World Family Medicine Journal

incorporating the Middle East Journal of Family Medicine

ISSN 1448-4196

October 2010 - Volume 8, Issue 9

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From the Editor

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This is the ninth issue this year and it is a rich issue with papers from North America, Africa , Middle East and Europe. In addition a number of papers in this issue reflect colloborations of authors from several countries.

A paper from Italy looked at cardiovascular prevention using internet resources. The authors noted that in order to find stimuli, for getting young students interested in the subject “Health”, internet resources have been searched, such as scientific publications, atlases, images, graphics and animations that help study cardiovascular prevention. Stroke, myocardial infarction, their risk factors and benefits from a healthy life style are also described. It can be noted that compliance with the rules of cardiovascular prevention, often produces benefits in other areas of health.

A paper from Canada and Kuwait looked at a case report of relapsing polychondritis in a patient with ulcerative colitis. The authors stressed that Relapsing polychondritis (RPC) is a rare multisystem autoimmune disease that has been a challenging diagnosis given its rarity and vague presentation. They present a comprehensive review that includes the different associations and manifestations of RPC, the evolution of the diagnostic criteria proposed by different authors and the conventional modalities of therapy highlighting the use of biologic agents in such a rare condition.

A Case Report from Nigeria, discusses Bilateral Aniridia presenting with ectopia lentis and emphasises that in view of the occurrence of Wilm’s tumour as well as other ocular anomalies in aniridia there is need for a multidisciplinary approach in the management of aniridia.

A paper from the Health Authority of Abu Dhabi Poison and Drug Information Center looked at a household products survey as a source of health hazards. The authors stressed that many household cleaning products used in homes are actually considered to be health hazards. Exposure to corrosive household products represent one of the world’s most common medical emergency in childhood. The authors conducted a random survey on commonly available household products in the Emirate of Abu Dhabi. The authors concluded that the results indicate that many corrosive substances have no proper packaging. In addition, the majority of labeling for cleaning products does not provide all safety information recommended for consumers. Many of the products do not have proper Arabic translations.

A paper from Bangladesh looked at the program of skilled birth attendants introduced by the government. The study was conducted with 100 clients in the Maniknagar district. This study suggested that to generate effective and expected outcomes, consideration should be given to strengthening training, widening the CSBA programme, ensuring available weight machine, providing surgical efficiency of CSBAs, ensuring blood and urine checking instruments and supplying necessary drugs and equipment.

Another paper from Nigeria used a random survey to determine the job stressors and coping strategies among medical practitioners in Owo. The authors concluded that the job stressors were mainly lack of social support and no time for leisure. The main coping strategies were inspiration from religious belief , acceptance of reality of stress and humour.

A third study from Nigeria looked at ocular findings of sickle cell eye disease patients in Owo. The 30 respondents comprised 14 males and 16 females. Most respondents had conjunctiva signs while only a few of them had retina signs. It is recommended that sickle cell disease patients should have a detailed ocular examination at least once a year.

Job stressors and coping strategies amongst medical practitioners in a Nigerian community

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ABSTRACT

Aim : This study aimed at determining the job stressors and coping strategies among medical practitioners in Owo.

Methodology : The study was conducted at Federal Medical Centre, Owo, Ondo State, Nigeria between May and June, 2008. Eighty medical practitioners out of one hundred and forty seven working in the hospital were selected by simple random sampling and interviewed by the author and two assistants with the aid of structured questionnaire.

The data obtained was analyzed with SPSS 12.0.1.

Results : There were 59 males (73.75%) and 21 females (26.25%). The respondents comprised 14 (17.5%) consultants, 12 (15%) resident doctors, 43 (53.75%) medical officers and 11 (13.75%) house officers. Sources of stress included lack of social support (65%), no time for leisure (60%), overwork (51.3%) and financial constraints (50%). The coping strategies were inspiration from religious belief (78.8%), acceptance of the reality of stress (58.75%) and humor (56.25%).

Conclusion : The job stressors were mainly lack of social support and no time for leisure. The main coping strategies were inspiration from religious belief, acceptance of reality of stress and humour.

Key words : Medical practitioners, occupational stress, Nigeria

Introduction

Occupational stress is a major hazard for many workers as it can adversely affect the health of the worker. Stress is an undue inappropriate or exaggerated response to a situation.(1) Stress is negative and often associated with adverse psychological and physiological changes leading to decreased productivity, disease and sometimes death.(2) Stress in medical practice has always been a topical issue.(3) It had been considered as a complex dynamic transaction between individuals and their environment.(4)

The role of occupation in the dynamics of health has been reported.(5) Workers who are satisfied with their work have been found to be healthier than those who are not.(6) A study in England reported that both job stress and non-work stress were associated with poor physical health, poor emotional health and high job dissatisfaction.(7)

Hospital work involves some of the most stressful situations found in any work place.(8) Stress at work and outside of work could contribute to the anxiety and depressive disorders experienced by health care staff.(9) Non work related factors like family responsibilities, peer pressure and financial constraint can cause stress in an individual. The physical working condition can also be a trigger factor for stress. Ndom et al in a study carried out in a Nigerian Teaching Hospital established that poor work environment can induce stress.(10)

A stressor is an event or set of conditions that induces a stress response. Stressors are broadly defined as situations or events that have the potential to affect health outcomes.(11) Individual workers may be exposed to work and non-work related stressors.

Coping is a stabilizing factor that may assist individuals in adapting to stressful events.(12) Active or reactive coping responses can be positive or negative depending on the situation and the response.(13) The actual response to a stressful event may also be as important as the event itself.(14) With an appropriate response to a stressor the impact on the individual may be limited. The individual may deal with stress through several methods including removing the stressor, developing a specific response to deal with it or alternatively seeking diversion from the stressor.(14) It has been reported that ethnic, cultural and socio-economic characteristics influence coping behaviour.(15) To optimally take care of others, medical doctors must be in a perfect state of mind devoid of anxieties and worries.(1) However this is often not the case in medical practice as doctors are prone to factors that induce stress in the general population. The training of medical doctors at the undergraduate and post graduate levels is usually very stressful and tasking. Medical doctors also often have to practice under stressful conditions especially in a developing country like Nigeria where some of the needed instruments and equipment may not be readily available. In view of the latter, this study was designed to determine the job stressors and coping strategies among medical practitioners at Federal Medical Centre, Owo, Ondo State, Nigeria.

Methodology

This study was conducted between May and June, 2008. A total of eighty medical practitioners out of the one hundred and forty seven working in the hospital were selected by simple random sampling. Informed consent was obtained from each of the respondents. All the different cadres of medical practitioners were enrolled in this study. The respondents were interviewed by the author and two trained assistants with the aid of a structured questionnaire. The information obtained included their bio-data, sources of stress and the coping strategies to stress. The data obtained with the study instrument (questionnaire) was collated and analyzed with SPSS 12.0.1 statistical software package.

Results

There were eighty respondents comprising of 59 males (73.75%) and 21 females (26.25%). The ages of the respondents ranged between 25 and 50 years. The mean age was 34.21years while the median and mode ages were 32 years respectively. The respondents were made up of 14 (17.5%) consultants, 12 (15%) resident doctors, 43 (53.75%) medical officers and 11 (13.75%) house officers.

Ethnicity of the respondents revealed that 68 (85%) were Yorubas, 6 (7.5%) were Ibos and the other ethnic groups accounted for the remaining 6 (7.5%).

The majority of the respondents:74 (92.5%) were Christians while the remaining 6 (7.5%) were Muslims. Most respondents: 49 (61.25%) were married and 31 (38.75%) were single.

The sources of occupational stress as shown in Table 1 (opposite) included lack of social support (65%) , no time for leisure (60%), overwork (51.3%) and financial constraint (50%).

The coping strategies to occupational stress as detailed in Table 2 included inspiration from religious belief (78.8%), acceptance of reality of stress (58.8%) and humour (56.3%).

Discussion

The fact that most respondents were males is actually expected as most of the medical practitioners in the hospital were males. The respondents were also predominantly Yorubas. This is in keeping with the fact that the community is a Yoruba community. All cadres of medical practitioners in the hospital were interviewed thereby reducing cadre related bias to its barest minimum.

Health professionals often report high levels of work related stress with attendant costs to the individual and the community particularly in the medical and nursing profession.(16) Stress is an important issue for health care professionals as it adversely affects the well being of the physicians and quality of health care.(17) Many medical practitioners have personality traits, such as being self-critical, which can predispose them to stress.(18) In this study lack of social support was a leading job stressor. Social support serves as a buffer to protect people from health problems due to excessive stress.(19) thus offering social support to medical practitioners will go a long way in reducing stress related to their occupation thereby enhancing their productivity. Studies have also established that poor social support from colleagues and supervisors have contributed to work-related stress and anxiety.(20,21,22,23) Fry also reported that as social support increased, job stress decreased.(24) Increased workload was identified as a job stressor in this study, this tallies with the findings of some other studies by Shorupa et al and Jagdish (25,7) Two Iranian studies by Soleiman et al and Naiemey et al also established heavy work load as a job stressor.(19,26) Long working hours had also been identified as a factor contributing to work related stress.(27)

It is not surprising that financial constraint was identified as a job stressor in this study in view of the fact that the agitation of doctors for introduction of a medical salary scale and medical super salary scale is yet to be met by the Federal government. It is however encouraging that only a few of the respondents attributed their source of stress to conflict with supervisors. This shows that a healthy relationship and good rapport exists between senior doctors and their junior colleagues in the hospital. This finding however contradicts that of Lyn in the United Kingdom in which 37% of the doctors interviewed reported been bullied the previous year.(28)

Lack of sleep as a job stressor could be explained by the fact that all doctors in the hospital took call duty, during which some of them worked

SOURCE OF STRESS	YES (FREQUENCY/%)	NO (FREQUENCY/%)
Lack of social support	52(65%)	28(35%)
No time for leisure	48(60%)	32(40%)
Over work	41(51.25%)	39(48.75%)
Financial constraint	40(50%)	40(50%)
Lack of sleep	35(43.75%)	45(56.25%)
Separation from families	30(37.5%)	50(62.5%)
Pressure from patients' relatives	30(37.5%)	50(62.5%)
Pressure from patients	28(35%)	52(65%)
Decision making	24(30%)	56(70%)
Conflict with supervisor	10(12.5%)	70(87.5%)

TABLE 1 : SOURCES OF OCCUPATIONAL STRESS

STRATEGIES	YES (FREQUENCY/%)	NO (FREQUENCY/%)
Inspiration from religion	63(78.8%)	17(21.2%)
Acceptance of stress	47(58.75 %)	33(41.25%)
Humour	45(56.25%)	35(43.75%)
Professional association	35(43.75%)	45 (56.25%)
Denial	14(17.5%)	66(82.5%)
Alcohol consumption	4(5%)	76(95%)

TABLE 2 : COPING STRATEGIES TO STRESS

throughout the nights thus depriving them of sleep. The call duty does not exclude the doctors from normal duties the following morning.

As shown in this study, decision making was a job stressor. The strain of working day in day out coupled with having to take responsibility for critical decisions and the attendant pressure to avoid mistakes are among the job conditions that rendered medicine inherently stressful.(29) However if the individual is adequately supported in the process of taking decisions, it could be less stressful. Happel et al reported that forensic nurses had lower levels of burn out and higher job satisfaction than their counterparts from mainstream services, this was attributed to greater involvement in decision making and better support among forensic nurses.(30) The fact that few of the respondents took to alcohol is quite commendable and it is in keeping with that of an Iranian study.(27)

Employees whoare stressed are likely to have decreased productivity with adverse effects on the employer's desired result. Learning how to deal with and manage stress is critical to maximizing job performance, and maintaining physical and mental health.

Conclusion and Recommendation

The main job stressors were lack of social support, no time for leisure, over work and financial constraint. The coping strategies were mainly inspiration from religious belief, acceptance of reality of stress and humour.

RECOMMENDATION

1) Orientation programme for newly employed staff should include discussion on occupational stress management.
2) There is need for introduction of an occupational stress management workshop geared towards sources of stress and coping strategies.
3) There is need to create recreational facilities within the hospital where members of staff can relax during their leisure period.
4) The Federal government should introduce a medical salary scale and medical super salary scale so as to reduce financial constraint as a job stressor among medical practitioners.
5) Medical practitioners should offer social support to one another so as to reduce stress amongst them.

ACKNOWLEDGEMENT
Special thanks to the respondents for graciously accepting to participate in this study. The contribution of my medical officers to this work is hereby acknowledged. Finally I glorify God for a successful completion of this study.

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Ocular findings of sickle cell eye disease patients in Owo: An exploratory study

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ABSTRACT

Aim : This study was designed to assess the ocular findings of sickle cell disease patients attending the Haematology clinic of Federal Medical Centre, Owo, Ondo State, Nigeria.

Methods: This study was conducted at the haematology and eye clinic of the hospital between June, 2008 and June, 2009.The respondents were interviewed with the aid of a semi-structured questionnaire. All the respondents had detailed ocular examination. The information obtained with the aid of the study instrument was analyzed with Statistical Package for Social Sciences (SPSS) statistical software version 15.0.1.

Results: The 30 respondents comprised of 14 males (46.7%) and 16 females (53.3%). Most respondents had HbSS genotype: 27 (90%) and the remaining 3 (10%) had Hb SC genotype. The majority of the respondents: 26 (86.7%) had conjunctiva signs. Most respondents: 25 (83.3%) had normal retina.

Conclusion: Most respondents had conjunctiva signs while only a few of them had retina signs. It is recommended that sickle cell disease patients should have a detailed ocular examination at least once a year.

Key words: Sickle cell disease, ocular findings, Nigeria

Introduction

Many heamoglobinopathies exist; those resulting in proliferative retinopathy are limited to sickle cell disease. Sickle cell haemoglobinopathy encompasses a group of inherited genetic disorders which cause erythrocytes to become sickled and affect multiple organ systems. The rigid sickled erythrocytes lead to vascular occlusion which results in retinal hypoxia, ischaemia and neovascularisation. If these series of events do not stabilize or reverse with recanalization of the occluded retinal vessels, the subsequent end stage results may be retinal infarction and /or detachment. Sickle cell haemoglobinopathies all share the common feature of an abnormal globin chain which leads to sickling of erythrocytes and obstruction of the microcirculation.(1) Sickle cell disease is an important cause of morbidity and mortality in childhood.(2,3) Sickle cell disease has varied manifestations in all systems of the body. Ocular manifestation can be severe and sudden blindness may result amidst other complications.(4) Sickle cell disease patients are known to manifest different types of ocular problems. These problems include proliferative and non-proliferative retinopathies. All ocular complications of sickle cell disease can be attributed directly or indirectly to vaso-occlusions.(5,6) These vaso-occlusions depend on the degree of blood viscosity which is proportional to the rate of sickling and haemoglobin concentration.(7) Sickle cell retinopathy is increasingly being recognized as a cause of significant ocular morbidity and blindness in Africa south of the Sahara.(8) The incidence of proliferative retinopathy in sickle cell disease patients varies from 5% to 10% depending on the genotype being commoner in SC than SS and S thalasaemia.(9) Treatment of retinal damage arising in patients with HBS haemoglobin

particularly among young people with double heterozygous disease(SC) is largely unavailable to patients in sub-Sahara Africa except at the major centres. An early screening and management programme for retinal damage related to SC would reduce ocular complications and optimize visual efficiency in these young active patients.(10) In view of the above, this study was designed to determine the ocular findings in patients with sickle cell disease presenting to the Haematology clinic of Federal Medical Centre, Owo.

Methods

This study was conducted over a one year period between June, 2008 and June, 2009. All sickle cell disease patients presenting to the Haematology clinic during the study period were enrolled into this study. Ethical clearance was obtained from the Ethical Review Committee of the hospital prior to commencement of the study. Informed consent was obtained from all the respondents. The respondents were interviewed with the aid of A semi-structured questionnaire by the authors and three trained research assistants. The information obtained from the respondents included their bio-data and their genotype. All the respondents had a detailed ocular examination performed by the author for correspondence at the eye clinic of the hospital. Visual acuity was assessed with the aid of Snellen's chart. All the respondents also had dilated fundoscopy performed with the aid of direct ophthalmoscope. The data obtained with the aid of the study instrument was collated and analyzed with the aid of Statistical Package for Social Sciences (SPSS) software version 15.0.1. Relevant policy implications were then drawn from the findings.

Results

Thirty respondents participated in this study. The ages of the respondents ranged from 14-44 years with a mean age of 26 years ± 8.4 years. The respondents comprised 14 males (46.7%) and 16 females (53.3%). Most of the respondents were single: 24 (80%) and the remaining 6 (20%) were married. The majority of the respondents: 27 (90%) were Yorubas while 2 (6.7%) were Ibos and the remaining: 1 (3.3%) belonged to a minority ethnic group. The occupation of the respondents as detailed in Table 1 revealed that the majority of the respondents: 17 (56.7%) were in school. Most respondents were Christians: 23 (76.7%) and the remaining 7(23.3%) were Muslims. The level of education of the respondents revealed that 1 (3.3%) had no formal education, 2 (6.7%) had primary education, 15 (50%) had secondary education and 12 (40%) had tertiary education. Most respondents: 27 (90%) had Hb SS genotype while the remaining: 3 (10%) had Hb SC genotype.

Ocular findings of respondents: All the respondents had a vision of 6/5-6/18 in their better eye. The vision in the second eye is as shown in Table 2. Only 3 (10%) had refractive error while the remaining 27 (90%) were emmetropic.

The conjunctiva findings of the respondents revealed that 4 (13.3%) had normal conjunctiva,10 (33.3%) had icteria, 8 (26.7%) had tortuous conjunctiva vessels and the remaining 8 (26.7%) had icteria and tortuous conjunctiva vessels. The fundoscopy findings revealed that 25 (83.3%) had normal fundus, 3 (10%) had tortuous retina vessels, 1 (3.3%) had optic neuritis and the remaining 1 (3.3%) had primary open angle glaucoma.

Discussion

The fact that the respondents were predominantly Yorubas is expected in view of the fact that the community is a Yoruba community. Christianity being the predominant religion among our study population is also in keeping with the predominant religion in the community. The relatively young age of our respondents also contributed remarkably to schooling being the predominant occupation in this study.

The fact that most of our respondents had SS haemoglobin genotype is not surprising and it is in keeping with the finding of another Nigerian study by Akinsola et al which reported that majority of their respondents (88.9%) were of Hb SS genotype.(4) Though ocular manifestations of sickle cell eye disease can be severe enough to lead to blindness which could even be of sudden onset, most of our respondents had good vision. The relatively good vision especially in the better eye among most of our respondents is a pointer to good ocular health in the study population. This finding is likely to be related to the fact that few of the respondents had Hb SC genotype which is more often associated with ocular morbidity. However, one of the respondents was blind in the second eye and our finding is in tandem with that of a similar Nigerian study which reported that 96% of their study population had normal vision.(4) The finding of the latter study and that of our own is also to a large extent in agreement with a study done by Meurs in Netherlands which reported that 4% of their study population had monocular blindness and 6% of those with HbSC genotype were blind in one eye.(11) Though ocular changes in sickle cell anaemia was first described by Cook, (12) other investigators have looked at the sickle cell eye disease. However in view of the fact that no similar study had been carried out in this hospital the need arose for us to assess the ocular findings of sickle cell disease patients.

Most of our respondents had conjunctiva signs and this is in keeping with the finding of Obikili et al in Jos in which 77% of their 78 homozygous sickle cell HbSS patients had conjunctiva signs .(13) Our finding and that of the latter study are at variance with another study done by Kate et al in India which reported the prevalence of conjunctiva signs of 26 % in their study population .(14) Another Nigerian study reported that 49.5 % of their study population had conjunctiva signs.(4) Al-Salem in a study carried out in Jordan reported that 14.8% of their 54 respondents had mild conjunctiva signs which disappeared after blood transfusion.(15) A study done in the Democratic Republic of Congo by Kaimbo et al reported that 32% of

Occupation	Frequency	Percentage (%)
Schooling	17	56.7
Artisan	4	13.3
Applicant	3	10
Teaching	2	6.7
Civil service	3	10
Trading	1	3.3
Total	**30**	**100**

Table 1: Occupation of the respondents

Visual Acuity	Frequency	Percentage (%)
6/5-6/18	26	86.7
6/18-6/60	3	10
≤3/60	1	3.3
Total	**30**	**100**

Table 2: Vision in the second eye

the study population had conjunctiva signs.(16)

Sickle cell vaso-occlusive events can affect every vascular bed in the eye often with visually devastating sequelae in advanced stages of the disease. In view of the fact that sickle cell eye disease can go undetected especially at the initial stage, it is advised that sickle cell disease patients should have a careful ocular examination performed by an Ophthalmologist at least once in a year. None of our respondents had proliferative sickle cell retinopathy and this finding is in tandem with another Nigerian study.(4)

The main limitations of this study include the relatively small sample size, non-utilization of binocular indirect ophthalmoscope and the fact that fluorescein angiography was not performed as it was not available, thus some posterior segment changes could have been missed. This brings to the fore the need to validate the findings of this study by carrying out similar studies in this part of the world with a larger sample size and in bigger centres with facility for fluorescein angiography.

Conclusion and Recommendation|

Most of the respondents had conjunctiva signs while retina change was very rare. No patient had evidence of proliferative sickle cell retinopathy.

Recommendation

1) There is need for an annual routine ocular examination of sickle cell disease patients.
2) Similar studies should be done with a larger sample size so as to validate the findings of this study.

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Introducing Community Skilled Birth Attendant Programme in Bangladesh: An Assessment from Clients' Perspectives

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ABSTRACT

The government of Bangladesh introduced the community based skilled birth attendant (CSBA) programme in 2003 to ensure safe motherhood. Although CSBA programme is in action in different areas of the country, an attempt was made to assess the activities of CSBAs from the clients' perspectives. This study was conducted with 100 clients in Maniknagar district. The results showed the majority of the clients were not registered by CSBA at the first month of pregnancy. All the clients did not receive ANC, delivery and PNC services from the CSBAs. There were wide variations in regard to necessary advice for care during pregnancy, delivery and the postnatal period including neonatal care, and family planning services. This study suggested that to generate effective and expected outcomes, consideration should be given to strengthening training, widening the CSBA programme, ensuring availability of weight machines, providing surgical efficiency of CSBAs, ensuring blood and urine checking instruments and supplying necessary drugs and equipment.

Keywords: community, skilled birth attendants, assessment, clients' perspective, Bangladesh

Introduction

Maternal mortality has been defined as the death of a woman while pregnant or within 42 days of termination of pregnancy from any cause related to the pregnancy (WHO, 2004a). Till now, maternal mortality is a major public heath concern all over the world. Evidence suggests that every year more than 500,000 mothers die (Hill et al, 1995; WHO, 2003), of which a quarter to a third of all deaths is the result of pregnancy-related complications (WHO, 2000). Most of these deaths occur at home during the first postnatal or postpartum week, especially within the first 24 hours of birth. Most occur in developing countries with weak or failing health systems, with South Asia and sub-Saharan Africa being especially hard-hit (Darmstadt et al, 2005; Freedman et al, 2005; WHO, 2005). Data in Bangladesh reveals that the maternal mortality ratio is 3.2/1000 live births and 60% of deaths occur at home; mostly during and immediately after childbirth. The estimated lifetime risk of dying from pregnancy and child birth-related causes is about 100 times higher than that in developed countries (NIPORT 2003). Also the tragic consequence of such deaths is that about 75% of the babies born to these women are also likely to die within the first week of their life (WHO, 2004b). Every year, an estimated four million babies die in the first four weeks of life, and a similar number of babies are stillborn in the world.

The major causes of maternal deaths in Bangladesh include postpartum haemorrhage, eclampsia, and complications of unsafe abortion, obstructed labor, postpartum sepsis and violence and injuries (MOHFW, 2004). Data show that nearly 25% of mothers die due to abortion complications (MOHFW 2004). A study on safe motherhood programmes in Bangladesh assessed that women's low status in society

poor quality of maternity care services, lack of trained providers, low uptake of services by women, as well as infrastructure and administrative difficulties, contribute to the high rate of maternal deaths (Haque et. al. 1997). It should be noted that haemorrhage is also the leading cause of maternal deaths worldwide (AbutZahr, 2003; Khan et al, 2006). Of the 14 million women who suffer severe postpartum haemorrhage every year, 140,000 die, and 1.6 million survive with long-term disability due to anaemia (Ronsmans, 2000). Response to postpartum haemorrhage is time-sensitive. Yet, more than 60 million women give birth at home, mostly in developing countries and in underserved areas, attended by family members, neighbors, or traditional birth attendants (TBAs) (Stanton et al, 2006). These care givers are usually ill-equipped to identify and manage post partum haemorrhage, and rates of referral to more expert care are often low, even where referral is possible (Jahn and De Brouwere, 2001).

In response, the international community is increasingly becoming interested in effective ways to strengthen health systems and improve availability and utilization of health services through greater official development assistance for health. At present, there is a growing focus on the skilled birth attendant, particularly the trained midwife, as the cornerstone of renewed global efforts to reduce maternal mortality (Koblinsky et al, 2006). The idea that trained TBAs can reduce maternal mortality led to controversy over their training in relation to safe motherhood and a policy shift to skilled birth attendance (Maine, 1993; Starrs, 1998; Bergstrom and Goodburn, 2001). However, the success of the World Health Organization's encouragement is that there is rapid increase in the number of countries undertaking TBA training. For example, only 20 countries had TBA training programmes in 1972 but it is now estimated that 85% of developing countries have some form of TBA training (Fleming, 1994). However, the problem remains as the access to skilled birth attendants is limited, particularly in countries with the highest maternal mortality. Data show that only 32% of births in sub-Saharan Africa and 35% in South and Southeast Asia, the regions with the highest maternal mortality, are attended by a skilled providers (doctor, nurse, or midwife) which is in stark contrast to universal or near universal use of skilled birth attendants in the developed world (Koblinsky et al, 2006).

In order to achieve the Millennium Development Goals (MDGs) for maternal mortality reduction, one of the objectives is to increase skilled health providers at birth from 13% in 2001 to 50% in 2010. It is relevant to note that in the current context, the delivery of maternal health care services is one of the most critical issues not only in developing countries but in Bangladesh. Within the most sensitive and important indicators of human development, maternal mortality has attracted much attention. However, still there are many problems regarding maternal health care. For example, in Bangladesh, almost two in three births are assisted by dais (untrained traditional birth attendants) and one in eleven is assisted by relatives or friends in an unhealthy environment. Doctors, trained nurses, or midwives assist at the birth of only very few babies - estimates suggest 13% of births. Other midwifery trained health providers assist in another 14% (BDHS, 2004). Estimates show that only one in ten births in Bangladesh takes place in a health facility. Care after birth is equally inadequate (18% of mothers receive PNC). Among mothers who do not give birth at a health facility, only 8% receive postnatal care. The likelihood of receiving PNC for mothers has improved only slightly, from 14% in 1999-2000, to 18% in 2004 (BDHS, 2004).

Overview of CSBA programme in Bangladesh

Different studies identified that skilled attendance during labor, delivery and in the early postpartum period could prevent many of these deaths, though establishing a causal link between skilled attendance and maternal survival remains problematic (WHO, 2003; Liljestrand, 2000; Graham et al, 2001; Donnay, 2000). A Skilled birth attendant (SBA) is someone who is trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns (WHO, 2004c). It is relevant to note that the Bangladesh Government could not ensure enough institutional and well organized facilities for safe motherhood instantly, especially in our rural areas where 80% of the maternal mortality. An EOC facility at sub-district level reached up to 123 sub-districts out of 469. Besides, communication facilities, accessibility to service centers and financial ability of rural people are not at satisfactory levels. Due to these factors, the possibility of 100% institutional delivery in Bangladesh within 10-15 years is bleak (MOHFW 2003).

With a view to reducing the maternal and child mortality and morbidity, comprehensive programme efforts have been made over the past years with increasing access to health care services especially emphasizing human resource development. Maternal and child health (MCH) services have been given highest priority in the health system. Within the continuum of change, traditional birth attendants (TBAs) have been trained to provide better services at home compared to relatives and untrained traditional birth attendants. But in the last decades such training could not change the maternal health situation much. As a result, the Government of Bangladesh along with its development partners took the decision to introduce Skilled Birth Attendants (SBA) in the community. To complement the facility approach to obstetric care, a skilled birth attendant strategy was initiated in 2001 with guidance from the World Health Organization (WHO) and UNFPA. The skilled birth attendants (SBAs) are to provide normal safe delivery at homes and referral to the EOC sites, if needed. Drawing from

the pool of 24,000 field-based female health and family-planning workers, the Government of Bangladesh (GoB) began training of community SBAs (CSBAs) for six months at the district level.

At the initial stage, a pilot project was implemented in six sub-districts/ Upazillas. The selected sub-districts were Daudkandi, Sakhipur and Banaripara Upazilas of Comilla, Tangail and Barishal Districts respectively (Halim MA and Parveen, 2003). Under this programme, FWV and FWA were trained with knowledge of and selected skills of performing ANC, delivery, PNC, NNC and identifying referring obstetric complications. Almost all CSBAs are neighbors to the clients and domiciliary service is an important part of their service so that clients have easy and time saving facility to access for home based services. In total, 90 CSBAs were dispersed into the stated 6 sub-districts. Later it was extended to a regular programme following the success of the pilot project taking all sub-districts in 19 different districts. Recently, it has been extended to 258 sub-districts in 44 districts. By the end of 2007, about 3,000 had been trained; a further 1,000 are to be trained yearly to achieve complete coverage, theoretically in a decade.

The CSBAs are basically field workers of both health and family planning departments. They provide domiciliary services to the pregnant women. The main working steps of CSBA are registration, health care and follow-ups. That is to say, the first duty of a CSBA is to list pregnant women, record the probable delivery date and to provide advice to pregnant mothers regarding vaccination, nutrition and safe delivery. CSBAs are obliged to provide at least three antenatal visits, to conduct safe delivery at home and to provide postnatal visits. If complications arise due to pregnancy, CSBAs are responsible for referring the client/clients to upper levels of the health system. Organizing motivational meetings and post natal family planning are also important parts of a CSBA's responsibility. Family planning visitors (FWVs) at union level (immediate lower level from that of sub-district level) are designated as clinical supportive supervisors of CSBAs with responsibility to provide supervision through review meetings and direct observation during service provision and also to report to MoHFW on CSBA performance. Certain logistics for the CSBAs such as the delivery kits, essential medicines, gloves, IP logistics, printed pantograph, recording and reporting forms etc., are supplied to CSBAs through the established system under DGHS (Directorate General of Health Services) and DGFP (Directorate General of Family Planning).

Pregnant women in different areas of the country are being assisted by such initiatives and being covered increasingly; however, there is almost no information or there is paucity of information regarding performance of CSBAs, i.e., whether the CSBA programme is running well, or whether it needs further input to effectively provide safe motherhood services. More importantly, the assessment of CSBAs' performance is almost absent from clients' perspectives although they are the main beneficiary of this programme. Under theses backdrops, this study aimed at assessing the activities of community birth attendants (CSBAs) and providing policy recommendations for further improvement of the CSBA programme so as to ensure better pregnancy outcomes.

Methods

Participants

The participants of this study were 100 conveniently selected clients. The criterion for selecting the sample population was married women who had a child for at least two months during the study period. The mean age of the participants was 26 years (SD=3.25 years) (Table 1). The majority of participants (65.0%) were 20-25 years of age. Around one-quarter of participants (19.0%) were 26-30 years of age while 5.0% and 11.0% of participants had respectively <20 and 31-35 years of age. More than four-fifths of the participants (85.0%) had some years of formal education. Of these, 43.0% had 6-10 years of formal education and 40.0% had primary education (1-5 years). Most of the clients were housewives (95.0%) and 5.0% were service holders. The mean annual income of the participants' family was 55,600 BDT (SD=12,250). Two-fifths of clients reported their annual income to be 20001-40000 BDT. Cumulatively, two thirds of clients' families had an annual income of 20001- 60000 BDT which ranges slightly less than 2000 to 5000 BDT when translated into monthly income. However, annual income more than one lakh was also reported by 15% of clients.

Study Area

This study was conducted at different unions under Harirampur sub-district. The study areas were selected applying multi stage sampling method. At first, Maniknagar district was selected from Dhaka division. At the second stage, Harirampur sub-district was selected randomly from Maniknagar district. At the final stage, three unions out of seven unions covered by CSBAs were selected for the study, out of 13 unions, 5 unions are out of health or family planning infrastructure. It should be noted that Harirampur sub-district is completely a typical village area where there are no modern amenities for its people. Most of the people do no have electricity. The area of Harirampur has 16034500 populations and it covers 245.42 square kilometers. Almost 40% of total land is char area. Adult literacy rate is only 30%. Two-fifths of the population, at this locality, live under the poverty line (less than 1 dollar per day). Many of the health and family planning facilities are vacant.

Instruments

A semi-structured questionnaire was applied to collect the information relevant to the study objectives. It should be noted that the final data collection tool was developed using a step by step process. At first, the primary questionnaire was developed based on the literature and in consultations with the experts in the CSBA program. Before finalizing the

Background characteristics	Number	Percentage
Age at present (mean=26, SD=3.25)		
<20 years	5	5.0
20-25 years	65	65.0
26-30 years	19	19.0
31-35 years	11	11.0
Education		
No Education	15	15.0
1-5 years	40	40.0
6-10 years	43	43.0
>10 years	2	2.0
Occupation		
Housewife	95	95.0
Service	5	5.0
Annual family income (Mean=55,600 BDT, SD=12,250)		
20001-40000 BDT	40	40.0
40001-60000 BDT	27	27.0
60001-80000 BDT	13	13.0
80001-100000 BDT	5	5.0
>100001 BDT	15	15.0

Table1: Participants' background characteristics

questionnaire, a pilot test was also carried out among 5 potential participants. Based on the insights of the pilot test, the questionnaire was finalized. The questionnaire included several parts. Part one included background characteristics of the participants (age, education, occupation and family income). Part two included safe motherhood services provided by CSBAs (ANC services, delivery services, PNC services and advice related to safe motherhood). The third part was an open-ended part that asked about the advantages and limitations of the CSBA program so as to provide guidelines to improve the performances of CSBAs.

Procedure

Prior to collecting data several preparatory tasks such as recruitment and training of the data collectors or interviewers, and building up 2 field research teams, were ensured. Each team included 4 females as interviewers and 1 male supervisor for monitoring data collection. Both data collectors and supervisors had 20- 25 years of age with minimum schooling of Secondary School Certificate (SSC) to maximum schooling of graduation. The participants were identified with the assistance of local family planning assistants (FWAs) and family planning visitors (FWVs). Prior to interview, oral informed consent was taken from all the participants. The participants were briefly informed about the study. In total, 110 eligible women were approached but 10 of them refused to take part in the study resulting in a 90.09% success rate. To maintain the confidentiality of the study subjects, a unique identification number was used instead of the name of participants. The interviewers took part in a face to face interview at the participant's home. On average, the interviewers interviewed five participants in each day. The team leader (field supervisor) monitored the interview and edited the questionnaire after the data collection so that inconsistencies could be corrected at the field level. On average, each interview lasted for 30 minutes. The main fieldwork took place in April, 2008.

Data Analysis

To accomplish necessary editing and coding, data were entered into a computer using SPSS for Windows 12 version. The rearrangement of data and collapsing of data where necessary was also conducted to prepare data for the final analysis. Data were analysed at univariate level, i.e., frequency and percentage was distributed with different variables. In order to summarize the characteristics of participants, frequency was distributed against some background characteristics of the participants (presented in Table 1). To assess the activities of CSBAs, frequency was distributed against different safe motherhood services and advice provided by CSBAs (times of registration, number of ANC visits, TT injection, ANC advices, delivery advice, delivery conducted by, PNC visit and PNC advice), and advice regarding family planning, newborn care and nutritional advice, and vaccination services

(presented in Tables 2, 3 and 4). These performance indicators were selected to assess the activities because CSBAs are responsible for providing these services to the clients. The assessment was carried out based on the performed activities against the activities that they are responsible for. The frequency was distributed against advantages of and necessities to strengthen CSBA programme from the clients' perspective so as to understand the differences between CSBA and other non-trained providers, and to assess the needs to strengthen the CSBA programme (presented in Table 5).

Results

Services during Pregnancy and Delivery

It appeared that a very small percentage of participants were registered at the first month, i.e., only 2% of clients (Table 2). Less than two-fifths and more than half of the participants were registered at respectively the 2nd and 3rd months of pregnancy. Six percent of participants were not registered at all. Three ANC visits were not reported by all the participants, i.e., 69% were visited three or more times during pregnancy. Single and two visits were respectively reported by 14.0% and 13.0% of participants, yet 4.0% of participants had not been visited during pregnancy. CSBAs did not cover all the pregnant women in providing TT injection. Four-fifths of the participants were covered with TT injection during pregnancy. During the ANC visit, CSBAs provided advice to clients in order to keep mothers healthy during the antenatal period and ready for a normal as well as healthy outcome of delivery. The highest emphasis was given by CSBAs on more nutritious food and drinking (94.0%). Avoiding heavy work was noted by 44% clients while enough rest was reported by 41% clients. To wear easy and comfortable cloths, avoid long journeys at the first and last 3 months, and careful intercourse at specific periods were also reported by respectively 7%, 2% and 1% clients.

CSBAs provided different advice for the delivery (Table 3). The most emphasis was given on early communication with skilled birth attendants or SBAs (84.0%) followed by an open and clean room (71.0%), preparation for necessary equipment (59.0%), financial preparation (42.0%), preparation for vehicle (35.0%) and managing and preparing a blood donor (5.0%). However, 2% of clients also reported they did not get any such advice from CSBAs. More than two-fifths of the deliveries (43.0%) among the participants were conducted by CSBAs. TBA, relatives, doctors and FWV/nurses respectively conducted 29.0%, 12.0%, 9.0% and 7.0% of deliveries.

Services after Delivery

Although every CSBA is required to visit all the women in the locality immediately after delivery, it was observed that the PNC visit was not universal (Table 4). Still, 7% of women were not covered by CSBA. The most common advice for post natal care was to attend hospital quickly if any complication arises (67.0%). Extreme breastfeeding up to six months, personal hygiene, breast sucking by baby and rapid consultation with doctor was respectively reported by 59.0%, 23.0%, 21.0% and 21.0% of participants. More than half of the clients did not get both the advice and service of family planning, i.e., 48.0% clients received advice and service in this regard. Forty percent received only advice and ten percent received only services but two percent neither received advice nor service of family planning.

Regarding newborn care and nutrition advice, 65.0% received advice for umbilical care (Table 4). Advice for extreme breastfeeding up to six months was reported by 46.0% of participants. No bath for 3-4 days, feeding colostrum first, use of soft and comfortable cloths and no out sourced food for the new born were respectively reported by 32.0%, 6.0%, 4.0% and 18.0% of the participants. Besides, sucking two breasts equally, feeding with comfortable angle for both and no suggestion was respectively reported by 7.0%, 3.0% and 2.0% of the participants. More than four-fifths of the participants reported that the vaccination by CSBAs was regular; however 2% of them reported that vaccination was irregular. More than one-tenth of participants (12.0%) did not take any vaccination while 1.0% did not know about the vaccination.

Advantages of and Needs for CSBA Programme

The advantages of the CSBA programme from the clients' perspectives are summarized in Table 5. The biggest advantage is the availability of a provider through domiciliary service reported by 76% of clients. Early access to service was also mentioned by the clients as another advantage of the CSBA programme. Besides, instant problem solving scope, scope of advice over phone and cost and time saving were respectively noted by 44%, 28%, 23% and 20% of clients as advantages of the CSBA programme. Although the CSBA programme reduces many obstacles in client friendly services, participants mentioned that it still has some limitations that need to be met. More than one-third of participants (36.0%) emphasized the training of the CSBAs in order to strengthen and make the programme more effective. Emphasis was also put on strengthening and widening the CSBA programme by 26.0% of participants. Availability of weight machine, surgical efficiency of CSBAs, blood and urine checkup facility in the domiciliary and more supply of drugs and equipment were respectively reported by 23.0%, 21.0%, 8.0% and 21.0% of the participants.

Discussion

This study aimed at assessing the activities of community skilled birth attendants from clients' perspectives and providing recommendations so that services of the CSBA programme can be further improved. The findings of this study revealed that to some extent clients were registered by the CSBAs at the first month, although the responsibility of the CSBA is to register all the cases at the first month of pregnancy.

Variables	Number	Percentage
Time of registration		
At 1st month of pregnancy	2	2.0
At 2nd month of pregnancy	37	37.0
At 3rd month of pregnancy	55	55.0
Not registered	6	6.0
Times of ANC given by CSBAs		
Once	14	14.0
Twice	13	13.0
Thrice and more	69	69.0
Not given	4	4.0
TT injection		
Yes	80	80.0
No	20	20.0
ANC advice*		
More nutritious food and drinking	94	94.0
Avoid heavy work	44	44.0
Enough rest	41	41.0
Easy and comfortable clothes	7	7.0
Avoid long journey in 1st and last 3 months	2	2.0
Intercourse with care at specific periods	1	1.0

*Multiple response set

Table 2: Antenatal care services and advice provided by community skilled birth attendants

Variables	Number	Percentage
Safe delivery advice*		
Communicating earlier with skilled birth attendant	84	84.0
Open and clean room	71	71.0
Preparation for necessary equipments	59	59.0
Financial preparation	42	42.0
Preparation for vehicle	35	35.0
Know blood group and ready a blood donor	5	5.0
Not given	2	2.0
Delivery conducted by		
CSBA	43	43.0
Village TBA	29	29.0
Relatives	12	12.0
Doctor	9	9.0
FWV/Nurse	7	7.0

*Multiple response set

Table 3: Delivery services and advice provided by community skilled birth attendants

Variables	Number	Percentage
PNC visits by CSBAs		
Yes	93	93.0
No	7	7.0
Advice for post natal care*		
Personal hygiene	23	23.0
Breast sucking by baby	21	21.0
Rapid consultation with doctor	21	21.0
Sending to hospital rapidly	67	67.0
Extreme breast feeding up to 6 months	59	59.0
Advice for family planning		
Only advice	40	40.0
Only service	10	10.0
Advice and service	48	48.0
Not given	2	2.0
Newborn care and nutrition advice*		
Umbilical care	65	65.0
Extreme breastfeeding up to 6 months	46	46.0
No bath for 3-4 days	32	32.0
Feeding colostrum first	6	6.0
Use of soft and comfortable cloths	4	4.0
No outsource food	18	18.0
Sucking two breasts equally	7	7.0
Feeding with comfortable angle for both	3	3.0
No suggestion	2	2.0
Vaccination by CSBAs		
Regular vaccination	85	85.0
Irregular vaccination	2	2.0
Not taken	12	12.0
Not known	1	1.0

*Multiple response set

Table 4: Post natal care (PNC), family planning and vaccination services provided by community skilled birth attendant

Moreover, no registration at all, as this study found, suggests that clients may either seek no assistance during pregnancy or seek it from traditional birth attendants/relatives and hence still keep their life at risk due to the pregnancy. These findings also further suggest that strict monitoring of the CSBAs performance is required so that every client under the CSBA is registered and gets assistance at the right time to make pregnancy safer. In regard to the ANC service, this study revealed almost similar findings. As per the responsibility, CSBAs are responsible for visiting every case at least three times during pregnancy. However, the findings suggest that less than one-seventh of participants were visited three times while some were not even visited for antenatal care service. It is relevant to note that antenatal care (ANC) is an obvious time to receive birth-preparedness information (Koblinsky et al, 2008). As a result, preparation for safe delivery, with skilled birth attendants and readiness for emergency obstetric care, remains under extensive threat for pregnant women. Campbell and Graham reiterate that intrapartum care is the most promising strategy for reducing maternal mortality in time to achieve MDG-5 (Campbell and Graham, 2006).

The findings of this study revealed that more than two-fifths of the deliveries took place with the assistance of relatives and the village TBA. Although CSBAs conducted significant numbers of deliveries, deliveries by relatives/TBAs to

Advantages and Limitations of CSBAs	Number	Percentage
Advantages of CSBA programme*		
Early access to service	44	44.0
Instant problem solving scope	28	28.0
Availability of provider through domiciliary service	76	76.0
Scope of advice over phone	23	23.0
Cost and time saving	20	20.0
Needs for strengthening CSBA programme*		
Surgical efficiency of CSBAs	21	21.0
More training of CSBAs	36	36.0
Availability of weight machine to CSBAs	23	23.0
Blood and urine checkup facility at domiciliary	8	8.0
Strengthening and widening CSBA programme	26	26.0
More supply of drugs and equipments	21	21.0

*Multiple response set

Table 5: Advantages of and needs for strengthening community skilled birth attendant programme

this extent is not accepted where CSBAs are working. If this exists, the reduction of maternal mortality may not be expected because delivery by a skilled attendant is fundamental to reducing maternal death (Maine et al, 1997; Maine and Rosenfield, 1999). The dominating home delivery may be due to either clients not being aware of the CSBAs, clients do not feel the necessity of assistance of CSBAs, or CSBAs cannot motivate the clients to take assistance from trained providers during delivery or both. Whatever the reason may be, it indicates that such deliveries are at potential risk of poor health outcomes. A study found that the demand for skilled care corresponds primarily to the perception of complications (Koblinsky et al, 2008). Recent data in Bangladesh shows that awareness of danger signs is low but better for prolonged/obstructed labor (about 50% in both rural and urban areas) and tetanus (nearly 60% in both the areas) than for the primary killers - eclampsia (about 30%) and excessive bleeding (26% in urban areas and 20% in rural areas) (BDHS, 2004). As a result, the perception of pregnancy complications among women may be poor and hence service coverage and motivation of all the clients assigned to a CSBA may be the alternative option to take into consideration.

The findings of this study indicate that all clients do not get the necessary advice for taking care during pregnancy, during delivery and after delivery. Some get some advice whereas some get other forms of advice. Moreover, the findings indicate that advice varied to a great extent in regard to the problems (i.e., ANC services, deliver advices, postnatal advices, etc.). If the advice was common to all clients, there could be a collective consensus on some important issues for ensuring safe motherhood and that could have resulted in positive change of knowledge and perception among the pregnant women in the community. Instead different information to different clients may generate ineffective individual perception rather than collective consensus. The maldistribution of advice may be because of several reasons such as relaxing the duty of CSBAs on their own, inability to perceive the needs of clients all the time and clients' forgetfulness about advice. The findings also suggest that CSBAs may not be competent enough to provide the proper advisory services to the vast number of clients. In fact, the advice provided by the CSBAs are of great importance to prepare the clients for better delivery outcomes. A health worker shortage is one important barrier but inadequate competence among existing health workers may be equally important (Koblinsky et al, 2006), although there is debate on whether skilled birth attendants are competent or not (Harvey et al, 2007). Thus consideration should be given to providing some common suggestions to all the clients and building up competence among the CSBAs.

The findings of this study revealed that there are several advantages of the CSBA programme. For example, clients can have early access to CSBAs if needed. This is expected because community skilled birth attendants live in the community where the clients reside. As a result, it is time saving to the clients who need the safe motherhood services. Women often do not receive services due to longer distance between home and clinic. In a study, lower uptake of ANC services were found among women whose home was at greater distance from the clinic (Haque et al, 2009). This may be due to the poor road construction, time consuming distance, more financial outlay to receive care as well as the need of accompanying women to visit the clinic. In this regard, the CSBA programme is an excellent alternative for the clients. As rural women are mostly poor and have work within the family that prohibits them from going to the clinic to

receive services they need; such services are important to solve the problems instantly and hence women can utilize them without disrupting home work. More importantly due to the rapport with the service provider, clients can take the services over phone even if clients do not get to see the service provider physically.

The findings of this study also indicate that initiatives should be undertaken to equip the CSBAs better and hence increase their performance on safe motherhood initiatives. In this regard, surgical efficiency, more training and supply of drugs and equipment should be given emphasis. It must be kept in mind that earlier initiatives of training of traditional birth attendants did not fill its target to reduce maternal mortality. Birthing care requires skills and clinical judgment that come only with knowledge and practice. Questions that need to be addressed by policy-makers include whom to train, duration of training, and the numbers of births to be managed during that time for students to reach proficiency in required skills (Koblinsky et al, 2008). Optimistically, testing in both Nepal (Carlough and McCall, 2005) and Bangladesh (WHO, 2004d), relatively high levels of knowledge, skills, and performance for community skilled birth attendants were found. Thus, consideration should be given to imparting effective means and techniques among CSBAs to motivate clients to take delivery services from trained providers, provide necessaryand drugs and equipment to the CSBAs. In this regard, further studies are required to understand the effective means that can encourage CSBAs to motivate pregnant women to ensure better delivery outcomes.

Skilled providers can provide care for a larger number of patients simultaneously, and working hours are more regular. It is relevant to note that midwives in Matlab stated that they can en-sure safety, cleanliness, and availability of supplies, accommodate other work, facilitate referrals easier, and call on clinical colleagues and emergency transport if needed (Blum et al, 2006). However, numbers of providers is another problem to provide services for the vast number of clients. Evidence shows that in the public sector in Bangladesh, at the end of 2005, there were approximately 1,500 CSBAs trained and there is only one SBA in the community for every 500 births per year (MoHFW, 2005). Evidence from many developing countries also sug-gests that the sheer lack of staff and facilities is the most significant barrier to progress towards the increased use of skilled birth care. Where professional skilled care is limited, coverage gaps cannot be remedied without taking measures on the major health system issues such as increasing the supply of providers through training, providing incentives for trained providers to live and provide services in places of need, upgrading facilities and supply systems to ensure safe births, and ensuring the management capacity, policies, and regulations to support the providers.

Study Limitations

The findings of this study should be considered with several limitations. Firstly, as the samples were non-random, we cannot be certain that they represent all clients who got services from CSBAs in the study areas. Secondly, this study was also carried out on a limited number of clients without statistically determining the sample size. As a result, generalization of the findings of this study cannot be possible for all the CSBAs in Bangladesh, rather the findings should only be considered for the study sample. Finally, this study has taken only the views of clients into consideration. It is likely that clients forget the services provided by CSBAs so under-reporting of the services provided by CSBAs may be possible. Also due to only the clients' perspectives, a comprehensive picture of CSBA's activities may not be clear from this study, although this study will provide a guideline for further study.

Conclusion

The Government of Bangladesh introduced skilled birth attendants at the community level (CSBAs) to reach into households with services and messages on birth-preparedness (recognizing danger signs, where to go, and financing possibilities). However, the activities of community skilled birth attendants cannot be fully relied upon for achieving the Millennium Development Goals (MDGs) on maternal mortality by 2015. Although there are some advantages of the CSBA programme in ensuring better pregnancy outcomes, there are some problems that need to be considered for further improvement of CSBAs' activities and hence reduce maternal mortality. Consideration should be given to training of the CSBAs, supply of drugs and equipment, ensuring availability of weight machines, providing surgical efficiency of CSBAs, ensuring blood and urine checking instruments are available, strengthening monitoring of CSBAs' activities, imparting effective means and techniques among CSBAs and building competence of CSBAs to motivate clients. Without focusing on these issues, the activities of community skilled birth attendants may not be improved further.

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Household Products Survey - HAAD Poison and Drug Information Center

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Background

Many household cleaning products used in homes are actually considered to be health hazards. This is due to the fact that some of the chemicals needed to make the products effective are actually harmful to humans[1]. Some products which are highly corrosive chemicals, such as hydrochloric acid and hypochlorite bleach, are the key ingredients in toilet bowl cleaners. Ammonia and lye, ingredients of oven and carpet cleaners, (which are also corrosive) can cause burns to the skin and eyes and respiratory problems [1]. Furniture polish, which contains volatile petroleum distillates, can cause dermal and pulmonary toxicities[2].

The harmful effects of household products can be compounded by the fact that some products are not packed in proper protective packages or the content is being transferred by individuals from the original container to another misleading container (i.e. transferring liquid bleach or corrosive alkalis to an empty water bottle). This practice has increased the risk for the ingestion of corrosive substances. Furthermore, the presence of similarity in shapes between some household products and candy or sugar, such as moth balls, may encourage children to lick or even swallow them[3].

Exposures to corrosive household products represent one of the world's most common medical emergencies in childhood; however, the epidemiological properties and measures that are undertaken in order to prevent or at least minimize the harm, differ from country to country[3].

In the United States during the 1950s, physicians considered poisonings by common household chemicals and medicines the leading cause of injuries to children less than 5 years of age and from death certificates from states attributed almost 500 fatalities per year among children less than 5 years of age to ingestion of drugs and household products. These figures declined dramatically by 50% during the 1980's, and it was attributed to many factors, the most important of which are[4]:

- Conducting a statewide Poison Prevention Week (March18-24,1962)
- Passing of the Poison Prevention Packaging Act (1970), which required child-resistant packaging for many products.

During the 1980s in Turkey, authorities heeded advice to require standardization of the dilutions of corrosive agents which caused cases of corrosive oesophagitis to decrease; however, this health benefit was not maintained as new chemical agents for domestic cleaning were introduced to the market (which is unregulated in Turkey). As a result, within the last decade, the number of cases of corrosive esophagitis has begun to increase once more [3].

In Brazil, during the period 2000 and 2002, the Rio de Janeiro poison control centers received 13,429 calls involving human exposures. Of these calls, 2,810 (20.9%) were identified as unintentional poisoning due to household cleaning products[5]. Among the products involved in unintentional poisoning, bleach was the most reported across all ages. The others were petroleum derivates, rodenticides, pesticides, disinfectants, detergents, and corrosives. In all major categories of products involved in poisoning, children under the age of 5 years accounted for more than 70% of the reported incidents[5].

In India, 36% of the poisoning calls received involved children with the majority of exposures to household products, which represented 47% of all exposure[6].

In the UAE*, a nationwide epidemiological surveillance for exposures to household products is not currently available; however, statistical data from Abu Dhabi Health Authority's Poison and Drug Information Center (PDIC) in 2009 showed the following: while children were involved in 54% (32/59 cases) of all poison exposures, unintentional household ingestion by both children and adults represented ~ 17% (10/59 cases) of all exposures.

***These numbers only represent the collected data from Abu Dhabi that was reported to the PDIC. It is believed that the actual number is higher and the full picture in UAE cannot be extrapolated from it.**

Objectives of the Survey

In an effort to improve public safety in relation to accidental exposure to household products, the Health Authority Abu Dhabi Poison and Drug Information Center (HAAD-PDIC) conducted a random survey on commonly available household products in the Emirate of Abu Dhabi, with the following objectives to be achieved:

- Determine toxicity and other potential risks that may occur with exposure to these products
- Develop a library for these products and a database that can be used to quickly identify household products that are involved in accidental exposures.
- By the end of the project, a list of recommendations will be provided for the stakeholders such as the Municipality of Abu Dhabi City and the General Secretariat of Municipalities to help in the process of standardization and regulation of these products. The main objective is to make the use of these products safer for consumers.

Method

1. The most common household products in the Abu Dhabi market were surveyed; those in Abu Dhabi cooperative markets, Carrefour, Al Falah plaza, Emirates for Discount, Dirham plaza and Al Mina Souk.
2. One hundred and twenty six products were randomly collected, 100 of which were randomly selected in a balanced way to cover all different household classes:
a. Surface disinfectants/Cleansers
b. Bleaching agents
c. Detergents
d. Miscellaneous items (drain openers, toilet deodorizers, toilet cleansers, etc.)
e. Cheap detergents and cleansers in the market.
f. Hair strengtheners, coloring and hair removal products.
g. Cleaning Wipes
h. Pesticides and rodenticides
i. Moth balls 3. A referral database that includes information on all the products was created.
4. The pH was tested for those products that are liquid or semi-solid forms, using PH papers to identify corrosive substances and the results were entered into the database.
5. Our survey included screening all the selected products (100) to see whether the packaging is proper and not easily opened by children (child resistant).
6. All labels were also checked for clarity and completeness of information provided in both English and Arabic languages:
- Purpose of use
- Proper instructions for preparation
- Storage conditions.
- Presence of contact numbers
- Presence of safety measures such as:
(1) Warning messages to the consumer in regard to the risk of mixing more than one product
(2) Keep away from children
(3) Avoid exposure to the eye, skin or ingestion
(4) How to provide first aid in case of accidental exposure?

Findings

Corrosive Household products

Our survey found that out of the 66 products (liquids and semi-solid products) that were tested by the PH papers: 25 products (~38%) are corrosives (Figure 1).

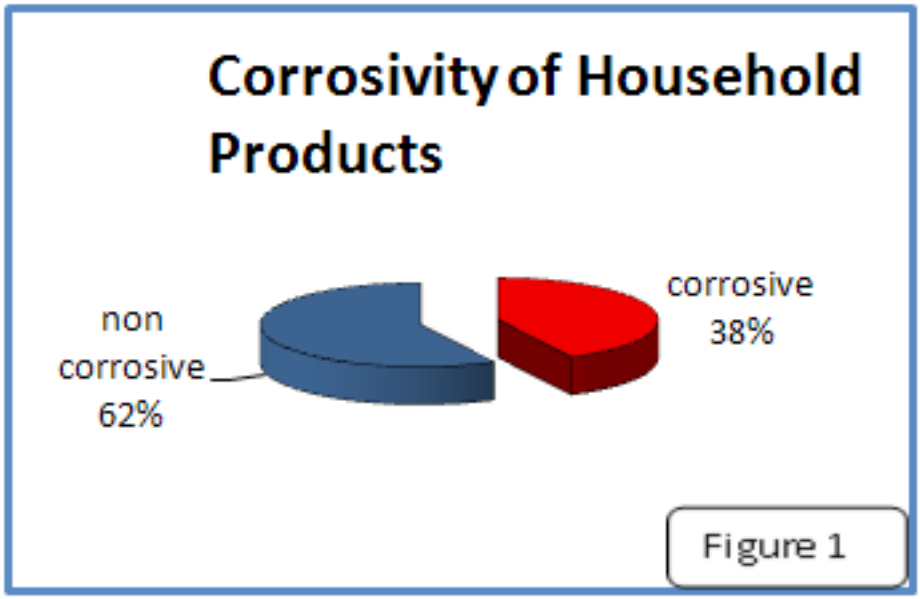


Figure 1

Packaging and labeling

Child resistant package

Seventy six percent of the products that are commonly sold in the UAE market were not in child resistant packages. Among corrosive household products: sixteen products were not child resistant representing 16% of the total surveyed household products (100 products) (Figure 2, next page).

Label information completeness (in English) findings in all 100 Products: (findings are presented in Chart 1, next page)

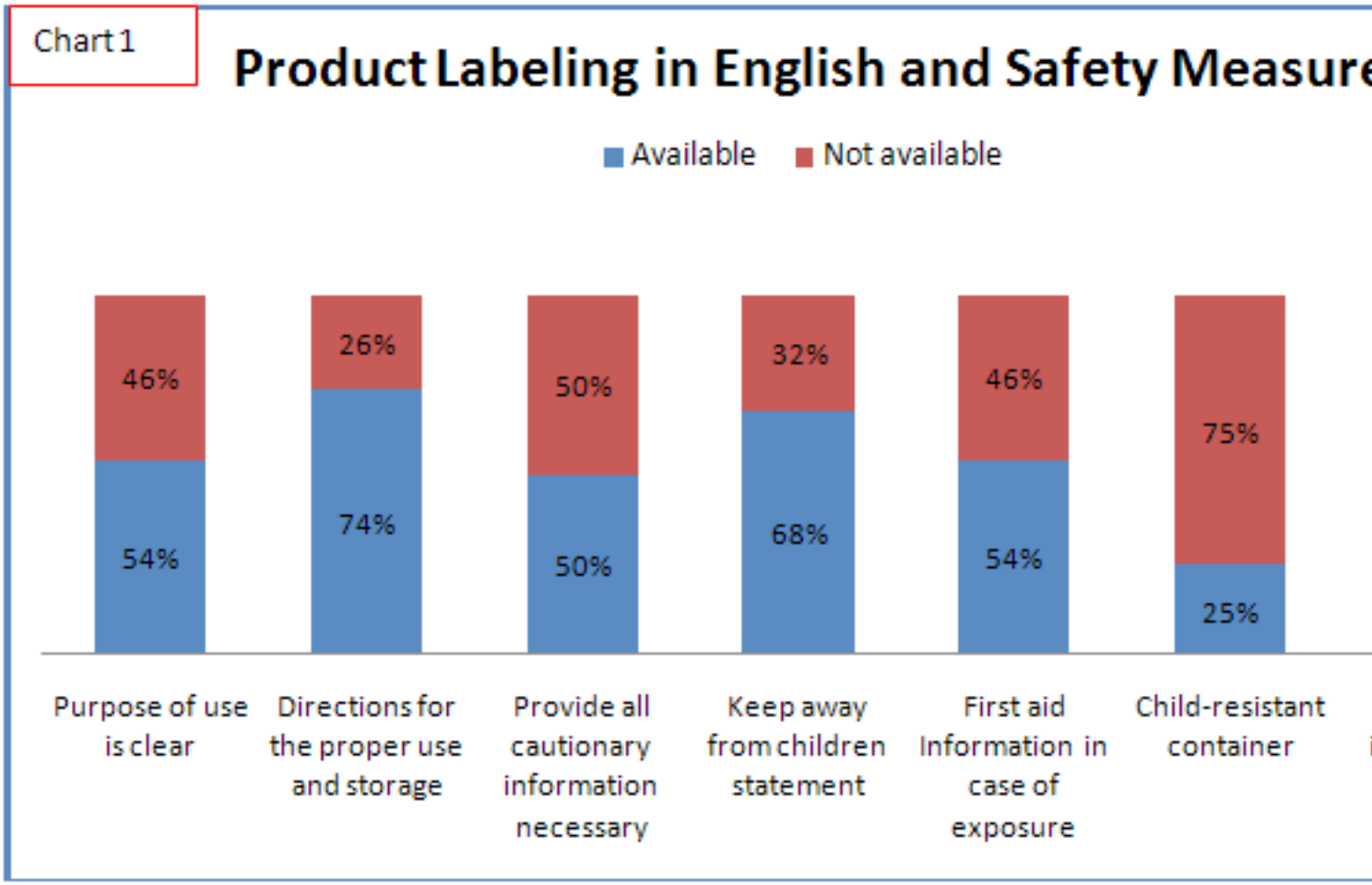
1. A great number (46 out of 100) of products do not provide clear purpose of use.
2. Directions for the proper use and safe storage conditions were missing in 26 products.
3. Necessary cautionary information i.e. (corrosive, irritant or poisonous) were missing in 50 products, Ten of them are corrosive products.
4. “Keep Away From Children” statement was missing in 32 products.
5. First aid measures in case of eye exposure, ingestion or inhalation were missing in 46 products.

Label information completeness (in Arabic) findings in all 100 Products are presented in Chart 2, (page 30)

Some important discrepancies between the findings in English and Arabic labels are presented in Chart 3, (page 30):

The English labeling tends to be more complete than Arabic labels.

Chart 1



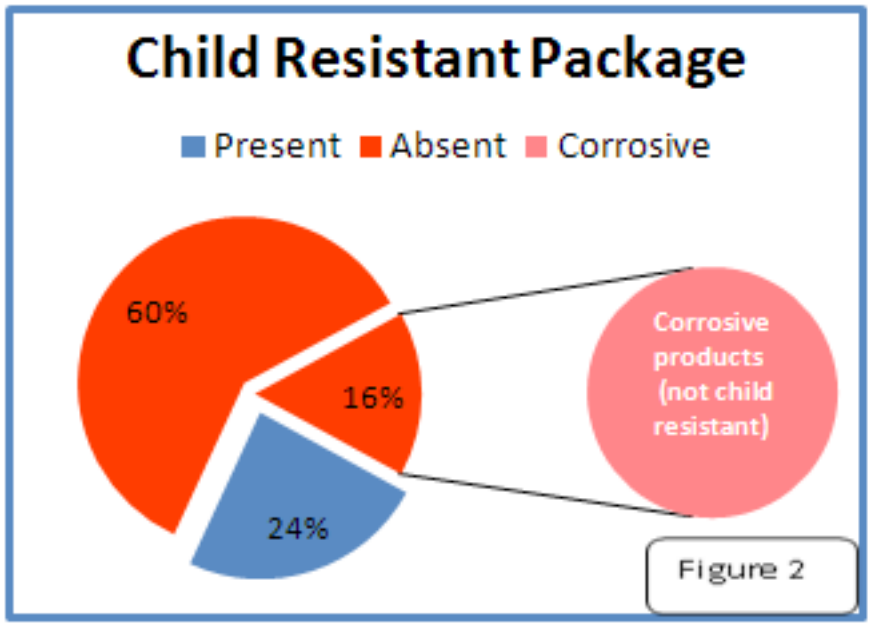


Figure 2

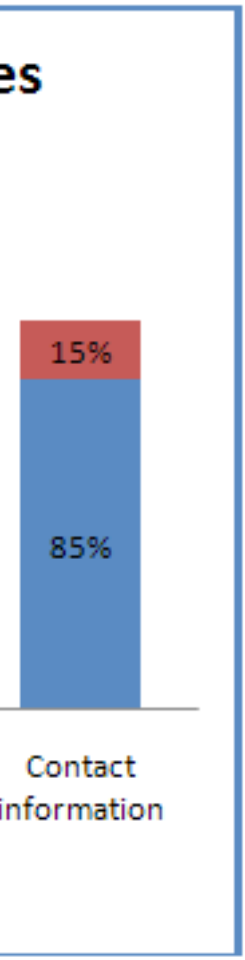
Discussion

A wide variety of chemical agents may cause corrosive injury. They include mineral and organic acids, alkalis, oxidizing agents and agents that cause exothermic reactions. Exposure to these substances has a variable mechanism and severity of injury, however, the consequences of mucosal damage and permanent scarring are shared by all these agents [7]. Measuring the PH is an easy measure to predict the corrosive effect of liquid substances. It is also a contributing factor to the degree of tissue injury; the agents with a PH higher than 12 or less than 2 are highly corrosive and can severely damage the tissue they come in contact with[8].

Among household products, the most corrosive ones are:
- Bowl cleaners (PH range 1-2)
- Bleaching agents (PH range 12-14)
- Drain openers. (PH 14)

One of the very interesting findings in our survey; is that two of the non brand name generic products which are used as bleaching agents; Parozone and NO1 were found to be less corrosive(PH = 10) than the original brand which is used for the same purpose Chlorox™ (PH =14). This may be due to more dilution of the non brand name generics.

It was also noticed that some personal use items such as hair removers and hair coloring are unexpectedly corrosive (PH = 14). However, there is no warning to the consumer about this issue.
Unlike medicines and cosmetics, the containers of cleansers, bleaching agents and drain openers are usually stored under sinks in kitchens, within the reach of children. In addition, parents often disregard the potential toxicity and the warnings on the



labels of these products, or store them in new containers, thus increasing the risk of unintentional poisoning amongst children.

These kinds of products need more attention from legislators and registering agencies to emphasize the existence of all safety measures such as child resistant package, clear warning labels to keep products in their original containers, information about hazardous effects from exposure, in addition to first aid measures in the case of accidental exposure in order to reduce this risk.

Enforcing the Poison Prevention Packaging Act (1970) in addition to increasing the awareness among people, were considered the most important contributing factors for the reduction of pediatric mortality due to household products exposure in the USA[4]. Many countries adapted the same measures, such as Brazil, Turkey, Canada and many European Countries [9-11]. Therefore, it is also prudent for UAE legislators and authorities to adapt more rigorous standards for the household products that are marketed in the UAE, especially corrosive household products should not be sold without child resistant packages.There should be also a mandate for these products to have complete and informative Arabic labeling side by side with the foreign language label.

To our surprise, we found that Arabic translations for the instructions and warnings are not translated correctly from the English information. In addition, the Arabic translations were only available for 73% of the products compared with ~100% for English. In addition, some important information such as, “Keep away from children”, “Directions for proper use”, and “First aid Information” was not translated into Arabic despite the presence of the information in English. The presence of such information in Arabic is of great importance especially for highly toxic products.

Conclusion

Unintentional poisoning by household products in children is a worldwide challenge. Many strategies have been set up worldwide in order to prevent this risk such as:

- Increasing awareness among the public through “poison prevention week”; brochures that counsel the parents to read the label first before purchasing or using any household product, and providing safety tips on how to poison proof homes.
- Enforce the presence of child-resistant containers for household products especially the highly toxic ones.
- Enforce standardized dilution if applicable to corrosive products.

Our survey highlighted a very important safety concern. The results indicate that many corrosive substances have no proper packaging. In addition, the majority of labeling for cleaning products does not provide all safety information recommended for consumers. Many of the products do not have proper Arabic translations.

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Chart 2

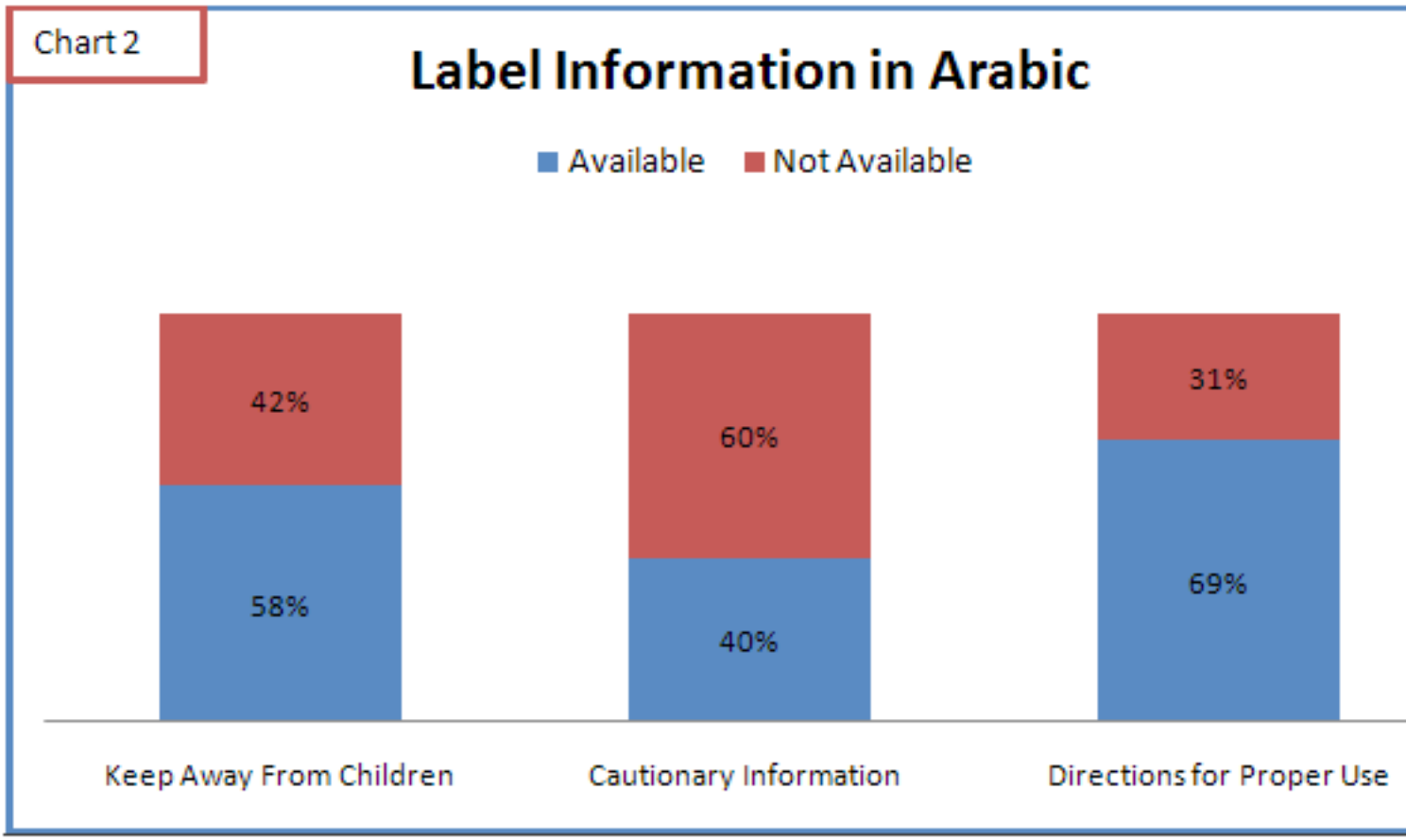
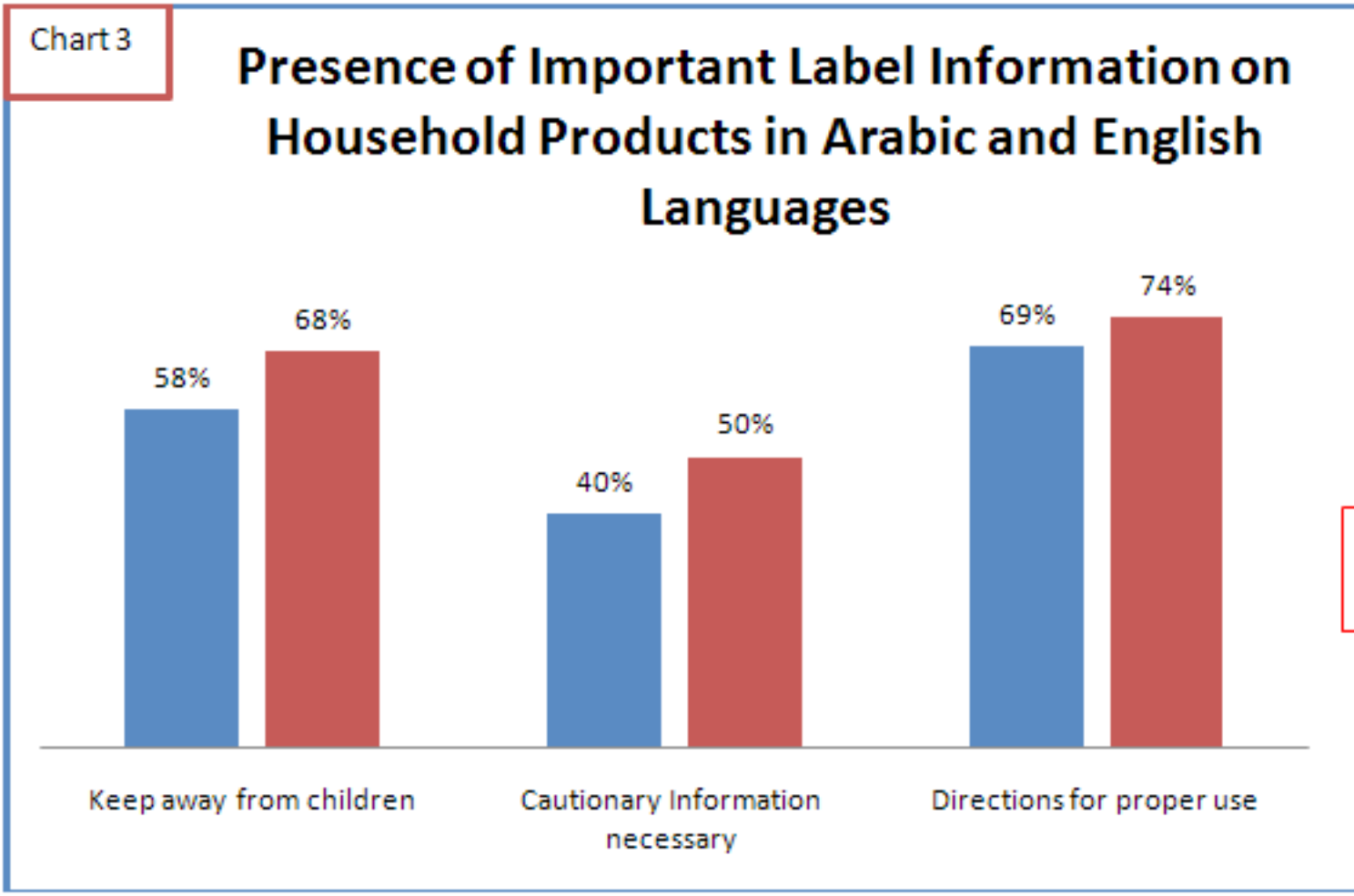


Chart 3



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Cardiovascular prevention: internet resources for a Teaching Unit

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ABSTRACT

In order to find stimuli, for getting young students interested in the subject of "Health", internet resources have been searched such as scientific publications, atlases, images, graphics and animations that help study cardiovascular prevention. Stroke, myocardial infarction, their risk factors, and benefits from a healthy life style are also described. It can be noted that compliance with the rules of cardiovascular prevention, often produces benefits in other areas of health.

Intense changes in lifestyle in some countries, including the abandonment of manual activities, use of high fat foods, alcohol and tobacco abuse have negatively affected the spread of cardiovascular diseases. The first project, launched as a response to the high mortality from cardiovascular diseases, is described. Its peculiarity has been the involvement of the entire community, including the school; even some environmental changes have been part of the strategy. As a result, e.g. among middle-aged men, there was a decrease of 73% in the annual rate of mortality for heart disease and the general conditions of health in the adult population improved.

Key words: **Cardiovascular, Stroke, Prevention, lifestyle**

Introduction

The need has been felt to find stimuli for getting young students interested in the subject of "Health", helping them to attach importance to this gift which nature has endowed them, in the optic of doing their best to preserve it.

For this reason internet resources have been searched, such as scientific publications, atlases, images, graphics and animations that help study cardiovascular (CV) prevention through a study route where a "health" culture is promoted in the widest sense.

According to the World Health Organisation, cardiovascular diseases made up 16.7 million or 29.2% of total global deaths (1) in the year 2003, additionally at least 20 million survived CV diseases, requiring much clinical care. Most of the burden is attributed to stroke or myocardial infarction and four out of five of these deaths occurred in low and middle-income countries.

Aims of the Teaching Unit

The subject is very complex. This paper is just an introduction to the study.

Stroke and myocardial infarction are the starting point of an educational route, toward an increased awareness of the consequences of our behaviour, on our health. They can be positive or negative.
The risk factors are determined to a great extent by behaviours learned in childhood and continued in adulthood, such as dietary habits and smoking.

Materials and methods

Some WHO documents concerning CV diseases and their prevention are available, including an Atlas (2) with a lot of information about the situation in the world and the changes happening. There is also the World Atlas of Tobacco (3).

Some on line animations help to better understand the mechanisms of some (4-5) CV diseases, diabetes (6-7) and its relations with obesity, the relations (8) of salt and blood pressure (BP).

An important resource for sanitary education is Pubmed (9-10), a free digital database of biomedical and life sciences journal literature which provides access to millions of papers.

The Journal of the American Heart Association has published a guideline "Primary prevention of ischemic stroke (11). This document reports 572 citations which are often available as abstracts, if not the complete text, for further study. The WHO has published a document entitled "Avoiding heart attacks and strokes" (12).

The documents mentioned in this paper, can be downloaded for free, and have been the base of this manuscript.

This teaching unit may cut across science, English, gymnastics and geography.

When working in the class room with students who have basic knowledge about anatomy and physiology, the computer was used for the research and the reading of these documents. Then face to face explanations, discussion and verifications followed.

Discussion

Stroke is a neurological deficit due to an interruption of cerebral blood flow, usually caused by a blockage or bleeding. Some of its risk factors are non modifiable. It is important to know them, since they identify who is at highest risk of stroke and may benefit from rigorous prevention.

Aging, male sex and low birth weight (<2500 g), are statistically associated with greater risk; other factors have some influence, including genetic and racial factors.

A BP higher than 90/140 mm Hg is the first modifiable risk factor. Hypertension acting on the walls of the arteries can cause bleeding.

Many doctors advise if possible to have an even lower BP (Author's note).

To a certain level it is asymptomatic and many people have undiagnosed hypertension.
A lower risk of stroke is associated with an increased consumption of fruits and vegetables.
This applies to a lower sodium intake and an increased consumption of potassium as well.
A diet not too rich in fat is generally associated with a lower risk.

Many studies have shown a direct relationship between physical inactivity and risk of stroke. Physical activity even moderate, carried out on a daily basis for 30 minutes, already provides a detectable benefit. Activities more intense and of longer duration, carried out gradually and under medical supervision, can provide greater benefits.

Constant practice of physical activity reduces BP, blood levels of triglycerides, sugar and LDL cholesterol, and raises the blood level of HDL cholesterol. Further benefits are reduction of excess weight, stress and anxiety. It has been suggested that physically active students demonstrate higher performance at school and adopt more readily other healthy behaviours (avoiding alcohol, tobacco

Photo 1

Considering all age groups, on average tobacco use doubles the risk, but for young people the increase of risk is even greater.

Smoking can potentiate the effects of other risk factors. With women who neither smoke nor use oral contraceptives (OC) as reference group in 1 study, the risk of stroke was 1.3 times greater for smokers not using OC. The use of OC among non-smokers increased on average the risk of 2.1 times. But when smokers used OC, it increased by 7.2 times showing a synergistic effect (the "expected" risk without interaction should have been about 2.7 times greater). This happened in the past with the first generation of OCs. Today, with modern low-dose hormone OC, even assuming that the risk persists, it is considered very minor.

High consumption of alcohol is very risky since it can lead to high BP, hypercoagulability, reduced cerebral blood flow and a greater likelihood of atrial fibrillation. Alcohol can induce dependence and its abuse is a major public health problem.

In terms of education, alcohol is a very sensitive issue since notoriously other factors come into play such as dangerous driving, interactions with other substances, and so on.

Young people and pregnant women should particularly avoid alcohol (Author's note).

Use of drugs including cocaine, amphetamines and heroin is associated with increased risk of stroke as it can lead to sudden changes of BP, embolisation, increased blood viscosity, aggregation of platelets and vasculitic-type changes. A study considering all the age groups showed that drug addition increases the risk of stroke by 6.5 times. Still, according to this study but considering only the age groups below 35 years, the risk is 11.2 times greater, allowing us to understand how much more vulnerable are young people.

Among the pathologies associated with an increased risk of stroke, there is type 2 diabetes. It was also observed that in a group of diabetic

Photo 2

patients with mean BP 87/154, the risk was 44% higher than in a group with mean BP 82/144.

Myocardial infarction is caused by an interruption of blood flow to the heart muscle. This is frequently caused by the accumulation of fatty deposits (atheroma) on the inner walls of arteries. The arteries become more rigid and their section decreases, with increased likelihood that a possible blood clot blocks them.

If a blockage takes place in the arteries of the brain, stroke occurs, if it happens in the coronary arteries, myocardial infarction is the consequence.

Overweight and obesity are statistically associated with a high CV risk. The body mass index is calculated by dividing the weight in kilograms by the square of height in meters. Ideally it should be between 18.5 and 24.9. A person is considered overweight when the index is between 25 and 29.9 and obese beyond this value. Abdominal obesity is achieved with waist circumference exceeding 102 cm for men and 88 cm for women. This is associated with the presence of visceral fat harmful for metabolism. In this regard there are some differences among human races.

Type 2 diabetes is a metabolic disorder which hampers the release of glucose from the blood to the cells that use it. The result is a fasting glycaemia too high, beyond 126 mg/dl (=7 mmol/l), that can accelerate the formation of atheroma resulting in narrower and harder arteries, with a greater risk of stroke and myocardial infarction. Diabetes up to a certain level is asymptomatic and many people do not know that they have it.

Overweight, physical inactivity, a diet rich in fat and sugars but low in fibre as well as abuse of alcohol contribute to it. Type 2 diabetes occurs generally among adults, but now the number of young people with this pathology is increasing in many countries.

According to the World Health Organisation, BP exceeding 90/140 mm Hg, besides damaging the arteries, leads to a stressing situation for the heart. Overweight, smoking, alcohol abuse, salty foods as well as physical inactivity increase BP. High levels of triglycerides (>150 mg/dl) and LDL cholesterol (>115 mg/dl), favour the formation of atheroma or plaques of cholesterol, with consequent CV risks.

The HDL cholesterol, should exceed 40 mg/dl in men and 46 mg/dl in women. This is beneficial because it has the opposite effect than the LDL.

Among the strategies set by WHO for the prevention of CV diseases are included:

- Consuming limited amounts of foods containing saturated fats.
- Eating omega-3 contained in certain fish and certain vegetable oils (remembering, however, that every fat, saturated or not, when taken in excessive amounts promotes overweight.)
- Having a fibre rich diet, hence oriented towards fruit, vegetables, legumes and whole grains.
- Practising a physical activity,

Photo 3

even a moderate one, such as walking, housework or gardening, for at least 30 minutes a day, possibly continued on a daily basis. Physical inactivity increases the risk of coronary heart disease and ischemic stroke by around 1.5 times.
- Avoiding smoking and abuse of alcohol. The risks are much higher in people who started smoking before the age of 16.
- Maintaining a regular body weight. Obese children are very likely to remain obese into adulthood and to develop CV diseases and diabetes.
- Limiting salty foods and sugar. Many preserved, canned and prepared foods, very often contain a lot of added salt; this notoriously raises BP. Generally simple sugars, unlike the complex ones, are rapidly absorbed into the bloodstream and contribute to high postprandial blood glucose.

The glycemic index of a food indicates how quickly a given amount of sugars present therein, enters the bloodstream, hence causing a more or less sharp increase in postprandial glycaemia. Every food has its own index, depending on the type of fibre and of sugar it contains, or the acidity, which affects the stomach emptying rate as well as on other components.

According to Kaye Foster-Powell et al. (2002) the index is influenced by industrial processes and the type of cooking method; even botanical differences e.g. between different varieties of rice explain different glycemic indexes. A prolonged use of carbohydrate rich foods with high glycemic index, is associated with an increased risk of type 2 diabetes and CV disease.

A heavy workload, especially if coinciding with situations where the employee has little power to decide, according to Hintsanen Mirka et al. (2005), determines in the long period in the most sensitive individuals, thickening of the carotid walls as a consequence of BP rise.

This is known to be associated with increased CV risk.

The effect of yoga on risk factors for CV disease was studied by Kyeongra (2007), reviewing 32 scientific papers published in recent decades. Even observing that further research would be necessary, he concludes that this practice can produce benefits with regards to blood lipids, overweight, glycaemia, BP. After reviewing 150 papers, Kim and Heather (2007) confirm these conclusions adding that yoga can also reduce the effects of stress, anxiety, depression, sleep disorders and other factors, further contributing to CV prevention.

According to many yoga teachers different positions may have therapeutic effects, but in certain specific situations, there can be also (13) contraindications (Author's note).

The effect of laughter on blood sugar was observed by Hayashi et al. (2003). On a group of volunteers including 19 diabetics (type 2) not in therapy and 5 healthy individuals, glycaemia was measured before and 2 hours after a meal of 500 kcal. The first day, after the meal, the volunteers attended a monotonous conference. The next day, after the meal, they attended a comedy that caused intense laughter.

Both healthy individuals and those with diabetes, as expected always had a rise in postprandial blood glucose, obviously sharper in the latter. But when they had attended the monotonous conference the glycaemia rose by 6.8 mmol /l in diabetic and 2.0 mmol /l in healthy subjects, whereas in the case of comedy the blood glucose rose by only 4.3 mmol /l in diabetic and 1.2 mmol /l in healthy subjects. The Authors attributed the difference to an accelerated consumption of glucose by the muscles involved in the action of laughing, but speculate that the laughter has also acted on the neuroendocrine system limiting the rise of glycaemia.

According to WHO, childhood obesity is an epidemic (14) concerning the industrial and third world countries, at least for certain population groups. Some countries are facing the double burden of obesity and malnutrition.

The WHO provides much guidance on how to deal with it in schools. Here is suggested inter alia, the use of school gardens to develop awareness about food origins (15-16).

Safe non-motorized modes of transportation (17-18) from house to school are encouraged as well.

An initiative that goes in this direction is the project “Walking bus” popular in several Countries.

Children walk to school in groups according to fixed routes, meeting points and timetables, accompanied by trained volunteers. Municipalities or e.g. local sanitary institutions may support it.

Students perform physical activity, learn to move correctly in the town and contribute to reducing traffic and pollution.

A teaching unit on CV prevention may seem broad and demanding, but it can be noted however, that compliance with its rules, often produces benefits on other areas of health.

For example, exercise also promotes bone development by reducing the risk of fractures.
According to a work of Magnus et al. (2008) who reviewed 105 papers published on this topic, weight bearing and its impacts stimulate an increase of bone mineral content in the skeletal parts involved in the exercises. The results may have a different intensity depending on age, nutrition, and sex, and as for the exercises performed, their quality, quantity and frequency.

Even the development of bone size is positively associated with physical activity.

A review by La Vecchia and Bosetti (2006) suggests that an alimentary style benefit for the prevention of various cancers, is very similar to that which prevents CV diseases.

According to research conducted in 10 European countries with over 478,000 people by Norat et al. (2005), colorectal cancer is less common among people consuming the largest amounts of fish. The opposite occurs among people with the highest intake of red meat and preserved meat. This suggests similarities between the dietary habits which prevent colorectal cancer and a diet which prevents CV diseases. A document of WHO focusing on prevention of cancer, in addition to emphasising the importance of stopping the childhood obesity epidemic (19), provides further indications which still have many similarities with the ones which prevent CV diseases.

Intensive lifestyle changes with increase of CV disease were observed in several countries during recent decades.

According to Ding and Malik (2008) in China, the prevalence of obesity, consequence of a diet with high glycemic index, now more rich in saturated fats, and to lesser physical activity related to modernization, are contributing to the spread of diabetes and CV risks.

According to Gill et al. (2002), in some countries of the western Pacific area, obesity and diabetes are rapidly spreading with consequent damage to the population. The reasons given for this change are the abandonment of fishing and manual activities in agriculture, the diffusion of alcoholism and use of high fat foods, the frequent use of sugary drinks and cakes.
In addition the spread of private transport and violence discourages walking.

A project launched in North Karelia in 1972 as a response to the high mortality from CV diseases and then extended to the whole of Finland, according to Puska (2002) was the first one, among a series of projects based on the involvement of the whole community. This activity lasting 25 years has involved various public services beyond the health institutions, schools, NGOs, mass media, supermarkets, food industries, agriculture etc. Even some environmental changes have been part of the strategy.

The consumption of vegetal foods and fats, initially limited, became much more common, and there was a decrease in the use of animal fat and total consumption of cigarettes. Physical activity during leisure time increased as well. As a result, e.g. among middle-aged men, there was a decrease of 73% in the annual rate of mortality for heart disease. The general conditions of health in the adult population improved, the mortality rate for lung cancer has decreased by over 70%. Many other countries followed with similar aims.

Photos 1-2-3: Segregated cycle facilities and pedestrian lanes encourage safe non-motorised modes of commutation, hence physical activity.

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Relapsing polychondritis in a patient with ulcerative colitis: A case report and review of the literature

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ABSTRACT

Relapsing polychondritis (RPC) is a rare multisystem autoimmune disease that has been a challenging diagnosis given its rarity and vague presentation. In this article we report a rare association between RPC and ulcerative colitis. We also present a comprehensive review that included the different associations and manifestations of RPC, the evolution of the diagnostic criteria proposed by different authors and the conventional modalities of therapy highlighting the use of biologic agents in such a rare condition.

Key words: Relapsing polychondritis, ulcerative colitis, inflammatory bowel diseases, cartilage diseases, review

Introduction

Relapsing polychondritis (RPC) is a unique, rare autoimmune disorder in which the cartilage and its related connective tissue structures throughout the body are structurally affected usually in a cyclic fashion of inflammation. It can be primary or associated with other disease states (Table 1), and the consequences can be life threatening, especially when there is involvement of the tracheobronchial tree. Here we present a case of RPC in a patient known to have ulcerative colitis (UC) which is a rarely reported association (1,2).

Familial Mediterranean Fever
Crohn's disease
Behcet's disease (MAGIC syndrome)
Sweet's syndrome
Ankylosing spondylitis
Human immunodeficiency virus (HIV)
Myelodysplastic syndrome
Rheumatoid Arthritis
Systemic lupus erythematosus (SLE)
Reiter's syndrome
Wegener's granulomatosis

Table 1: Diseases associated with RPC

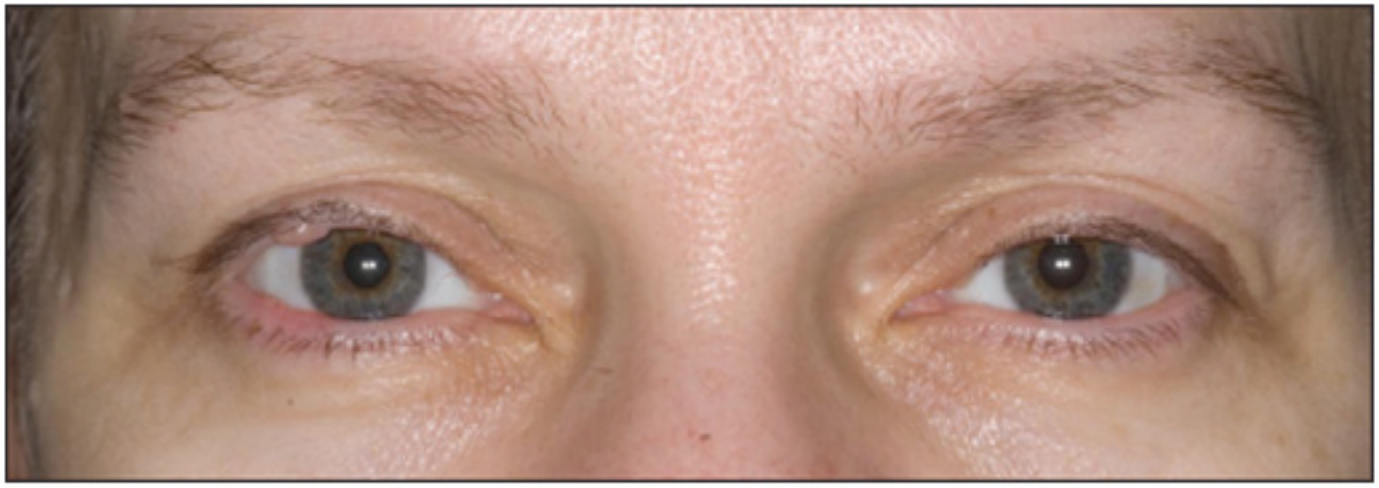

Figure 1 A

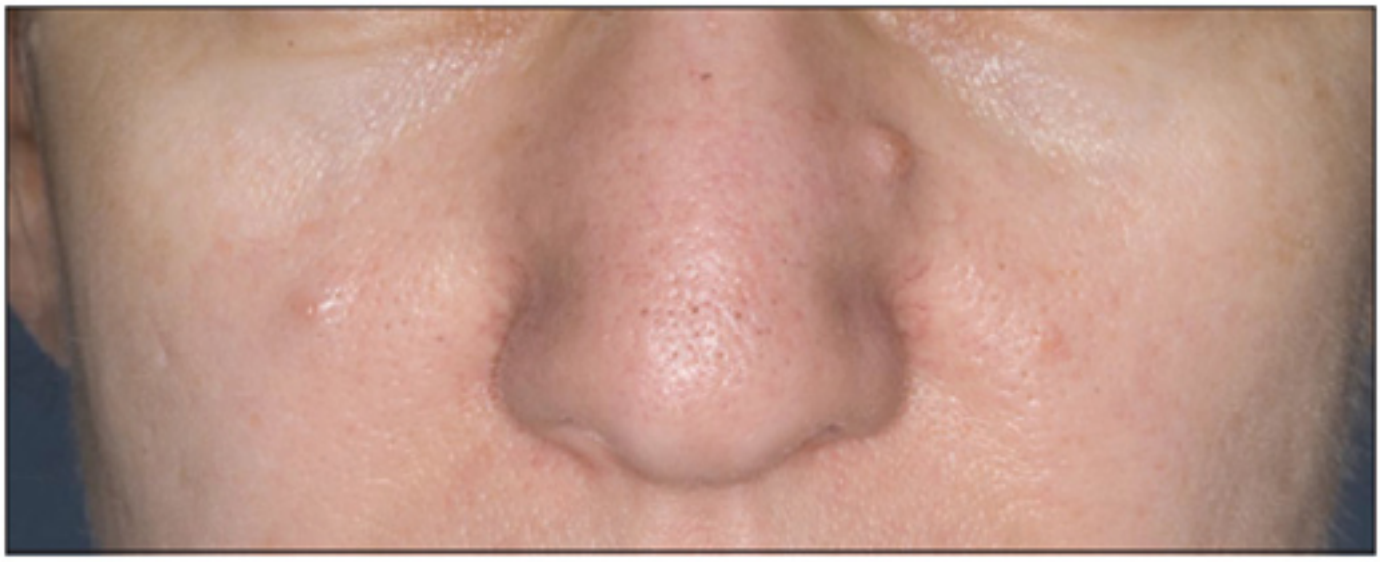

Figure 1B

Methodology

We reviewed PubMed database up to December 2009 using the key words relapsing polychondritis. 1045 articles were identified, and most of these were case reports, with a limited number of case series.

Case Report

A 53 year-old Caucasian woman developed neck pain and fever over the course of two weeks prior to her presentation to hospital.

Her past medical history was significant for 20 years of UC that has been quiescent for a few years, an episode of depression and recurrent migraines. She presented with fever that was intermittent, and diffuse neck pain poorly responding to NSAIDS and getting worse over the course of 2 weeks. Apart from that her review of symptoms was not significant.

Her physical examination showed initially a temperature of 40 degrees Celsius and was remarkable for neck tenderness on palpation. There were no meningeal signs and on cardiac auscultation, she was found to have a high-pitched holosystolic murmur. The remainder of her examination was normal.

On admission, her laboratory investigations were remarkable for a white blood cell count of 18,100 and deranged liver enzymes (gamma glutamyl transpeptidase: 116 U/L, alkaline phosphatase: 212 U/L, alanine aminotransferase: 178 U/L). Her urine analysis and chest X-ray were unremarkable. An echocardiogram was obtained to rule out endocarditis given the underlying murmur; results were also unremarkable. Head and neck computerized tomography (CT) and magnetic resonance imaging (MRI) were performed, with no significant findings. Blood cultures were negative. The Anti-Nuclear Antibodies (ANA) and Anti-Neutrophilic Cytoplasmic Antibodies (C- and P-ANCA) were also negative.

A week through her admission, the patient's neck pain resolved, but she developed swelling of her nose and eyelids (Figure 1) associated with pain and erythema. Concomitantly she developed erythema of her sclera. On further questioning, she admitted to previous episodes of similar symptoms and a past history of costochondritis. A gallium scan confirmed an active inflammatory process in her nose and eyelids (Figure 2,)

A diagnosis of relapsing polychondritis was concluded and the patient was started on steroids (prednisone 30 mg po qd).

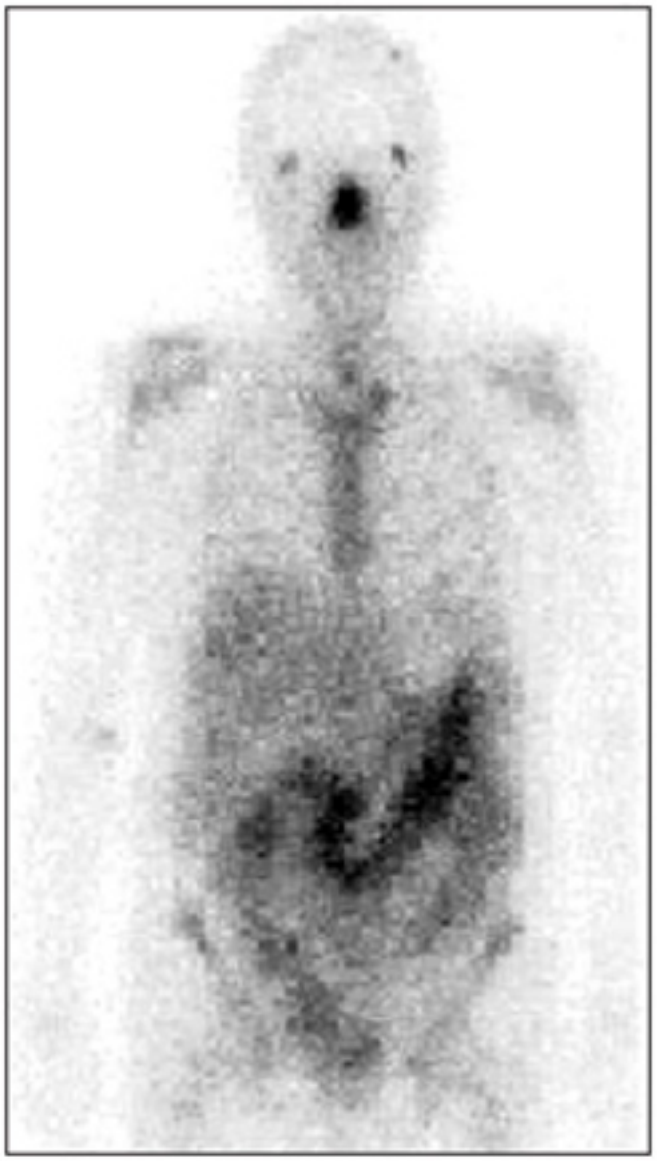

Figure 2: Gallium scan showing increased uptake in the area of the eyes and nose

She responded very well to the therapy and within three days she was discharged home. The C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR) decreased from 150 to 3.7 mg/dL and from 70 to 23 mm/h respectively.

The initial description of RPC was in 1923 by Jaksch-Wartenhorst. Since then our understanding of this disease has improved but its rarity makes studying it in a more systematic fashion difficult. It is a rare, debilitating autoimmune disease, characterized by recurrent bouts of inflammation and destruction of the cartilaginous structures in a multi-organ fashion that may involve ear/nose, tracheobronchial tree, peripheral joints and axial skeleton. Other collagenous structures can be affected (Table 2). The absence of a known aetiology, a specific diagnostic test, and the obscure presentation makes the diagnosis of relapsing polychondritis a challenge, leading to delayed or misdiagnosis. The survival rate in earlier studies is around 55% at 10 years but later on it has improved to be 94% at 8 years, probably as a consequence of more aggressive management (3,4).

Discussion

The initial description of RPC was in 1923 by Jaksch-Wartenhorst. Since then our understanding of this disease has improved but its rarity makes studying it in a more systematic fashion difficult. It is a rare, debilitating autoimmune disease, characterized by recurrent bouts of inflammation and destruction of the cartilaginous structures in a multi-organ fashion that may involve ear/nose, tracheobronchial tree, peripheral joints and axial skeleton. Other collagenous structures can be affected (Table 2 opposite page). The absence of a known aetiology, a specific diagnostic test, and the obscure presentation makes the diagnosis of relapsing polychondritis a challenge, leading to delayed or misdiagnosis. The survival rate in earlier studies is around 55% at 10 years but later on it has improved to be 94% at 8 years, probably as a consequence of more aggressive management (3,4).

Epidemiology

Although the distribution between both genders has been found to be equal in some series, others found a higher propensity for females. The age of presentation varies widely but the mean age at diagnosis is 42 years, with an estimated incidence of 3.5 per million populations per year in a series from Rochester, Minnesota. Although RPC was most commonly reported in Caucasians, it has been described in other ethnicities (5-9).

Genetics and Pathophysiology

The genetic predisposition of the disease is unknown, however it has been proposed. For instance 56% to 85% of the patients with RPC were found to have HLA -DR4 expression compared to 26 % of controls (8,9,10). There was also an observation of significant association between HLA-DR6 positivity and clinical features of RPC. The importance of this relationship is unclear and remains speculative.

The understanding of the pathophysiology of RPC is poor and there is paucity of research in this aspect of the disease. However there is evidence of humeral and cell mediated immune mechanisms. A hypothetical schema of RPC pathogenesis is shown in Figure 3.

An observational study that compared RPC patients to age and sex matched healthy controls and patients with rheumatoid arthritis

Auricular chondritis	57% - 100%
Asymetric arthritis	80% - 83%
Nasal chondritis	57% - 72%
Respiratory tract chondritis	31% - 56%
Audiovestibular abnormalities	14% - 46%
Cardiac involvement	8% - 14%
Vascular involvement	25%
Eye involvement	43% - 51%
Dermatologic manifestations	24% - 50%
Central nervous system	10%
Articular involvement	43% - 80%
Kidney involvement	7% - 10%

Table 2: Prevalence of finding with RPC

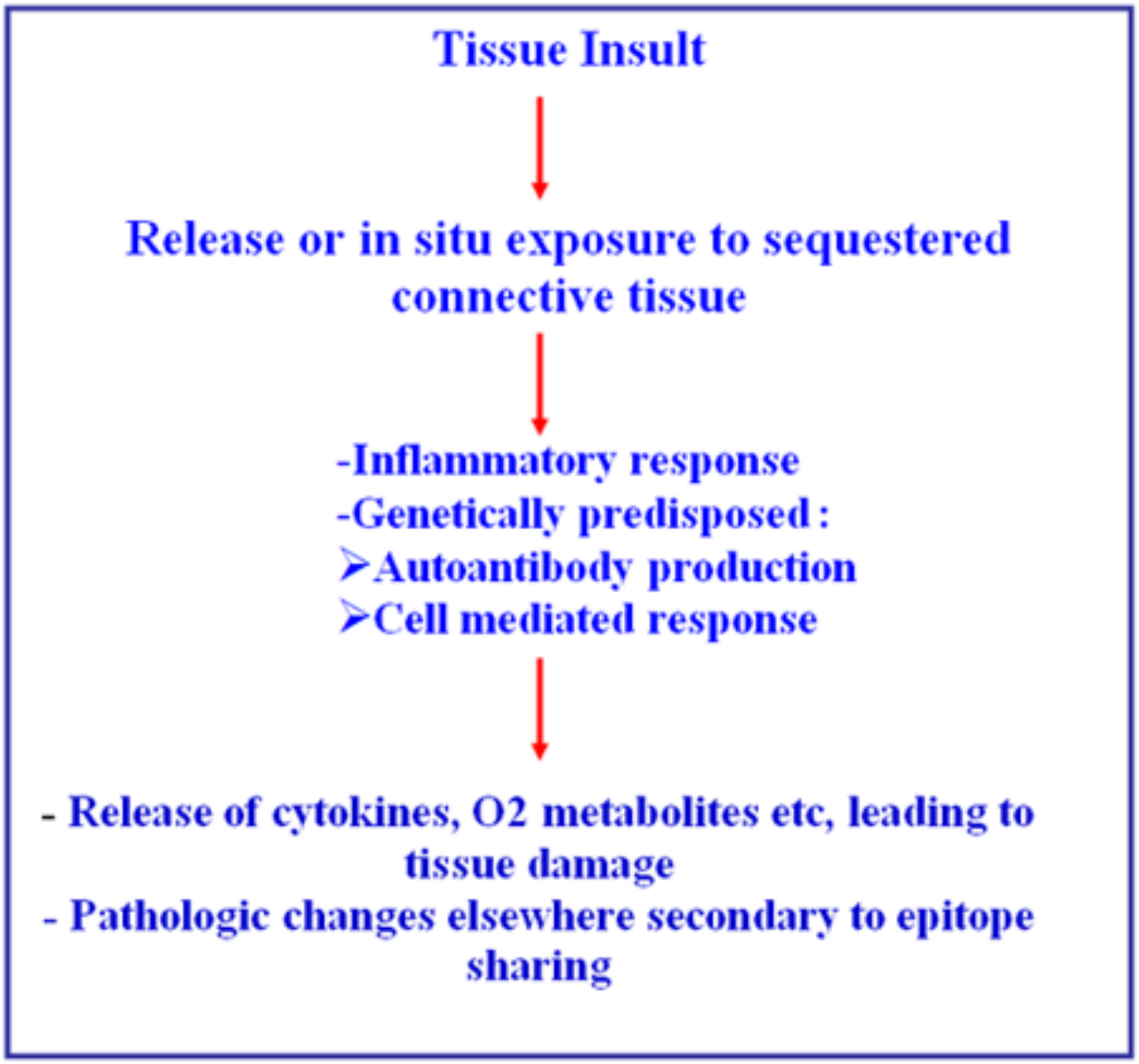

Figure 3: Hypothetical mechanisms of RPC pathogenesis

demonstrated higher levels of interleukin 8 (IL-8), monocyte chemoattractant protein 1 (MCP-1), and macrophage inflammatory protein 1beta (MIP-1?) in RPC patients, findings that suggest a cell mediated immune response in the pathogenesis of RPC (11,12). There is also evidence of NKT cells dysfunction (13). Direct immunofluorescence may detect immunoglobulins and C3, with IgG being predominant. Immune complexes may result in vasculitis and glomerulonephritis. Titers of these complexes correlate with disease activity and may be secondary to the release of cartilage fragments in the circulation.

Clinical presentation

Because of the ambiguous presentation of these patients, there is on average a delay 2.9 years before the diagnosis is reached (14). The clinical manifestations of RPC with their relative frequencies are shown in Table 2. Swelling of the auricle with the well known cauliflower deformity, in the acute phase is a feature that can help in differentiating RPC from other causes because there is sparing of the earlobe as it is devoid of cartilage. Painless saddle nose deformity is also suggestive of RPC. In a large case series from France, the occurrence of dermatological manifestations with RPC was common but non-specific and may mimic cutaneous manifestations of Behcet's disease and IBD (15). In addition there are reports of CNS and meningeal involvement in RPC (16,17).

A systematic review from the Mayo clinic found that cardiac involvement was more common in males and required more invasive procedures (18). Identifying predictors of a more aggressive disease could aid in managing patients with more appropriate treatment regimens.

Laboratory investigations

The conventional laboratory investigations have not been shown to be helpful in the evaluation of these patients; the white blood cell count, ESR, and CRP are all non-specific. An abnormal urinalysis may indicate renal involvement and glomerulonephritis should be suspected. ANA, ANCA, and antiphospholipid antibodies have been associated with RPC, but all lack specificity (19-21).

Despite their correlation with disease activity, antibodies to type II collagen have low diagnostic value in patients with RPC. They are only seen in 25-50% of cases and can be detected in patients with rheumatoid arthritis, SLE, ankylosing spondylitis and psoriatic arthritis (22-24). Other markers like urinary glycosaminoglycans and serum anti-glycosphingolipids have been described.

Imaging and other investigations

Respiratory involvement is a serious complication and yet may go undiagnosed initially. Thus all patients should undergo pulmonary function tests, as well as inspiratory and expiratory flow volume curves. Characteristics on CT scan findings, especially dynamic expiratory CT, that can aid in the discrimination between RPC from other causes of tracheobronchial stenosis have been described (25,26). The use of the radiotracer 99mTc for the diagnosis or RPC has been described as well as the use of Galium scanning for monitoring the course of the RPC (27,28). In our case there was obvious increased uptake of the gallium scan at areas affected which was the key finding to the diagnosis (Figure 2). MRI and PET scan are other diagnostic modalities, but their roles in RPC are investigational. Echocardiogram may help to assess involvement of cardiac valves and CT or MRA may be necessary to look for large vessel disease.

Diagnosis

The original diagnostic criteria proposed by McAdam in 1976 required histological confirmation (29). However the need for a biopsy has not been necessary in retrospective studies nor in clinical practice if the patient has chondritis of both ears, or in multiple sites. This has lead to the modification of the original criteria by Damiani and Lavine in 1979 (30) and finally by Michet in 1986 (Table 3) (4). In any case, if the clinical picture is not clear or confusing, a biopsy may be essential to make the diagnosis.

1. Inflammatory episodes involving at least three sites: auricular, nasal or larygotracheal cartilage.
2. One of those sites and two other manifestations, including ocular inflammation (conjunctivitis, keratitis, episcleritis, uveitis), hearing loss, vestibular dysfunction or seronegative inflammatory arthritis.

Table 3: Michet et al. criteria for diagnosing RPC (4)

Treatment

A standardized therapeutic protocol for RPC has not been established because the disease is rare and has a wide diversity of presentations and unpredictable recurrence rate and course. General therapeutic guidelines are based on retrospective analyses of series of patients or isolated case reports.

Patients who have mild disease with fever, ear cartilage and/or nasal cartilage inflammation may respond well to non-steroidal anti-inflammatory drugs. Colchicine has been reported to be effective in some cases (31,32). Practically it may be added to NSAIDs or used as a prophylactic agent after stopping them. If symptoms are severe or resistant to NSAIDs, then low to moderate doses of corticosteroids may be necessary. Presence of respiratory symptoms, renal disease, or vasculitis requires high dose corticosteroids. Immunosuppressive agents may be necessary as steroid-sparing agents. Other drugs, for example dapsone (33) and cyclosporine (34-36) have been reported to be helpful in small number of patients and so have immunosuppressive drugs like methotrexate (37,38), azothioprine (39), cyclophosphamide (40) and mycophenolate mofetil (41). An acceptable approach in patients with severe disease is to control manifestations with corticosteroids and cyclophosphamide and later

and later switch to a less toxic medication like methotrexate. Plasmapheresis, penicillamine, and minocycline therapy also have been reported.

The use of the biologic agents has been used with variable outcomes in patients with RPC, however deep sighting into the available case reports and the small case series may convince some rheumatologists that biologic agents are a valid therapeutic alternative especially in cases failing conventional therapies.

In a recent study of 9 patients with RPC, Rituximab use showed conflicting results, but no patient achieved complete remission when analyzed at 6 and 12 months after receiving the treatment (42). In a subsequent report, rituximab showed a positive and sustained response in one patient (43).
In one report use of IL-1 receptor antagonist was successful in a patient with refractory disease (44).

In a patient with concomitant RPC and hepatitis C virus (HCV), therapy with interferon gamma and ribavirin was associated with resolution of the symptoms of RPC (45)

Among different biologic therapies, Anti-TNF agents are considered to be the leading therapy for RPC. They have been used in RPC and in some instances of refractory disease there was satisfying results (46-49).

However given the small number of patients and the short follow up periods, all on top of the marked heterogeneity in the phenotypic presentation of such a rare condition, makes it difficult to predict and to interpret the effect of different treatments on clinical outcomes.

Tracheal involvement is a serious complication that necessitates aggressive management including tracheostomy and maybe stenting if there is tracheal collapse.There is a large body of literature discussing the various interventional procedures that can be performed to keep the airway patent, and reconstruction surgeries for the aorta; we have not discussed these issues as they are beyond the scope of this review.

Outcome
The course of RPC varies from a low-grade up to fulminating and rapidly progressive disease. Spontaneous remissions are common, hence the name “relapsing.” Although some patients require long-term therapy, others can be treated intermittently. Airway collapse and cardiovascular disease are thought to be the most frequent causes of death.

Michet et al suggested that age less than 51 years, having saddle nose deformity and systemic vasculitis are predictors of poor prognosis and most patients die of infection, vasculitis, or malignancy(4). In other studies, acute aortic valve incompetence was also associated with poor prognosis (18) and the 4-year mortality rate was as high as 52% in those who require valve replacement (50).

Summary and Conclusions

Relapsing polychondritis is a rare, autoimmune and multisystemic disease that has a variable course and outcome. Reaching the diagnosis requires high clinical suspicion. There is a paucity of studies in such a rare condition which limits the understanding of its pathogenesis. Its rarity and variable course also renders large clinical trials to establish general therapeutic guidelines ineffective; however its conventional treatment is comparable to most autoimmune diseases. In addition, like other autoimmune diseases, the introduction of biologic agents found its way as an alternative treatment for RPC, especially in severe and refractory cases. However until large clinical trials are available, it is premature to conclude on their effect in RPC.

Here we reported a rare association of RPC with UC which may be linked by common autoimmune mechanisms. The initial presentation of the patient was a fever of unknown origin and neck pain that most probably represented axial skeleton involvement. The characteristic nasal and eyelids cartilage inflammation manifested by erythema and swelling with the gallium scan findings were the keys for reaching the diagnosis. Her RPC symptoms were atypical and mild while her UC was judged to be inactive. Nuclear medicine imaging provided a minimally invasive clue to the correct diagnosis. This rare association has the benefit of a common therapeutic line being immunosuppressive therapies including the biologic agents like anti-TNF.

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Bilateral Aniridia presenting with ectopia lentis : A case report

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ABSTRACT

This report is of a fifteen year old Nigerian girl who presented to the eye clinic of Federal Medical Centre, Owo, Ondo State, Nigeria on account of poor vision in both eyes since her early childhood. Examination of the patient revealed features which were in keeping with bilateral aniridia with ectopia lentis. There is no similar occurrence in her family. The patient's vision did not improve with glasses. There was no other systemic abnormality, however periodic evaluation of the renal system was advised in view of the close relationship between aniridia and Wilm's tumour. A multidisciplinary approach should be adopted in the management of patients with aniridia.

Keywords: Aniridia , ectopia lentis, Wilm's tumour, Nigeria

Introduction

Aniridia is the absence of the iris. It can be congenital or caused by a penetrating eye injury.(1) Aniridia is an extreme form of iris hypoplasia in which the iris appears absent on superficial clinical examination.(2) In spite of the name aniridia, there is usually a circumferential vestige of the iris in the angle which is revealed by gonioscopy.(3,4) The incidence of aniridia is approximately 1 in 50,000 in the general population.(5) Two thirds of the cases of aniridia are familial while the remaining one third are sporadic.(6) The sporadic cases of aniridia can be associated with WAGR syndrome (Wilm's tumour, aniridia, genitourinary anomalies and mental retardation).(7)Aniridia is present in 1 in 70,000 patients with Wilm's tumour.(5) The aniridia is usually sporadic and these cases present at an early age.(5) The PAX6 gene is very important for the normal development of the eye. The human PAX6 gene located on chromosome 11p13 has been isolated as the gene responsible for aniridia.(8) It has been reported that decreased dosage of PAX6 gene leads to the development of aniridia.(9,10) Aniridia can present alone; it can also be associated with systemic defects. The ocular defects associated with aniridia include albinism, ectopia lentis (50%), spontaneous lens dislocation, cataract glaucoma, nystagmus, strabismus, optic nerve hypoplasia, keratoconus and arcus juvenilis. These ocular defects are likely to contribute to the poor vision in aniridia. In view of the association between aniridia and ectopia lentis, we decided to highlight this case of bilateral aniridia with ectopia lentis. The authors are aware of very few reports of similar presentations in this part of the world.

Case Report

Ia, a fifteen year old Nigerian girl was brought by her mother on the 26th January, 2010 on account of poor vision in both eyes since her early childhood. The late presentation was attributed to financial constraints on the part of the parents. She is a product of spontaneous vertex delivery. The developmental history was apparently normal. Her intelligence and behaviour were also normal. There is no similar occurrence of poor vision in her nuclear and extended family.

General examination revealed a young girl who was afebrile, anicteric and well hydrated. The examination of the cardiovascular system revealed pulse rate of 80/ minute, blood pressure of 130/80 mmHg. Normal heart sounds S1 and S2 were heard on auscultation. Examination of the other systems including the renal system, did not reveal any other abnormality. Ocular examination revealed a visual acuity of 3/60 in the right eye and 1/60 in the left eye. The conjunctiva were

quiet and the cornea of both eyes were clear. Slit lamp examination revealed absence of the iris (aniridia) in both eyes.

However vestiges of iris were seen in the angle of the anterior chamber. The lens of both eyes were displaced upwards (ectopia lentis). Fundoscopy showed pink optic disc, cup: disc ratio of 0.3 in both eyes. Refraction was done but there was no significant improvement with glasses. The patient was to come for periodic follow up pending when the lensectomy should be done. She was also to have periodic evaluation of her renal system by a physician so as to rule out genitourinary anomalies and development of Wilm's tumour.

Discussion

Mutations in the transcription factor gene PAX6 cause blindness through a spectrum of ocular manifestations which include aniridia and foveal hypoplasia.(11-13) The PAX6 gene is of utmost importance in the normal development of the eye. Aniridia is also associated with ectopia lentis which also contributes to the poor vision. The case presented had bilateral ectopia lentis and this finding is consistent with a previous report by Parsa et al in the USA.(14) They reported six cases of bilateral aniridia in a family of nine in Los Angeles, USA ,one of them had bilateral subluxated lenses .(14) Otulana et al also reported three cases of bilateral aniridia in three generations of a Nigerian family.(15) Otulana et al reported another case of buphthalmos with aniridia in a Nigerian child.(16) On family contact tracing, the father of the six year old boy and his elder sister also had aniridia, thus pointing to an autosomal dominant form of aniridia.(16) Another report from Nigeria by Wammanda et al also highlighted aniridia associated with ptosis in three generations of the same Nigerian family.(17)

The cases were in tandem with the autosomal dominant familial aniridia (AN1) type, a genetic form of congenital aniridia characterised by isolated ocular defect.(17)

Even though our patient did not exhibit features of defects in her other systems most especially the renal system, we still opted for regular evaluation of her renal system. The importance of regular evaluation of the renal system in patients with aniridia cannot be overemphasized so as to rule out Wilm's tumour in view of the close association between aniridia and Wilm's tumour. This brings to the fore the need for adoption of a multidisciplinary approach in the management of patients with aniridia. There is also the need for periodic ophthalmic evaluation of the patient so as to rule out possible ocular complications of aniridia like secondary glaucoma which could adversely affect the vision of the patient.

Conclusion

This case has brought into focus the close association between aniridia and ecxtopia lentis. In view of the occurrence of Wilm's tumour as well as other ocular anomalies in aniridia there is need for a multidisciplinary approach in the management of aniridia.

ACKNOWLEDGEMENT

The contribution of other health workers involved in the management of this patient to this work is hereby acknowledged. We are also grateful to the parents of this patient for their cooperation

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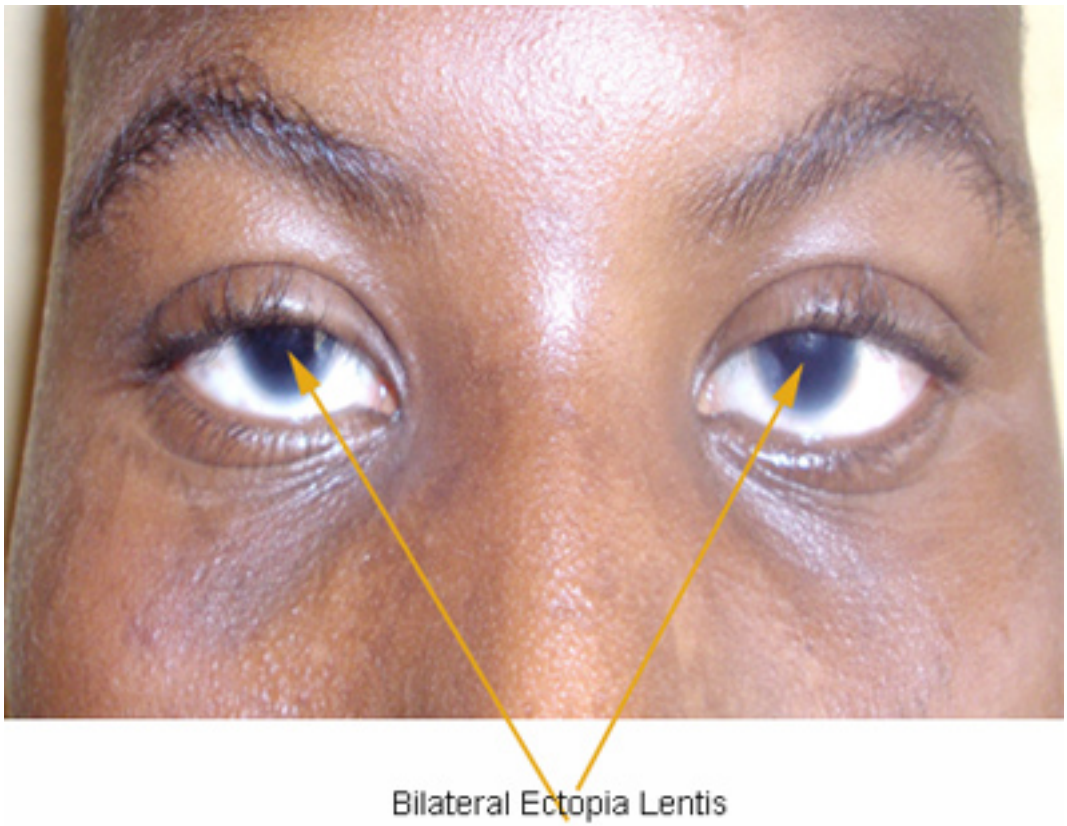
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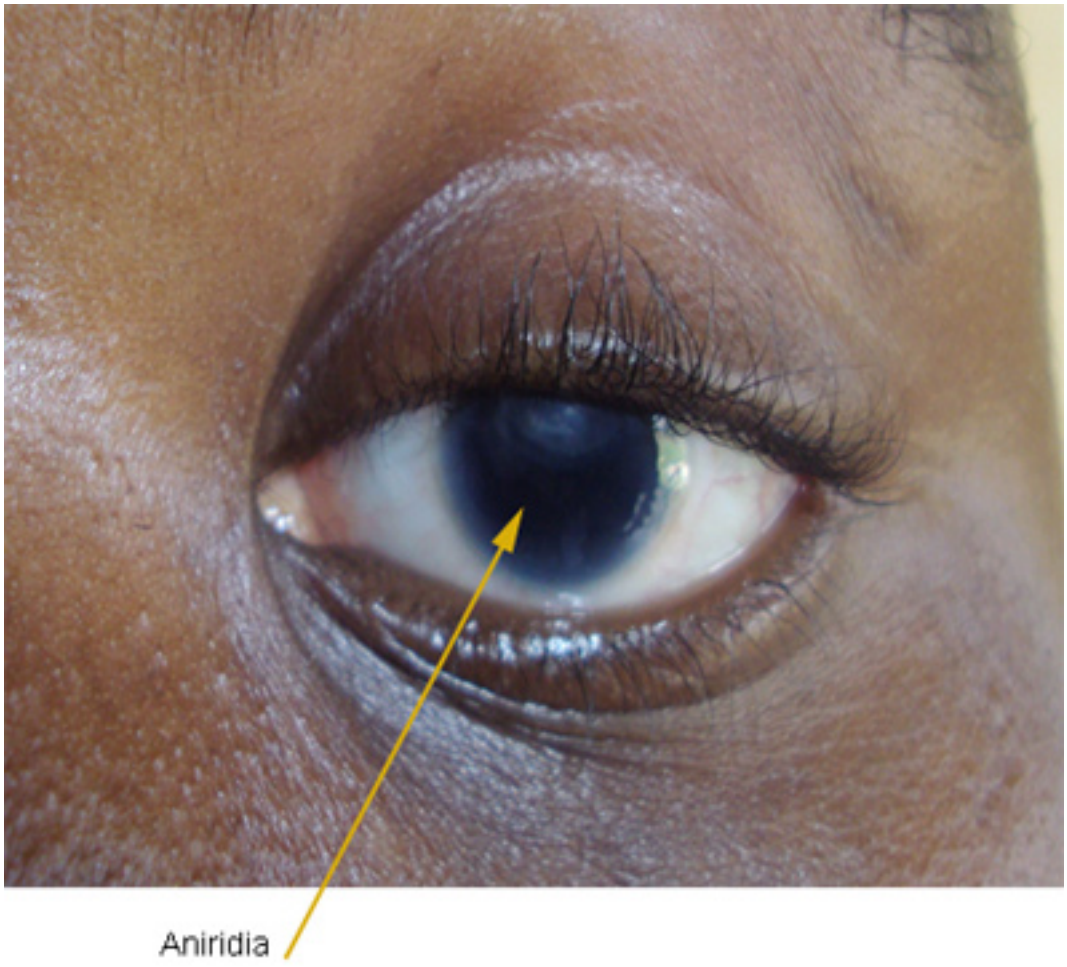
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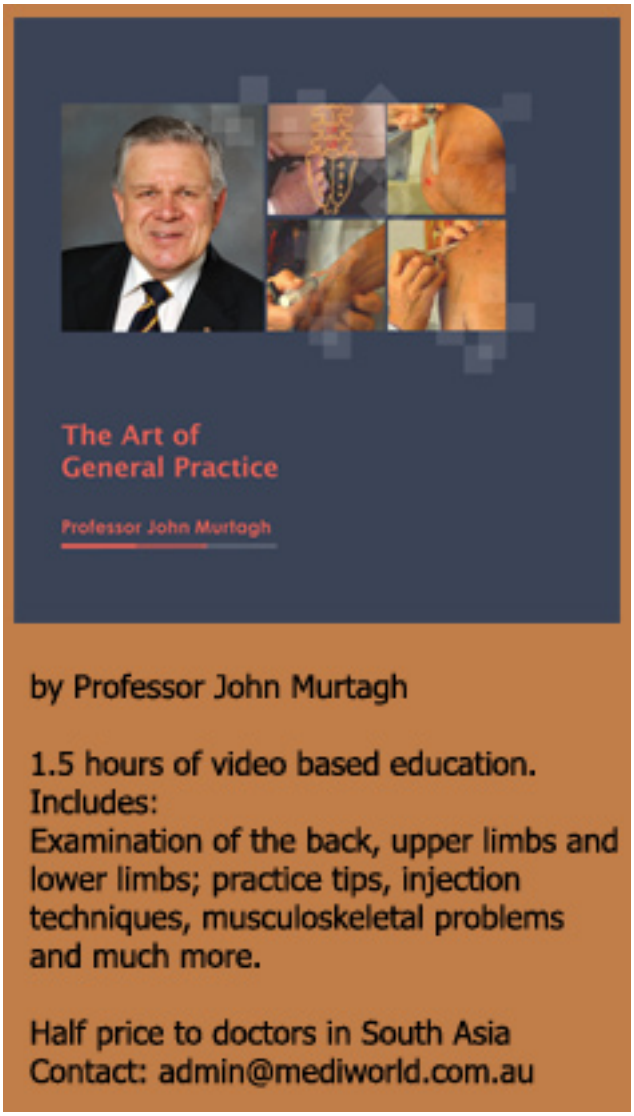
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Coping strategies in Iranian families: Coping and Severity of Behavioural Problems

ABSTRACT

Objective: The aim of this study is assessment of relationship among severity of behavioural problems, coping strategies and styles and investigation of role of gender differences in coping in the Iranian adolescent population.
Method: From six secondary schools students in three districts in Tehran 420 students were randomly selected. Participants were asked to complete SDQ and ACI scales. The collected data were analyzed with Pearson Correlation, Multiple Regression and Independent Sample T-test.
Results: A negative relationship between Solving the problem and Reference to Others coping styles and severity of behavioural disorder was observed. The results indicated that Solving the problem and Non-productive Coping styles (and consequently coping strategies of these two coping styles) can significantly predict severity of behavioural problems. No gender differences in coping were seen.
Discussion: Role of coping in forming behavioural problems for professionals, education systems and families was discussed.

Keywords: behavioural problems; coping styles; coping strategies; gender differences; adolescents, students, Iran

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Introduction

There is growing interest in identifying young children who are at risk for developing behavioural problems. This interest is largely driven by research evidence that shows young children who exhibit behaviour problems, such as aggression and attention difficulties, are at increased risk for continued behavioural difficulties in later childhood and adolescence *(Campbell & Ewing, 1990; White, Moffit, Earls, Robins, & Silva, 1990)*. Moreover, children who have an earlier onset of conduct problems are more likely to demonstrate an increased chronicity and severity of delinquent behaviours than the youth whose onset of conduct problems appears later *(Lahey et al., 1999; Tolan & Thomas, 1995)*.

Given the early onset and relative stability of certain types of behavioural problems, it is important to identify factors that contribute to the emergence of behavioural difficulties in young children for the purpose of early identification and preventive efforts.

Coping is described by *Lazarus and Folkman (1984)* as effortful cognitive and behavioural responses to stressful situations. Coping responses include actions to alter the stressor (problem-focused coping) and to regulate the emotional arousal associated with or evoked by the stressor (emotion-focusing coping). The successful utilization of coping responses facilitates resilience and adaptation to stressful situations *(Garmezy, 1987)*.

Coping is a multidimensional concept with at least two broad categories: coping styles and coping strategies. Coping styles indicate stable dispositions and patterns of responses that people use to deal with difficulties. Arising from this approach are studies conducted to examine the various typologies of coping styles found in individuals. This approach has been heavily criticized for ignoring the idea that coping responses are more situation-specific and that people cope with different situations using different strategies. Lazarus and Folkman (1984) have suggested two broad types of coping strategies: problem-focused and emotion-focused. Problem-focused coping strategies are used to solve an existing problem by either changing the situation, one's behaviour, or both. Emotion-focused coping strategies are employed to regulate emotional reactions or to make one feel better without actually solving the problem. Other researchers have broadened the concept of coping strategies to encompass at least the following elements: problem solving or direct action strategies, cognitive strategies such as positive thinking, avoidance or resignation strategies, and strategies that draw on resources from others such as help-seeking strategies *(Wong, Leung & On So, 2001)*.

Although every change, whether big or small, is stressful and placing demands on the individuals to cope, these changes are not bad or unpleasant at all times. In fact, it may be said that existence of psychological stressors and even severity of them is not per se dysfunctional and maladaptive; what is important is the way or ways used to cope with stressors. Therefore, the strategies that individuals choose are part of their vulnerability profile. Along with this idea, *Anda et al., (1991)* take the increasing number of adolescents that commit suicide or abuse drugs as evidence of the increasing stress of this group and insufficiency of their coping strategies.

Relationship between coping and mental health is a relatively well-researched topic in the literature; however the relationship between coping and behavioural problems in children and adolescents is range