where there are three points, one in the midline and the other two are located three finger laterals to midline. The anatomical areas for chronic headache are occipital, bilateral occipital, frontal, bilateral side at the root of the neck and upper back between scapular areas.

Cleaning and sterilization of the selected skin area was done. Sterilized cups as appropriate (2 - 3 inches) were applied on the selected sterilized local skin area and connected to a vacuum negativity pressure which was raised to minus 300 to 600 mmHg. Skin was suctioned inside cups by 1 cm to 5 cm in depth according to different areas, then left for 60 to 120 seconds in each session before the cup was then removed. And the process was repeated three times (dry cupping). Superficial scratches, from 2ml to 10ml, were done in the localized congested skin area that appeared. The cup was applied again and negativity was raised to 300 to 600 mmHg, (wet cupping), and the blood was oozing - the amount of blood which might be oozed per session ranged from 3 to 30 ml. This process was also repeated three times per session. Sterilization was done on the scratched cupping skin area, and then covered by sterile gauze. Follow up was conducted later at the Cupping Therapy Research

Clinic "OPD - HGH - HMC, according to the following schedule: at two weeks, four weeks, six weeks, eight weeks and twelve weeks after initial therapy. At each visit, assessment of pain was done according to the patient's words and signed by the patient's hand. Patient's assessment sheets were reviewed twice, pre and post, to ensure their completeness and consistency of the responses.

Data were entered directly into the statistical package of social sciences (SPSS) software (version 14 SPSS). Duplicate data entry was performed to ensure quality control. Descriptive statistics were calculated for all the demographic and clinical parameters in the study. To see trend in overall pain as well as back pain and headache, non parametric two way ANOVA (Friedman's two way ANOVA) was performed. SPSS 14.0 Statistical Package was used for the analysis; value 0.05 was considered as a statistical significant level. Approval of the research as well as the national ethical committee was given. Informed consent was signed by participants after explanation of purpose of the study, the direct and indirect benefits and risks as well as confidentiality of collected data with their right to withdraw at any stage of the study.

**Results**

Eighty six patients completed the study and only three cases were dropped because of lack of interest. The results showed that more than fifty percent of patients (52.3%) were 36 to 50 years old; slightly more than half of them were male (51.2%), the majority of them were non-Qatari (72.1%); thirty seven of them had headache and forty nine of them had back pain. Most of the participants were treated with wet cup therapy (98.8%) and only one of them was treated with dry cup. Almost half of them had a past history of similar cupping therapy. Fifty-two of the participants had only one session of cupping while only five had completed the four sessions (Table 1). The median Pain score and the range at the initial therapy for back pain and headache was 7 and 7.5 respectively. It was noticed that the pain was decreased to 3 on the 2nd week, 4th week, 6th week and 8th week following therapy. The pain score ranged from 0 to 9

and at 12th week; the median pain score was 3, ranging from 1- 10, and there was statistical significant difference between the pre and post intervention phases (*p.value <0.05*) (table 2&3). The result revealed an overall decline in the trend of pain from seven at the initial phase, to three at 12th week (Figure 1). The pain score for patients with headache decreased from eight to four after cupping therapy and remained constant for two weeks, followed by an increase to five, for another two weeks, then it remained constant for another two weeks. Finally it decreased again to four. Meanwhile the pain score for patients with back pain had decreased from seven to three after two weeks and stayed constant till the end of the twelfth week. There was astatistically significant decrease in pain score for all the participants after cupping therapy (Figures 2, 3).

**Discussion**

It is evident that Complementary and Alternative Medicine (CAM) will be a part of health care for the majority of the population in the coming years. Fortunately, research in this realm has been growing rapidly (16, 17). Hence, it was reasonable to assess the effect of cupping therapy as a common traditional therapy in Arabic societies. We assessed the effect of cupping therapy on chronic pain as perceived by patients with chronic headache or chronic back pain. The level of pain as perceived by the participants at the post-intervention periods was statistically significantly lower if compared to the pre-intervention. This was consistent with results of a study which concluded that cupping therapy can decrease chronic knee pain (18) This also agreed with a study done by Ahmed SM., et al., which concluded that Blood Letting Cupping may improve the clinical condition of patient with rheumatoid arthritis including the back pain associated with it(19). Li CD.et. al. concluded from their study that cupping therapy is an effective therapy for pain associated with fibromyalgia syndrome(20). The current study also showed a statistically significant decrease in pain score for patients with headache

Variable	Category	N = (%)
<b>Age</b>	≤ 35 years 36 - 50 years ≥51 years	20 (23.3) 45 (52.3) 21 (24.4)
<b>Gender</b>	Male Female	44 (51.2) 42 (48.8)
<b>Nationality</b>	Qatari Non Qatari	24 (27.9) 62 (72.1)
<b>Complaint</b>	Headache Low back pain Upper back pain	37 (43.0) 45 (52.3) 4 (4.7)
<b>Diagnosis</b>	Ankylosing spondylitis Lumbar spondylosis Muscular pain Sciatica Migraine Tension headache	8 (9.3) 3 (3.5) 32 (37.2) 8 (9.3) 32 (37.2) 3 (3.5)
<b>Procedures</b>	Wet cupping Dry cupping	85 (98.8) 1 (1.2)
<b>Past similar therapy</b>	Yes No	41 (47.7) 45 (52.3)
<b>Sessions</b>	1 2 3 4	52 (61.2) 22 (25.6) 10 (11.6) 5 (5.8)
<b>Pain duration in year</b>	≤ 3 4 - 10 ≥11	35 (40.7) 30 (34.9) 21 (24.4)

**Table (1) Frequency distribution of patients according to their Demographic & Clinical characteristics (n = 86)**

Variable	Median	Range (max-min)	Mean	Std. Deviation	P value
Pain scale at Baseline	7	2 - 10	6.65	1.73	0.01
Pain scale at 2 weeks	3	0 - 9	3.52	2.4	0.01
Pain scale at 4 weeks	3	0 - 9	3.61	2.5	0.01
Pain scale at 6 weeks	3	0 - 9	3.81	2.5	0.01
Pain scale at 8 weeks	3	0 - 9	3.64	2.4	0.01
Pain scale at 12 weeks	3	0 - 10	4.04	2.5	0.01

**Table (2) Pain scale at different phases of the study**

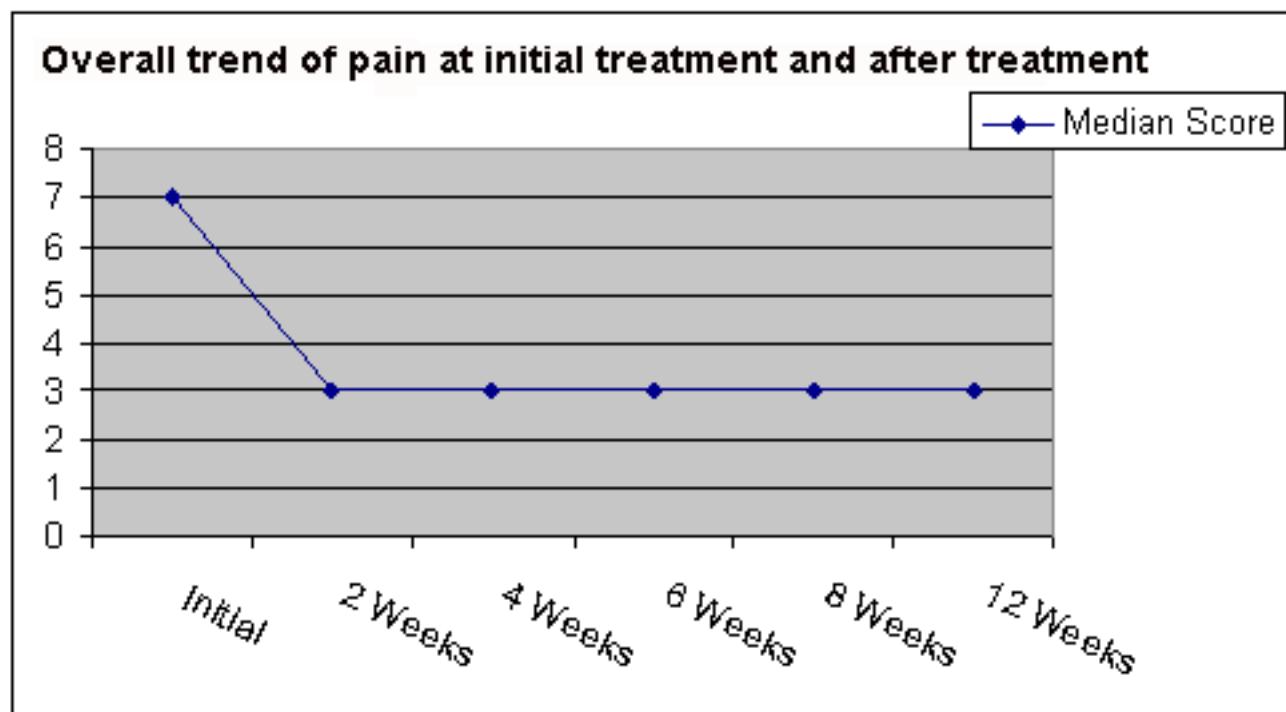
Variable	Baseline Median (range)	2 weeks med (range)	4 weeks med (range)	6 weeks med (range)	8 weeks med (range)	12 weeks med (range)	P value
Back pain	7(2-10)	3(0-7)	3(0-7)	3(0-7)	3(0-9)	3(0-10)	0.01
Headache	7.5(6-9)	4(1-9)	4(1-9)	5(1-9)	5(1-9)	4(1-9)	0.01

**Table (3) Pain scale Low back pain & Headache, in the study**

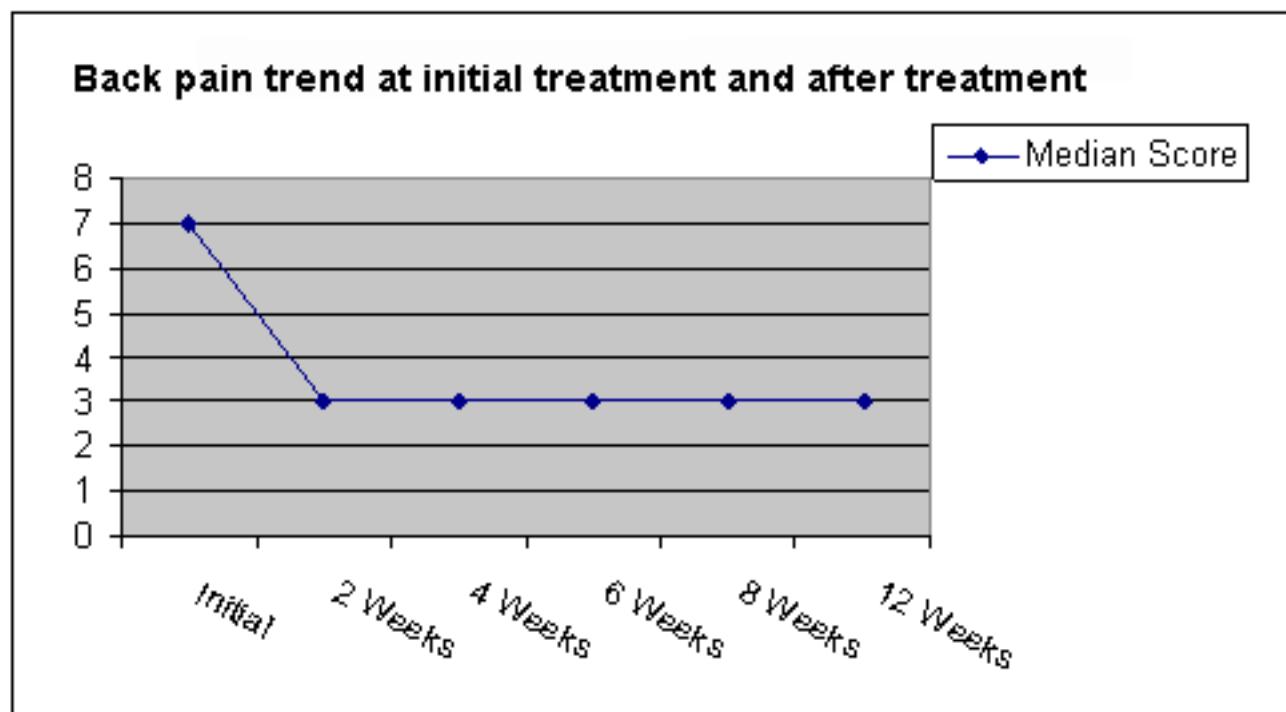
a statistically significant decrease in pain score for patients with headache after cupping and this is in agreement with a trial of acupuncture or cupping therapy that was done for management of headache (21, 22&23) and also showed a

decrease in pain score associated with headache after cupping. The mechanisms of reduction in pain score after cupping therapy are still not well investigated by a suitable number of researchers to formulate a basic knowledge and evidence

base for such traditional therapy but theory says that the principles of Acupuncture and Acupressure are very similar to that of cupping therapy. The reductions in pain scores can be attributed to sound rationale as cupping therapy can



(Figure - 1) Overall trend of pain at baseline and after treatment during the follow up visits

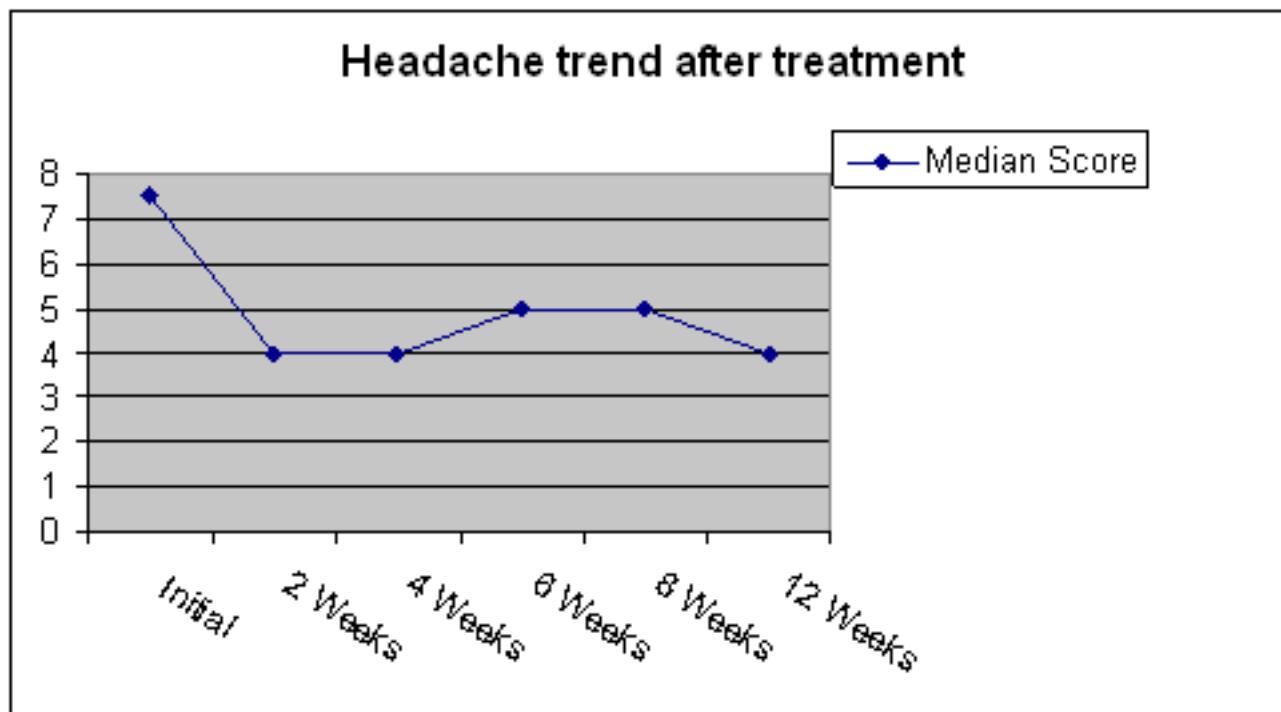


(Figure - 2) Back pain trend at initial treatment and after treatment

can be attributed to sound rationale as cupping therapy can elicit the release of morphine-like substances (endorphins), serotonin or cortisol which can ultimately lead to pain relief and alter the physiological status of the individual (8). In fact acupressure and acupuncture are being utilized and are proven as useful in pain and addiction management(8, 9&10). At a

biological level, like acupressure and acupuncture, cupping therapy works by stimulating or activating the immune system; Enkephalin secretion; neurotransmitter release, vasoconstriction and dilatation and the gates for pain in the CNS which interrupt pain sensation (8, 11). Finally, it is believed that stimulation of cupping points can lead to the pain gates to be overwhelmed by

increasing frequency of impulses, therefore leading to closure of the gates and hence pain reduction (12, 13). In the current study, the pain score was not only decreased immediately but also remained decreased for the three month follow up period and this may be explained by the theory that said that "persistent response to cupping therapy is related to biological



**(Figure- 3) Headache trend after treatment**

response where there are localized indurations of skin that has been happened by cupping procedures". This mostly related to interleukin mediator liberated from the epidermal cell layer of the skin IL 1 and IL 6 which have many immunological effects (24). In addition to that there is a correlation between the immunological factors and pain mechanism control supported by Calcitonin gene-related peptide (CGRP) which is a sensory neuropeptide important in inflammatory pain, that conveys pain information centrally and dilates blood vessels peripherally. A protein increase in the skin and more neurons have detectable CGRP expression in the innervating dorsal root ganglion (DRG), so decreasing pain (25). Interpretation of the current finding must consider the study's limitation. An important limitation of the present study is there is no control group. Pain measurement is subjective; thus there is a possibility of bias.

## Conclusion

The effect of the treatment of cupping therapy for chronic headache and chronic back pain has been studied and results revealed that there are statistically significant differences in support of cupping therapy. The study recommends control and regulation of Cupping Therapy in addition to registration of qualified physicians. Further long-term studies are recommended in order to verify the effect of cupping therapy on a larger scale.

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# Case Report: Cutis Marmorata Telangiectatica Congenita

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## ABSTRACT

Cutis Marmorata Telangiectatica Congenita (CMTC) is an uncommon, sporadic congenital vascular malformation characterized by a generalized or localized reticular cutaneous vascular network. It is one variant of a disorder of abnormal pigmentation of skin due to melanocytic and vascular abnormalities called Phakomatosis pigmentovascularis (PPV). Here is a report of one case of such a disease in a 15 month old boy who has typical lesions of Mongolian spots, hypopigmentation, right sided mottling of skin (cutis marmorata) and hemihypertrophy. He also has bluish discoloration of sclera and periorbital area, small secundum atrial septal defect and a preauricular sinus.

**Key words:** phakomatosis pigmentovascularis, hemihypertrophy, cutis marmorata, Mongolian spot.

## Introduction

First described by the Dutch pediatrician Van Lohuizen in 1922, cutis marmorata telangiectatica congenita (CMTC) is a rare, benign, sporadic skin lesion that presents itself as a localized or generalized, reticulated, blue-violet, cutaneous vascular network at birth (1).

This marbled pattern is always visible, but may be enhanced by cold temperatures or distress (1).

Lesions commonly occur on the legs, arms and trunk and rarely involve the face and the scalp and are usually associated with skin atrophy and ulcerations (2).

## Case Report

This is a 15 month old male patient who is the product of full term normal vaginal delivery with a birth weight of 4.0 kg. He has multiple skin lesions of different colors all over his body which are present since birth.

His right side of the body is bigger than the left and he was diagnosed to have ASD of 0.2cm. He is under regular follow up by the pediatric cardiologist.

He had nutritional rickets at the age of 6 months, which was treated successfully by vitamin D2 injection once.

His father had a pituitary tumor which was resected and he is on hormonal replacement therapy now.

On examination there was a small blind auricular sinus on the right ear, periorbital and scleral bluish discoloration and multiple big Mongolian spots on the shoulders, trunk and lower limbs. He has hemihypertrophy of the right side which is more prominent (in size not length) in the right arm. This is becoming less prominent than in early months. On that side he has cutis marmorata rash which involves also the right side of the chest. It slightly crosses the Midline. Also he has multiple small hypopigmented macules on the trunk.

He has normal growth parameters and normal developmental milestones. See photos next page. His lesions are becoming less prominent as he becomes older. He is under regular follow up in the pediatric and dermatology clinic.

These findings fit with the diagnosis of Phakomatosis pigmentovascularis type V or Cutis Marmorata Telangiectatica Congenita.

## Discussion

CMTC was thought to be a separate entity but in the year 2000 Enjolras and Mulliken(3) have related this disease to another disorder of pigmentation called phakomatosis pigmentovascularis (PPV) which is a disorder of abnormal pigmentation of skin due to a combination of melanocytic and vascular abnormalities. It was subclassified into four types based on the proposed classification by Hasegawa and Yasuhara (4) in 1985. Each type has characteristic skin pigmentary lesions. Enjolras and Mulliken described CMTC as being the fifth type of PPV as it has both melanocytic (Mongolian spots) and vascular (cutis marmorata) components.

CMTC is usually observed at birth or shortly thereafter in 94% of patients (2). In other reports, patients did not develop skin lesions until 3 months or even 2 years after birth.(5,6).

Additional abnormalities are common with CMTC. They are present in about 50% of the more than 300 cases reported so far. Extra cutaneous features include ocular (glaucoma, megalocornea, pigmentation etc), musculoskeletal (hemihypertrophy, macrocephaly, scoliosis etc) and CNS manifestations (seizures, mental retardation, hydrocephalus etc) (7-9).

In 1997, Moore et al. (10) and Clayton-Smith et al. (11) independently reported 13 and 9 children respectively with a malformation complex consisting of macrocephaly and cutis marmorata telangiectatica congenita. This common association was then described as a unique disorder. In our case, no signs of macrocephaly were detected.

One study reported an improvement in lesions in 46% of patients within 3 years (2). If CMTC persists into adulthood, it can result in complaints due to parasthesia, increased



Figure1: Periorbital and scleral bluish pigmentation



Figure2: Hemihypertrophy and Cutis marmorata



Figure 3: Hemihypertrophy



Figure 4: Multiple big Mongolian spots



Figure 5: Mongolian spot on left shoulder and Hypopigmented lesions on the back

sensitivity to cold and pain and the formation of ulcers (12).

The diagnosis of cutis marmorata telangiectatica congenita is made upon finding typical clinical manifestations. Histological examination is usually not diagnostic and usually demonstrates an increase in the size and number of capillaries, veins and lymphatics (3). We did not perform any histological examination based on this knowledge in our case.

All cases have been sporadic (13) with a few possible exceptions (14).

Although the cause of PPV is unknown, it has been proposed that the combination of vascular and pigmentary anomalies arise as a result of a genetic concept called the twin-spotting Phenomenon (15, 16). In this phenomenon, there is double heterozygosity with the recessive vascular mutation on one chromosome and the pigmentary mutation on the homologous chromosome. During embryogenesis, somatic recombination or crossing-over occurs between the homologous chromosomes, resulting in two different cell populations, each being homozygous for either allele.

There is no specific treatment for this disorder. Laser treatment can help in patients with extensive nevus flammeus and Mongolian spot which do not show signs of spontaneous

regression and if it represents an aesthetic problem. Recognition of possible underlying systemic and local anomalies and complications dictates management.

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