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Prevalence of human papilloma virus positivity and cervical cytology. Is there a new HPV gene? page 9

From the Editor

Chief Editor:
A. Abyad
MD, MPH, AGSF, AFCHSE
Email::
aabyad@cyberia.net.lb
Ethics Editor and Publisher
Lesley Pocock
medi+WORLD International
AUSTRALIA
Email:
lesleypocock@mediworld.com.au
publishermwi@gmail.com

This is the eighth issue this year that has various papers from the region plus a special education section on surgery.

Al Nyazee A.A.Q et al; stressed that human papillomavirus (HPV) infection was the criminalized in cervical cancer. The authors attempted to answer is there any new genome responsible for the cervical cytological changes other than the known high risk human papilloma virus gens. In addition the authors want to raise the awareness about HPV and cervical cancer for motivation and draw attention to make more studies about this subject.

They followed a cross sectional study with a convenient sample of 188 females, information was obtained by interviewing the patient. Pap smear done for all patients, HPV screening, and genotyping test done for 151 patient. Positive HPV Pap smear (Positive HPV Pap) found in 31 (16.5%) patients, while (Positive HPV test) found among 4 cases (2.7%). Negative HPV test/ Positive HPV Pap found among 31 (20.5%). Three HPV gens was detected HPV (16, 18, 65), 2 (50%), 1 (25%), 1 (25%), respectively. The mean age for those had Negative HPV test/ Positive HPV Pap (33.5±8.3), was significantly lower than those had Positive HPV test/ Negative HPV Pap (38.8 ±11.1), and those (Negative HPV/Positive HPV Pap) found among 31 (20.5%). The authors concluded that heterogeneity was common among Iraqi patient, decrease with increasing age. Results suggest presence of new genotype.

Kharel S & Mandira M; et al attempted to know the extent of impairment of lung function in diabetics among urban population around Sinamangal, Kathmandu. To know the variations in the values of the forced vital capacity (FVC) , peak expiratory flow rate (PEFR), forced expiratory volume in the first second (FEV1), and FEV1/FVC percentage among Type 2 Diabetes Mellitus and non-diabetic healthy population. A cross-sectional study was conducted at Kathmandu Medical College, Nepal from September 2018 to February 2019. Adult males, 105 with DM and 105 non-DM healthy matched subjects were enrolled for this study. The results showed that mean FVC, FEF25-75, FEV1, FEV1/FVC% and PEFR were found to be significantly lower in patients with Type 2 DM as compared to non-DM; there were significant differences between mean PFT values among diabetics and non-diabetics ($P < 0.05$). The authors concluded that lungs are affected in patients of diabetes and pulmonary function test should be performed in diabetics in order to prevent further complications which will definitely help in maintaining quality of life.

Helvaci MR et al ;tried to understand whether or not there is a significant relationship between smoking and plasma triglycerides values. The study included 457 cases. Patients with plasma values of triglycerides lower than 100 mg/dL were collected into the first, lower than 150 mg/dL into the second, lower than 200 mg/dL into the third, and 200 mg/dL or higher into the fourth groups, respectively. The mean ages of the groups, body mass index (BMI), and low density lipoproteins increased just up to the plasma triglycerides value of 200 mg/dL, significantly ($p<0.05$ for all). On the other hand, the mean fasting plasma glucose and prevalences of white coat hypertension, hypertension, diabetes mellitus, and chronic obstructive pulmonary disease increased parallel to the plasma triglycerides values from the first towards the fourth groups, gradually. As one of the most surprising results, prevalence of smoking also increased parallel to the plasma values of triglycerides from the first towards the fourth groups, gradually (16.3% versus 42.5%, $p<0.001$). The authors concluded that plasma triglycerides may actually be some acute phase reactants indicating the disseminated endothelial damage, inflammation, fibrosis, and eventual atherosclerosis all over the body. There may be highly significant relationships between plasma triglycerides values and aging, BMI, and smoking up to the plasma triglycerides value of 200 mg/dL, but smoking may be much more important for plasma triglycerides values of 200 mg/dL or greater.

Omer S et al; stressed that There is a rising trend in breast diseases worldwide. The incidence of breast cancer is increasing in the developing country due to increase life expectancy, increase urbanization and adoption of western lifestyle, lack of population awareness, delayed health seeking behavior and low levels of female education. Retrospective study of breast specimens from 354 women was taken from the private modern histology lab and Ibn Sina lab in Aden; between 2006- 2013. The data were collected from the referral sheet. All women with breast cancer underwent Fine Needle Aspiration Cytology (FNAC) or/and biopsy due to the presence of breast cancer for the purpose of diagnosis were included. The results show 44% of the cases was from IBB Governorate, followed by cases from Aden 33%. The age of the women with breast cancers was range from 20 years (youngest patient) to 87 years (oldest patient) with a mean of 46.9 ± 12 years. 56.2% of lumps were in the right breast. Left breast was the next common (41.3%). 3.5% of the cases affecting the both breasts at the time of diagnosis. Overall pattern of breast cancer invasive ductal carcinoma was the commonest finding (57.5%) followed by invasive lobular carcinoma (20%), in situ ductal carcinoma (13.2%) and in situ lobular carcinoma. (3.4%). the less frequent subtypes were, Malignant phyllodes represented (2.3%). Papillary carcinoma, Medullary carcinoma and Mucinous carcinoma were (1.1%) each respectively. The authors concluded that malignant neoplastic breast lesions were seen beyond 4th decade. Invasive carcinoma was the most common malignant tumor among Yemeni women.

A paper from South Africa explored and described perceptions of caregivers regarding inception of assisted care. This study used three questions in its investigation: How do the aged prepared for their ageing? What services constitute the traditional model for care? How would respondents feel if this care was replaced with assisted care that took the form of modernized traditional care? The study used a mixed method, sequential approach in which qualitative data was collected before quantitative data. The quantitative data was used to augment the qualitative data. Data was collected through focused group discussions and questionnaires from 388 respondents ranging in the age from 13 to 72 years and over a period of 5 months i.e. from September 2016 to January 2017. The FGDs were digitally recorded and transcribed verbatim. Quantitative data was entered into the SPSS version 23 and cleaned. The study revealed that the primary role of care givers was to provide care for their aged, that they had no idea how the aged they served prepared for their ageing, and that the idea of assisted care was well received, with strong approval from almost all of the 388 respondents. The author concluded that care givers perceived assisted living as an area where they could learn new skills and have an opportunity to earn money from legitimate work. The study also showed that care givers pay less attention to the work they were doing because it was unpaid.

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Alteration of Pulmonary Functions in Male Adults with Type 2 Diabetes Mellitus

Kharel Sushil (1)
Mainalee Mandira (2)

(1) Assistant Professor, Department of Physiology, Kathmandu Medical College and Teaching Hospital, Nepal
(2) Community Social Worker, Nepal

Corresponding author:
Dr. Sushil Kharel
Assistant Professor, Department of Physiology,
Kathmandu Medical College and Teaching Hospital, Nepal
Email: drsushilkharel@gmail.com

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Abstract

Background: Pulmonary function test is a routine procedure for the assessment and evaluation of respiratory ailments.

Aims and objectives: Diabetes mellitus (DM) is a metabolic disorder leading to various vascular complications. This study was aimed to know the extent of impairment of lung function in diabetics among the urban population around Sinamangal, Kathmandu and to know the variations in the values of the Forced Vital Capacity (FVC), Peak Expiratory Flow Rate (PEFR), Forced Expiratory Volume in the first second (FEV1), and FEV1/FVC percentage among Type 2 Diabetes Mellitus and non-diabetic healthy population.

Methods: A cross-sectional study was conducted at Kathmandu Medical College, Nepal, from September 2018 to February 2019. Adult males, 105 with DM and 105 non-DM healthy matched subjects were enrolled for this study. After obtaining informed written consent, all were evaluated for anthropometric parameters, blood sugar (fasting and post prandial), and pulmonary functions (using digital spirometer). Results were analyzed by calculating Mean ± SD, using Student's t test, Karl Pearson correlation and ANOVA test.

Results: Mean FVC, FEF25-75, FEV1, FEV1/FVC% and PEFR were found to be significantly lower in patients with Type 2 DM as compared to non-DM; there were significant differences between mean PFT values among diabetics and non-diabetics ($P < 0.05$).

Conclusion: Lungs are affected in patients of diabetes and pulmonary function test should be performed in diabetics in order to prevent further complications which will definitely help in maintaining quality of life.

Key words: Type 2 Diabetes Mellitus, Pulmonary Function Test (PFT), Spirometer.

Introduction

Diabetes mellitus (DM) is a systemic disease that causes various pathophysiological alterations in different organ systems and the multiple complications affecting these systems is responsible for the vital cause of morbidity and mortality associated with the disease (1). Diabetes is one of the most common metabolic disorders which is increasing day by day. As stated by the International Diabetes Federation, diabetes affects at least 285 million people worldwide, and the number is expected to reach 438 million by the year 2030, with two-thirds of all diabetes patients in low- to middle-income countries (2). DM is known to cause various metabolic, micro and macro vascular abnormalities as well as disruptions in the normal functioning of many organ systems such as the kidneys, nerves, respiratory and the cardiovascular system (3). Diabetes is not associated with any specific pulmonary signs and symptoms and hence routine screening for pulmonary disease is usually not done in diabetic patients. However broad micro-vascular circulation and extensive connective tissue in the lung raise the probability that the lung may also be a target organ in diabetic patients (4, 5). In subjects with type 2 diabetes mellitus, there is evidence of the involvement of lungs demonstrating thickened alveolar walls, capillary walls and the arteriolar walls, all of which could result in pulmonary ailments (6). Decreased elastic recoil, reduced respiratory muscle performance, reduced lung volume, autonomic alterations occurring in respiratory muscles are a few significant changes taking place in Diabetes Mellitus (7). Although many studies are being carried out on the after effects of diabetes mellitus on lung functions, the literature pertaining to this is not in abundance in Nepal. Therefore this study was undertaken to find out the effects of diabetes mellitus on lung function tests in patients with Type 2 Diabetes Mellitus who attended to medical OPDs of Kathmandu Medical College.

Methods

After obtaining ethical clearance, the study was carried out in 105 diabetic male subjects attending the outpatient department (OPD)/ward at Kathmandu Medical College Teaching Hospital, Nepal and 105 normal healthy subjects belonging to the same sex were taken as a control group. Previously diagnosed diabetic patients of more than 5-years duration, non- smokers, with no past history of any respiratory ailments and ruled out cardiovascular diseases were enrolled. Patients with acute or chronic respiratory disease or cardio respiratory disease, with history of smoking or tobacco chewing were excluded in this study.
Pulmonary Function Tests were performed using a computerized Spirometer, self-calibrating, which fulfilled the criteria for standardized pulmonary function tests. All tests were done according to American Thoracic Society/ European Respiratory Society (ATS/ERS) guidelines in a quiet room in sitting position by trained personnel (8). After taking detailed history and relevant clinical examination, informed written consent was taken. Then anthropometric parameters like height and weight were measured and recorded. Each subject was instructed to visit the laboratory with 6 hours of fasting on a specific date; the blood samples (3 ml volume) was drawn for estimation of fasting blood sugar. After explaining and demonstrating the technique for carrying out lung function tests, subjects were made to undergo lung function tests using digital spirometer 3 times at 15 minutes interval. The forced vital capacity (FVC), forced expiratory volume in 1 second (FEV_1), and peak expiratory flow rate (PEFR), FEV_1/FVC, FEF 25-75% were recorded. The subject was instructed to give a blood sample for post prandial estimation of blood sugar 2 hours after the meal.

Results

We studied 105 type 2 diabetic patients and 105 non-diabetic patients. Type 2 DM patients and controls were selected by applying inclusion and exclusion criteria using random sampling method. Detailed anthropometric and physiological data were collected after giving written consent; spirometry was performed and Forced vital capacity (FVC), Forced expiratory volume in 1 second (FEV_1), & FEV_1/FVC were recorded. Peak expiratory flow rate (PEFR) and FEF 25-75% were recorded and analyzed. The results were assessed and evaluated with age and matched control (non-diabetic) subjects. Statistical analysis was done by calculating Mean ± SD, using Student's t test, Karl Pearson correlation and ANOVA test.

The physical variables of the Type 2 DM and the non-DM (control group) are shown in Table 1. Age range of the subjects was 41 – 68 years with mean age of DM 58.46 ± 7.56 and of the non-DM 56.45± 6.44 years. Mean height of diabetic group was 1.66 ± 0.08 meters and of non-diabetic group was1.69 ± 0.14 meter. Whereas, mean weight of diabetic was 68 ± 7.63 Kg and non-diabetic 62 ± 5.69 Kg. A total of 210 males, 105 diabetics and 105 non-diabetics matched for age, height and weight were enrolled in this study. From the result, the FEV_1, FVC, FEF, FEV_1/ FVC ratios were obtained and analyzed. The mean difference in values for pulmonary function was highly significant ($P < 0.05$) between diabetics and non-diabetics. The mean FVC in diabetics was 2.10 ± 0.72 L and in non-diabetics was 2.50 ± 0.74 L (Table 2). The decrease in FEV_1 in diabetics (1.49 ± 0.53) as compared to non-diabetics (2.02 ± 0.38) clearly indicates obstructive pulmonary disease (Figures 1 & 2).

Table 1: Physical characteristics of diabetics and non-diabetics

S No	Variables	Diabetics (Mean ± SD)	Non-diabetics (Mean ± SD)
1	Age (Years)	58.46 ± 7.56	56.45± 6.44
2	Height (meters)	1.66 ± 0.08	1.69 ± 0.14
3	Weight (Kg)	68 ± 7.63	62 ± 5.69

Table 2: Comparison of variations in pulmonary function test (PFT) among DM and non-DM group

S No	Pulmonary Function Test	Diabetes Mellitus (DM) Group (Mean ± SD)	Non-DM group (Control) (Mean ± SD)	P Value
1	FVC (L)	2.10 ± 0.72	2.50 ± 0.74	P < 0.05
2	FEF_{25-75} (L/S)	2.03 ± 0.43	2.53 ± 1.05	P < 0.05
3	PEFR (L/S)	3.95 ± 0.35	5.27 ± 0.43	P < 0.05
4	FEV1(L)	1.49 ± 0.53	2.02 ± 0.38	P < 0.05
5	FEV1 /FVC (%)	72.45 ± 10.83	83.13 ± 13.57	P < 0.05

The difference in values of FVC, FEF_{25-75}, PEFR, FEV_1, FEV_1/FVC ratio found in the two groups was statistically significant (P < 0.05).

Figure 1: Mean Forced Vital Capacity (FVC) and FEV1 compared between Diabetes Mellitus (DM) and non-DM Subjects in Litres.

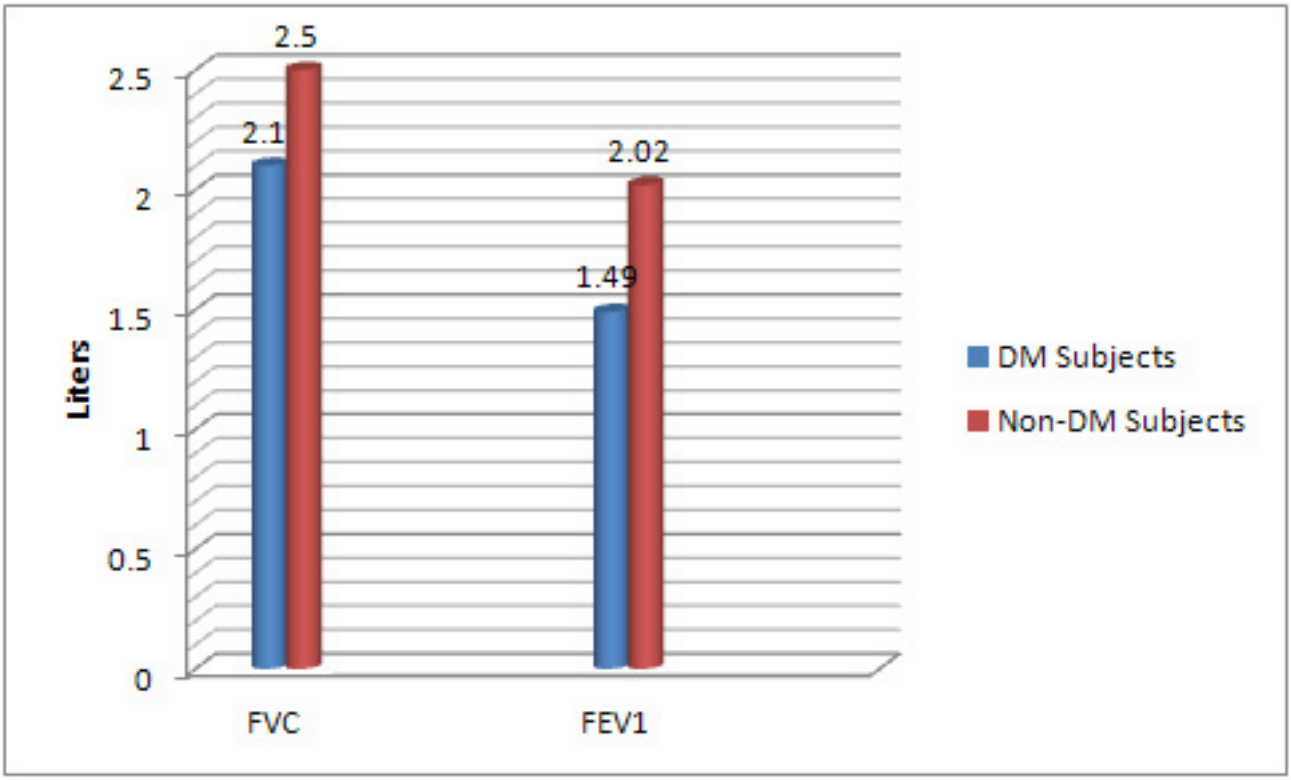
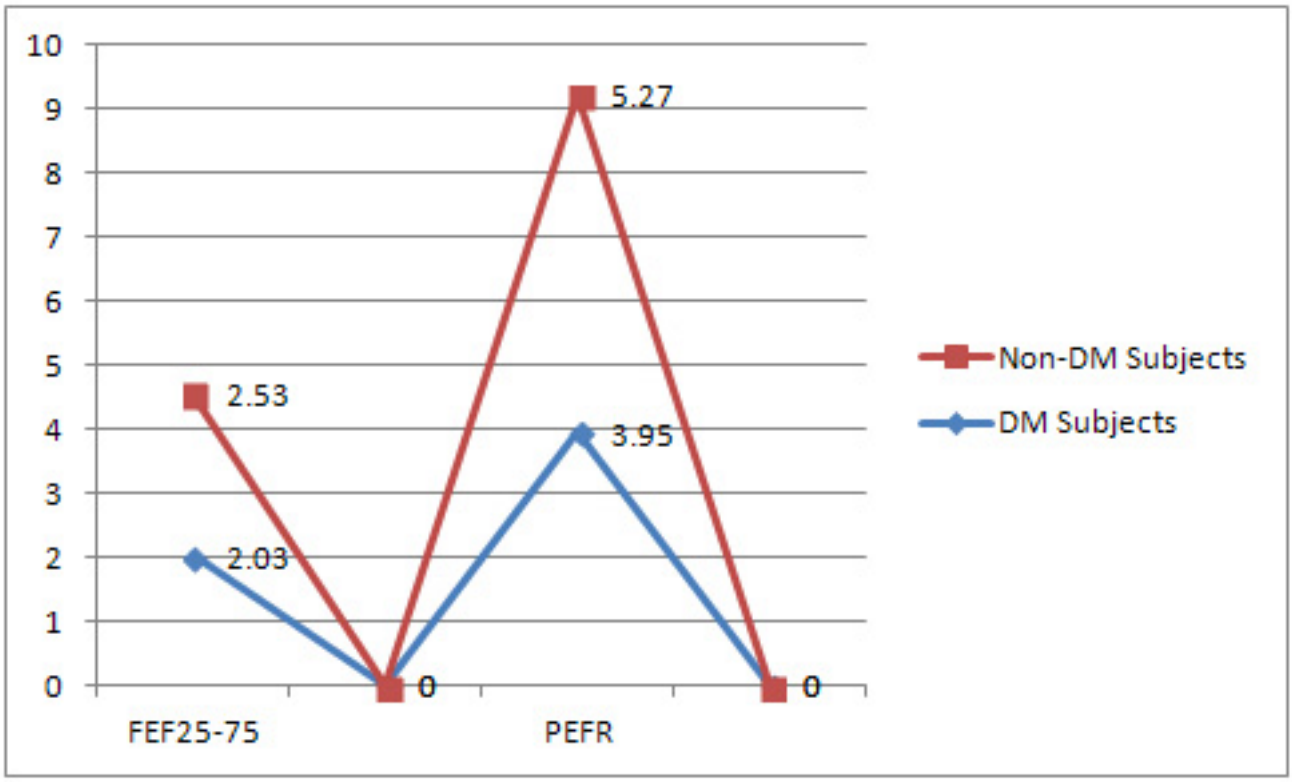


Figure 2: Mean Forced Expiratory Flow between 25% to 75% (FEF_{25-75}) and (Peak Expiratory Flow Rate) PEFR compared between Diabetes Mellitus (DM) and non-DM Subjects (Control group) in Litres/second.



Discussion

Our study showed that there was a highly significant difference between mean values of FVC, FEV1, FEV_1/FVC, PEFR and FEF 25-75% (i.e. $p<0.05$) in patients with type 2 DM and Controls (non-diabetic) group. In a similar study conducted by Shravya Keerthi et al the mean FVC, FEV_1, FEV1/FVC%, PEFR, FEF 25-75% values were reduced in subjects with type 2 DM (p value <0.05) compared to non-diabetics (9). This study is in relation to our study. Similar to our study Gregory L. Kinney et al found a remarkable reduction in FVC, FEV1 with type 2 diabetes (10). Anasuma et al and Lange et al have also discovered that FEV_1 and FVC are decreased in patients with type 2 diabetes mellitus than in normal control subjects (11, 12). Unlike our study, Benbassat et al in his study published in 2001 titled "pulmonary function in patient with diabetic mellitus" stated no changes in lung function tests in diabetic and non diabetic patients. But, he had very few study subjects, (27) and the mean age group was also less (48 years) (13). Yamane et al, in their study found that decreased vital capacity independently predicts the onset of type 2 diabetes mellitus. It is also recommended that vital capacity is attributed to an important risk factor for developing insulin resistance and diabetes mellitus (14).

Conclusion

The present study concludes that the lung is a major target organ for damage in type 2 diabetes mellitus and the disease is responsible for reduced lung functions.

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Prevalence of human papilloma virus positivity and cervical cytology. Is there a new HPV gene?

Asan Ali Qasim Al Niyazee (1)
Sarab K.Abedalrahman (1)
Zeena N. Abdulrahman (2)
Islam A.R. Zadawy (3)

(1) Al-Alwiyaa Maternity Teaching Hospital, Women Health Center
(2) Department of Community Medicine, College of Medicine, Tikrit University
(3) Tikrit College of Medicine

Corresponding author:
Sarab K.Abedalrahman
Al-Alwiyaa Maternity Teaching Hospital, Women Health Center
Iraq
Email: sara.k.abed@gmail.com

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Abstract

Background: Human Papillomavirus (HPV) infection has been incriminated in cervical cancer. Twenty of more than 100 types were classified as high-risk (HR), and associated with cervical cancer and precancerous lesions. The great question that this article wants to answer is, is there any new genome responsible for the cervical cytological changes other than the known high risk human papilloma virus gene. The second aim of this study is to raise awareness about HPV and cervical cancer and to draw attention to the need for more studies about this subject.

Materials and method: A cross sectional study with a convenience sample of 188 females was used. Information was obtained by interviewing the patients. Pap smear was done for all patients. HPV screening, and genotyping test was done for 151 patients.

Results: Positive HPV Pap smear (Positive HPV Pap) was found in 31 (16.5%) patients, while (Positive HPV test) was found among 4 cases (2.7%). Negative HPV test/Positive HPV Pap was found among 31 (20.5%). Three HPV genes were detected HPV (16, 18, 65), 2 (50%), 1 (25%), 1 (25%), respectively. The mean age for those who had Negative HPV test/Positive HPV Pap (33.5±8.3), was significantly lower than those had Positive HPV test/Negative HPV Pap (38.8 ±11.1), and those (Negative HPV/Positive HPV Pap) was found among 31 (20.5%). Three HPV genes were detected HPV 16, 18, 65, 2 (50%), 1 (25%), 1 (25%), respectively. The mean age for those who had (Negative HPV/ Positive HPV Pap) (33.5±8.3), was significantly lower than those who had Positive HPV/Negative HPV Pap (38.8 ±11.1), and those with (Negative HPV/Negative Pap) (41.2±118).

Conclusion: Heterogeneity was common among Iraqi patients, decreasing with increasing age. Results suggest presence of a new genotype.

Key words: cervical cancer, human papilloma virus, HPV genotype, HPV test and cytological changes.

Introduction

About 80% of cervical CA is occurring in developing countries, and age standardized mortality rate of cervical cancer in Iraq is 1.3 per 100,000/per year. HPV is blamed as the main causation of cervical cancer. About 11.4 million females above the age of 15 years in Iraq, with age standardized incidence of cervical cancer and is 1.9 per 100,0001). Current recommendation is performing of HR-HPV testing with routine cytology screening in women 30 years and older (2). HPV is more prevalent and transient among females aged < 30 years with low incidence of invasive cervical cancer. HPV prevalence decreased with increasing age(3,4).

More than 100 HPV types have been described, and 40 can infect the ano-genital tract(5). Genital HPV types are categorized according to their association with cervical cancer (6). Productive HPV infection may cause mild cellular changes called Low grade squamous intraepithelial lesion (LSIL), or loss of normal cell cycle control, epithelium and genetic instability, resulting in high grade squamous intraepithelial lesions (HSIL)(7) About 20 are classified as high risk (HR) types and are associated with cervical cancer and precancerous lesions, as well as low-grade cervical pathology.

Worldwide, HPV types 16 and 18 cause 70% of cervical cancers; HPV types 31, 33, 35, 45, 52 and 58 account for an additional approximately 20% of cases, although there is substantial geographical variation in the relative frequency of different HR types(8)

Cells exhibit dysplasia (multiple cytological changes) before development of cervical cancer. This dysplasia has multiple names based on the diagnostic methods: SIL (squamous intraepithelial lesion) and CIN (cervical squamous intraepithelial neoplasia)(9).

Squamous intraepithelial lesion (SIL) is a term that represents dysplasia of cervical cells when diagnosed by Pap smear (cervical cytology); it is classified on the basis of dysplasia severity to : mild dysplasia termed as (low-grade intraepithelial lesion (LSIL), and moderate or severe dysplasia termed as (high-grade intraepithelial lesion (HSIL); both of which may or may not progress to cancer. One of the findings of a cervical biopsy is CIN which are abnormal cervical cells. CIN may change to cancer and extends to surrounding normal tissue and is graded on the basis of a scale of 1-3, established on degree of microscopic cellular abnormalities' appearance and degree that cervical tissue is influenced.

CIN1, mildly abnormal cells, frequently resolve spontaneously without therapy. Sometimes it becomes cancer and extends to surrounding normal tissue. CIN1 is sometimes known as mild dysplasia or low-grade dysplasia.

CIN 2, moderately abnormal cells located on the cervical surface is not cancer, but may change to cancer and extend to surrounding normal tissue, without treatment. CIN treatment may include: cryotherapy, laser therapy, loop electrosurgical procedure (LEEP), or cone biopsy to remove or destroy the abnormal tissue. CIN 2 is sometimes known as moderate dysplasia or high-grade dysplasia.

CIN 3, severely abnormal cells are present on the cervical surface when cervical biopsy is done. Without treatment, these severely abnormal cells may become cancer and extend to surrounding normal tissue. CIN 3 treatment is composed of cryotherapy, laser therapy, loop electrosurgical procedure (LEEP), or cone biopsy to remove or destroy the abnormal tissue. CIN 3 is sometimes known as severe dysplasia high-grade dysplasia (9).

LSIL is equal to the CIN1, while the diagnosis of HSIL, may reveal when diagnosed histologically, CIN2, and CIN3(10).

In Iraq very little data is available about HPV prevalence and cervical cytological changes. This study noticed that most of the patients with positive cytological changes have negative HPV test.

The 1st aim of this research is to study the correlation between HPV testing with cytological changes stratified by age. The great question that this article wants to answer is, is there any new genome responsible for the cervical cytological changes other than the known high risk human papilloma virus genes.

The second aim of this study is to raise awareness about HPV and cervical cancer to draw attention to it and for motivation and to make more studies about this subject.

Materials and methods

A cross sectional study was done of 188 females who attended the women health center at Al-Elwyia Teaching Obstetrics Hospital, from 1st January-30th December 2018. All patients attending the center during the period were included. Information regarding residence, parity, smoking, and occupation was obtained by interviewing the patient. Pap smear was done for all patients, using the conventional method; cytological study was done by local cytopathology service. HPV screening and genotyping test was done only for 151 patients. HPV screening and genotyping was done in Central Public Health Laboratory/ Molecular Biology Department using the PCR genotyping by chip technology. Genotypes detected by the test were, High risk human papilloma virus (HR-HPV) genotypes 16, 18, 31, 33, 35, 39, 45, 52, 56, 58, 59, 66 in the cervical swabs and low risk human papilloma virus (LR-HPV) genotypes 6, 11, 40, 42, 43, 44/45. Data entry and analysis was done using SPSS 25. The student t-test to compare means, and chi-square test was used to compare frequencies.

Results

Positive HPV Pap was found in 31 (16.5%) females and all of them (100%) had Negative HPV test. Another 4 patients (2.5%) had Negative HPV Pap but surprisingly had Positive HPV test; this relation was statistically significant (P value 0.0001), as shown in Table 1.

Table 1: The correlation between HPV test and cytological changes

		HPV test			Total
		Positive	Negative	Not done	
HPV Pap	Yes	0	31	0	31
		0%	100%	0.0%	16.5%
	No	4	116	37	157
		2.5%	73.9%	23.6%	83.5%
Total		4	147	37	188
		2.10%	78.20%	19.7%	100%

Likelihood Ratio=16.89, df=2, P value= 0.0001

The mean age for those who had Positive HPV test/ Negative HPV Pap was (38.8 ±11.1), those who had Negative HPV/Positive HPV Pap was (33.5±8.3), and those with Negative HPV/Negative Pap was (41.2±118). This relation was statistically significant, as shown in Table 2.

Table 2: The mean age according to the HPV changes in pap cytology and HR-HPV test

Age	N	Mean	SD	Minimum	Maximum
HPV test+/Pap –ve	4	38.8	11.2	23.00	48.00
HPV test-ve/pap +ve	31	33.5	8.3	20.00	49.00
HPV test -ve/pap-ve	114	41.2	11.8	20.00	70.00
Total	149	39.5	11.5	20.00	70.00

F=5.85, df=2, P=0.004 (significant) (One way ANOVA test)

From 151 patients those who had Positive HPV test/ Negative HPV Pap was 4 (2.7%), Negative HPV test/ Positive HPV Pap 31(20.5%), and Negative HPV/Negative Pap 116 (76.8%). The four Positive HPV test cases had the HPV genes HPV 16, 18, 56, 2 (50%), 1(25%), and 1(25%), respectively.

Positive HR-HPV was found among 1 (1.1%), 1 (2%), 1 (16.7%), 1 (20%), of ASCUS, Low-grade squamous intra-epithelial lesion (LSIL), High-grade squamous intra-epithelial lesions (HSIL), and cervical cell carcinoma, respectively. Heterogeneity found among 10 (11.2%), 18 (35.3%), 1 (16.7%), and 2 (40%) of ASCUS, Low-grade squamous intra-epithelial lesion (LSIL), High-grade squamous intra-epithelial lesions (HSIL), and cervical cell carcinoma, respectively. This relation was statistically significant, as shown in Table 3.

Table 3: The correlation between HR-HPV test and Cytological findings

	Correlation			Total
	HPV+/Pap -ve	HPV-ve/pap +ve	HPV -ve/pap-ve	
ASCUS	1	10	78	89
	1.10%	11.20%	87.60%	100.00%
Low-grade squamous intra-epithelial lesion (LSIL)	1	18	32	51
	2.00%	35.30%	62.70%	100.00%
High-grade squamous intra-epithelial lesions (HSIL)	1	1	4	6
	16.70%	16.70%	66.70%	100.00%
Carcinoma	1	2	2	5
	20.00%	40.00%	40.00%	100.00%
Total	4	31	116	151
	2.60%	20.50%	76.80%	100.00%

Likelihood Ratio= 18.96, P =0.004

Discussion

Surprisingly we found that only 4 cases (2.7%) had Positive HPV test of the total number of patients, and this was lower than what was found previously in Iraq, (26.7%)(11), (12.4%)(12), (23%)(13). This is also lower than what reported in other countries; in China (36%)(14) Cameroon (39%)(15), and Gabon (41.5%)(15). This raises the question, is there a new HPV gene that produces the cytological changes without producing HPV test positivity. The results of this study revealed Positive HPV Pap among (16.5%) of patients. This is the 1st and pioneer research that study the correlation between HPV test and HPV Pap cytological changes. The detected 4 genome were as follows; 2 patients had HPV genotype 16, (25%) HPV genotype 18, and (25%) HPV genotype 56. This low number of patients with HPV genome, is still lower than previous Iraqi research on low HPV with consideration of small sample size (11-13). Concerning HPV genotype, this study revealed that 16, 18 HPV genotype was responsible for 3 cases (1.98%) of positive cytological changes that do not have HPV specific changes . Here we should mention that globally 16, 18 HPV genotype is responsible for more than 70% of the cervical cancers, (51.9%) of (HSIL), (25.8%) of (LSIL), and (4.1%) of the normal cytovlogy(15).

Negative HPV test/Positive HPV Pap was found among 31(20.5%). This heterogeneity was significantly related to HPV cytological abnormality. Heterogeneity was 35.3% among Low-grade squamous intra-epithelial lesion (LSIL). This result also is lower than results of Iraqi previous studies (71.42%)(11), (80%)(12). Heterogeneity was also found among (16.7%), and (40%) of High-grade squamous intra-epithelial lesions (HSIL), and cervical cell carcinoma, respectively. This is higher than what was reported previously in Iraq CIN2 (15%) (12), (25%) (11), and cervical carcinoma (5%)(12), (0%)(11).

Positive HPV test was found among (1.1%), (2%), (16.7%), (20%), of ASCUS, Low-grade squamous intraepithelial lesion (LSIL), High-grade squamous intraepithelial lesions (HSIL), and cervical cell carcinoma, respectively. This was lower than found by previous studies in Iraq; non-cancerous (9.7%), CIN1 (28.57%)(11),(18.75%)(12),CIN2 (75%)(11), (33.4%)(12), CIN3 (100%)(11), cervical carcinoma (100%)(11,12). The prevalence of HPV in this study was lower than reported in the world CIN1 (77.5%)(16), CIN2 (89.7%)(16), CIN3 (95.1%)(16_, cervical cancer (88.5%)(17), (95%)(18). The percentages of HPV prevalence increased with the grade of the lesion; this finding is concordance with previous studies(11,12,16).
HPV test is more sensitive and specific for CIN2 and CIN3, than cytological changes, and the low prevalence of the positive test also supports the opinion of presence of HPV genotypes responsible for the cervical changes other than the High and low risk HPV genes(19). The mean age for those who had Positive HPV/Positive HPV Pap (33.5±8.3), was significantly lower than those who had Positive HPV/ Negative HPV Pap (38.8 ±11.1), and those Negative HPV/ Negative HPV Pap (41.2±118). The above results of lower HPV prevalence, heterogeneity, and difference in age distribution, may indicate presence of HPV genotypes other than those tested which were the cause of cervical cytological abnormality. As cancer rates are increasing in Iraq, with advanced stage at diagnosis, and absence of population based screening programs for preventable cancers (20,21), this study indicates the urgent need for more sophisticated study of the HPV genotypes in Iraq other than the HR-HPV and LR-HPV genotypes to make a database for preventive and screening programs.

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Smoking may be a cause of hypertriglyceridemia

Mehmet Rami Helvaci (1)
Onder Tonyali (1)
Abdulrazak Abyad (2)
Lesley Pocock (3)

(1) Specialist of Internal Medicine, MD
(2) Middle-East Academy for Medicine of Aging, MD, MPH, MBA, AGSF
(3) medi+WORLD International

Corresponding author:
Dr Mehmet Rami Helvaci,
07400, ALANYA,
Turkey
Phone: 00-90-506-4708759
Email: mramihelvaci@hotmail.com

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Abstract

Background: We tried to understand whether or not there is a significant relationship between smoking and plasma triglycerides values.

Methods: Patients with plasma values of triglycerides lower than 100 mg/dL were collected into the first, lower than 150 mg/dL into the second, lower than 200 mg/dL into the third, and 200 mg/dL or higher into the fourth groups, respectively.

Results: The study included 457 cases (266 females), totally. The female ratio was decreased from the first towards the fourth groups (64.1% versus 49.4%, p<0.01), gradually,. whereas the mean ages of the groups, body mass index (BMI), and low density lipoproteins increased just up to the plasma triglycerides value of 200 mg/dL, significantly (p<0.05 for all). On the other hand, the mean fasting plasma glucose and prevalence of white coat hypertension, hypertension, diabetes mellitus, and chronic obstructive pulmonary disease increased parallel to the plasma triglycerides values from the first towards the fourth groups, gradually. As one of the most surprising results, prevalence of smoking also increased parallel to the plasma values of triglycerides from the first towards the fourth groups, gradually (16.3% versus 42.5%, p<0.001).

Conclusions: Plasma triglycerides may actually be some acute phase reactants indicating the disseminated endothelial damage, inflammation, fibrosis, and eventual atherosclerosis all over the body. There may be highly significant relationships between plasma triglycerides values and aging, BMI, and smoking up to the plasma triglycerides value of 200 mg/dL, but smoking may be much more important for plasma triglycerides values of 200 mg/dL or greater.

Key words: Smoking, triglycerides, acute phase reactant, chronic endothelial damage, accelerated atherosclerosis

Introduction

Chronic endothelial damage may be the most common kind of vasculitis and the leading cause of early aging and premature death in human beings (1-4). Much higher blood pressure (BP) of the afferent vasculature may be the major underlying cause by inducing recurrent injuries on endothelium, and probably whole afferent vasculature including capillaries are mainly involved in the process. Therefore the term of venosclerosis is not as famous as atherosclerosis in the literature. Secondary to the chronic endothelial damage, inflammation, edema, and fibrosis, vascular walls thicken, their lumens narrow, and they lose their elastic nature which reduces blood supply to terminal organs and increases systolic BP further. Some of the well-known components of the inflammatory process are sedentary life style, animal-rich diet, overweight, smoking, alcohol, hypertriglyceridemia, hyperbetalipoproteinemia, dyslipidemia, impaired fasting glucose, impaired glucose tolerance, white coat hypertension (WCH), and chronic inflammatory processes including rheumatologic disorders, chronic infections and cancers for the development of irreversible consequences including obesity, hypertension (HT), diabetes mellitus (DM), cirrhosis, peripheric artery disease (PAD), chronic obstructive pulmonary disease (COPD), chronic renal disease (CRD), coronary heart disease (CHD), mesenteric ischemia, osteoporosis, and stroke (5-9). Although early withdrawal of the underlying causes may prevent terminal consequences, after development of cirrhosis, COPD, CRD, CHD, PAD, or stroke, endothelial changes cannot be reversed completely due to their fibrotic nature. The underlying causes and terminal consequences were researched under the titles of metabolic syndrome, aging syndrome, or accelerated endothelial damage syndrome in the literature, extensively (10-13). Although its normal limits have not been determined clearly yet, higher plasma triglycerides values may be significant indicators of the metabolic syndrome (14). Due to the growing evidence about the strong association between higher plasma triglycerides and prevalence of CHD, Adult Treatment Panel (ATP) III adopts lower cutoff points for triglycerides abnormalities than did ATP II (15, 16). Although ATP II determined the normal triglycerides value as lower than 200 mg/dL in 1994, the World Health Organisation in 1999 (17) and ATP III in 2001 reduced its normal limit as lower than 150 mg/dL (15). Although these cutoff points are usually used to define limits of the metabolic syndrome, there are suspicions about the safest limits of plasma triglycerides values in the literature. Beside that, smoking may be found among one of the most common causes of vasculitis all over the world. It is a major risk factor for the development of atherosclerotic endpoints including CHD, PAD, COPD, cirrhosis, CRD, and stroke (18, 19). We tried to understand whether or not there is a significant relationship between smoking and plasma triglycerides values in the present study.

Material and Methods

The study was performed in the Internal Medicine Polyclinic of the Dumlupinar University between August 2005 and March 2007. Consecutive patients above the age of 15 years were studied. Their medical histories including HT, DM, COPD, and already used medications were learnt, and a routine check up procedure including fasting plasma glucose (FPG), triglycerides, and low density lipoproteins (LDL) was performed. Current daily smokers with six pack-months and cases with a history of three pack-years were accepted as smokers. Patients with devastating illnesses including type 1 DM, malignancies, acute or chronic renal failure, chronic liver diseases, hyper- or hypothyroidism, and heart failure were excluded to avoid their possible effects on weight. Additionally, anti-hyperlipidemic drugs, metformin and/or acarbose users were excluded to avoid their possible effects on blood lipid profiles and/or weight (20, 21). Body mass index (BMI) of each case was calculated by the measurements of the Same Physician instead of verbal expressions. Weight in kilograms is divided by height in meters squared (15). Cases with an overnight FPG level of 126 mg/dL or greater on two occasions or already using antidiabetic medications were defined as diabetics (15). An oral glucose tolerance test with 75-gram glucose was performed in cases with a FPG level between 110 and 126 mg/dL, and diagnosis of cases with a 2-hour plasma glucose level of 200 mg/dL or greater is DM (15). Additionally, office blood pressure (OBP) was checked after a 5-minute rest in seated position with a mercury sphygmomanometer on three visits, and no smoking was permitted during the previous 2 hours. A 10-day twice daily measurement of blood pressure at home (HBP) was obtained in all cases, even in normotensives in the office due to the risk of masked HT after a 10-minute education session about proper BP measurement techniques (22). An additional 24-hour ambulatory blood pressure monitoring was not required due to its similar effectivity with the HBP measurements (3). Eventually, HT is defined as a mean BP of 135/85 mmHg or greater on HBP measurements, and WCH as an OBP of 140/90 mmHg or greater but a mean HBP measurement of lower than 135/85 mmHg (22). The spirometric pulmonary function tests were performed in required cases and the criterion for diagnosis of COPD is post-bronchodilator forced expiratory volume in one second/forced vital capacity of less than 70% (23). Eventually, patients with plasma triglycerides values of lower than 100 mg/dL were collected into the first, lower than 150 mg/dL into the second, lower than 200 mg/dL into the third, and 200 mg/dL or higher into the fourth groups, respectively. The female ratio, mean age, BMI, FPG, triglycerides, and LDL, and prevalence of smoking, WCH, HT, DM, and COPD were detected in each group and compared in between. Mann-Whitney U test, Independent-Samples T test, and comparison of proportions were used as the methods of statistical analyses.

Results

The study included 457 cases (266 females and 191 males), totally. The female ratio was decreased from the first towards the fourth groups (64.1% versus 49.4%, p<0.01), gradually. Whereas the mean ages of the groups, BMI, and LDL increased just up to the plasma triglycerides value of 200 mg/dL, significantly (p<0.05 for all). On the other hand, the mean FPG and prevalence of WCH, HT, DM, and COPD increased parallel to the plasma triglycerides values from the first up to the fourth groups, gradually. As one of the most surprising results, prevalence of smoking also increased parallel to the plasma values of triglycerides from the first towards the fourth groups, gradually (16.3% versus 42.5%, p<0.001) (Table 1).

Table 1: Characteristic features of the study cases according to plasma values of triglycerides

Variable	Lower than 100 mg/dL	*p*-value	Lower than 150 mg/dL	*p*-value	Lower than 200 mg/dL	*p*-value	200 mg/dL or higher
Number	159		133		78		87
Mean age	*40.6 ± 17.6 (16-83)*	*0.001*	*46.9 ± 15.9 (16-82)*	*0.014*	*51.7 ± 11.8 (23-73)*	Ns*	50.5 ± 12.3 (21-86)
Female ratio	*64.1%*	Ns	57.8%	Ns	56.4%	Ns	*49.4%*
Prevalence of smoking	*16.3%*	*0.05>*	*23.3%*	Ns	*28.2%*	*0.01>*	*42.5%*
Mean BMI†	*26.7 ± 5.6 (16.7-49.3)*	*0.000*	*29.5 ± 6.0 (18.4-50.5)*	Ns	30.0 ± 4.9 (19.2-49.0)	Ns	29.7 ± 4.7 (21.0-42.9)
Mean value of FPG‡	*102.7 ± 40.3 (59-341)*	Ns	102.7 ± 26.6 (71-244)	*0.009*	*114.6 ± 43.6 (68-320)*	Ns	*117.1 ± 42.1 (80-287)*
Mean value of triglycerides	*70.3 ± 16.4 (27-99)*	*0.000*	*120.8 ± 14.8 (100-149)*	*0.000*	*174.6 ± 14.9 (150-199)*	*0.000*	*304.8 ± 118.7 (200-1.144)*
Mean value of LDL§	*109.7 ± 33.7 (43-269)*	*0.000*	*132.1 ± 31.8 (64-228)*	*0.048*	*140.9 ± 27.7 (75-210)*	*0.009*	*128.2 ± 39.8 (10-239)*
Prevalence of WCH‖	*23.2%*	*0.05>*	*30.8%*	Ns	32.0%	Ns	*34.4%*
*Prevalence of HT***	*11.9%*	*0.001 >*	*23.3%*	Ns	25.6%	Ns	*25.2%*
*Prevalence of DM****	*8.1%*	Ns	12.7%	Ns	*16.6%*	Ns	*22.9%*
*Prevalence of COPD*****	*9.4%*	Ns	11.2%	Ns	*15.3%*	*0.001 >*	*28.7%*

*Nonsignificant (p>0.05)
†Body mass index
‡Fasting plasma glucose
§Low density lipoproteins
‖White coat hypertension
**Hypertension
***Diabetes mellitus
****Chronic obstructive pulmonary disease

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Pathological Profile of Breast Cancer among Yemeni Patients

Suad Omer (1)
Muna Anwer Kutb (1)
Husun Saeed Jezan (2)

(1) Morphological Department, Faculty of Medicine and Health Sciences, Aden University.
(2) Paraclinical Department, Faculty of Medicine and Health Sciences, Aden University

Corresponding author:
Muna Anwer Kutb
Morphological Department, Faculty of Medicine and Health Sciences
Aden University
Yemen
Email: kutb20@yahoo.com

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Abstract

Background: There is a rising trend in the occurrence of breast diseases worldwide. The incidence of breast cancer is increasing in the developing countries due to increased life expectancy, increased urbanization and adoption of western lifestyle, lack of population awareness, delayed health seeking behavior and low levels of female education. In Yemen, breast cancer is considered the first cancer among Yemeni women (8) and the most leading cause of death.

Methods: A retrospective study of breast specimens from 354 women was taken from the private modern histology lab and Ibn Sina lab in Aden; between 2006- 2013. The data were collected from the referral sheets. All women with breast cancer underwent Fine Needle Aspiration Cytology (FNAC) and/or biopsy due to the presence of breast cancer for the purpose of diagnosis, were included.

Results: The results show 44% of the cases were from IBB Governorate, followed by 33% of cases from Aden. The age of the women with breast cancers ranged from 20 years (youngest patient) to 87 years (oldest patient) with a mean of 46.9 ± 12 years. 56.2% of lumps were in the right breast. Left breast was the next common (41.3%); with 3.5% of the cases affecting both breasts at the time of diagnosis. The overall pattern of breast cancer had invasive ductal carcinoma as the commonest finding (57.5%) followed by invasive lobular carcinoma (20%), in situ ductal carcinoma (13.2%) and in situ lobular carcinoma (3.4%). The less frequent subtypes were malignant phyllodes which represented 2.3%. Papillary carcinoma, Medullary carcinoma and Mucinous carcinoma were 1.1% each respectively.

Conclusion: Malignant neoplastic breast lesions were mostly seen beyond the 4th decade. Invasive carcinoma was the most common malignant tumor among Yemeni women.

Key words: Malignant breast lesions,
Yemeni women, invasive ductal carcinoma

Introduction

There is a rising trend in breast diseases worldwide, with an annual incidence of 200, 000 (1). The incidence of breast cancer is increasing in the developing countries due to increased life expectancy, increased urbanization and adoption of western lifestyle, lack of population awareness, delayed health seeking behavior and low levels of female education (2).

Breast cancer is the commonest malignancy of women in western countries and second most common in developing countries after cervical cancer and it is also the most common cause of cancer mortality in women (3).

There is a marked geographical variation in incidence rates, being highest in the developed world and lowest in the developing countries in Asia, Middle East, and Africa (4). Breast cancer rates are increasing in developed as well as developing countries. According to the World Health Organization (WHO) each year over 1.4 million women worldwide are diagnosed with breast cancer as it accounts for 23% of all newly diagnosed cancer (WHO, 2008)(5).

The most common risk factors are age over 40, history of mammary gland diseases, history of cancer in first-degree relatives, early menarche and late childbearing (after 35 years of age), woman's age and others (6,7).

In Yemen, breast cancer is considered the first cancer among Yemeni women (8) and the most leading cause of death (9).

Therefore, every change in the breast should be evaluated carefully for early detection of possible precancerous elements. In Yemen, the magnitude of the problem of breast diseases is not yet known.

The aim of current study is to study the demographic distribution and histopathological pattern of breast cancer among Yemeni women.

Materials and Methods

A descriptive retrospective study of breast specimens from 354 women was taken from the private modern histology lab and Ibn sina lab in Aden; between 2006- 2013. The data were collected from the referral sheets. All women with breast cancer underwent Fine Needle Aspiration Cytology (FNAC) and/or biopsy due to the presence of breast cancer for the purpose of diagnosis, were included. Four cases were excluded from the study as they were male cases. Therefore, the remaining 354 biopsies were included in the study.

Results

The total number of patient sheets reviewed was 354. The results show 44% of the cases were from IBB Governorate, followed by 33% of cases from Aden. (Table 1)

Figure 1: Regarding the age of the patients the highest percentage of carcinoma was found in 41 – 50 age category, followed by 31-40 and 51-60,< 30, > 60 respectively, as shown in Figure 1. The age of the women with breast cancers ranged from 20 years (youngest patient) to 87 years (oldest patient) with a mean of 46.9 ± 12 years.

Figure 2: 56.2% of lumps were in the right breast. Left breast was the next common with 41.3%. In 3.5% of the cases it was affecting the both breasts at the time of diagnosis, as shown in Figure 2.

In the overall pattern of breast cancer invasive ductal carcinoma was the commonest finding (57.5%) followed by Invasive lobular carcinoma (20%), in situ ductal carcinoma (13.2%) and in situ lobular carcinoma (3.4%). The less frequent subtypes were, Malignant phyllodes which represented 2.3%. Papillary carcinoma, Medullary carcinoma and Mucinous carcinoma were 1.1% each. Metaplastic carcinoma (0.3%) is rare and there was one case in the left breast in a patient 63 years old living in Aden.

Table 1: Distribution of breast cancer according to area of residency

Governorate	Frequency	Percent (%)
Aden	118	33.3
IBB	158	44.6
Al-Dhale	8	2.3
Abyan	19	5.4
Shabowa	8	2.3
Hadhramout	24	6.8
Taiz	5	1.4
Lahaj	11	3.1
Al-Baidha	1	.3
Al-Hudaida	2	.6
Total	354	100.0

Figure 1: Distribution of breast cancer according to age group

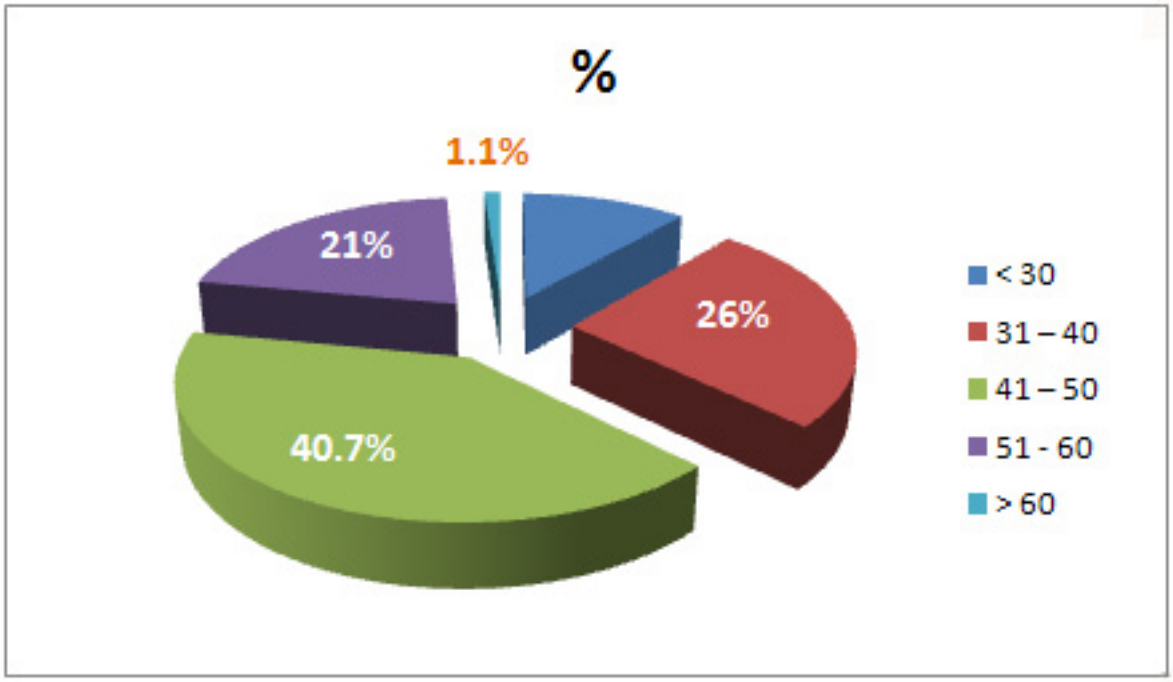

Figure 2: Distribution of breast cancer according to site of lesions

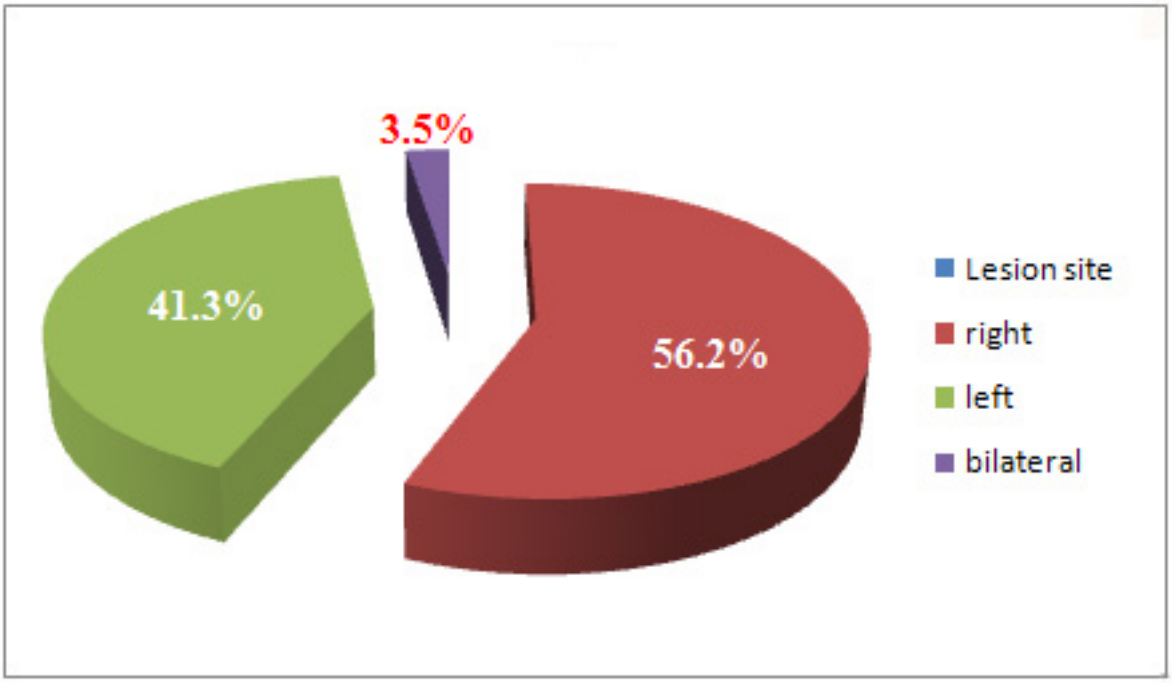

Table 2: Distribution of breast cancer according to histopathological pattern

Type of cancer	No. of patients	%
In situ ductal carcinoma	46	13.2
Invasive ductal carcinoma	206	57.5
In situ Lobular carcinoma	12	3.4
Invasive lobular carcinoma.	71	20
Malignant phyllodes	8	2.3
Medullary carcinoma	4	1.1
Mucinous carcinoma	4	1.1
Papillary carcinoma	4	1.1
Metaplastic carcinoma	1	0.3
Total	354	100.0

Discussion

Breast cancer is the most common neoplasia in women (10). Most of our patients come from the rural area in IBB Governorate, followed by cases from Aden, which were consistent with other studies (11, 12,13).

Mean age of breast cancer presentation was in 46.9 years. Similar results were reported in other studies from Arab countries including 48.49 years in Saudi Arabia (Jamal, 2001), 49 years in Jordan (Aghassi et al., 2002), 49 years in Lebonon (El Saghir et al., 2002), 48 years in Egypt (Ibrahim et al., 2002) and 44 among Yamani patients(11). Alhaj (2012), found a significant higher frequency of subjects in the breast cancer group of age between 40-59 years. Sulhyan et al (2017) showed that tumours were seen beyond the 4th decade.

Of the 354 malignant lesions, the primary site of lesion in the majority of women was detected in the right site. It is similar to the rate reported in the literature (1,4, 19). Sulhyan et al (2017), found all the tumors involved the upper outer quadrant most frequently, contrarily some authors reported the left breast was more affected than the right one(20,21).

In our study invasive ductal carcinoma was s the most common variety of breast cancer as indicated in published data (19, 20, 21). Sulhyan et al (2017) reported that invasive carcinoma was the most common malignant tumor. Invasive lobular carcinoma was the second most common histologic type in this study accounting for 20% of cases, which is similar to the study of Raina et al (2005).

Malignant phyllodes tumor is a rare lesion of the breast that can mimic benign masses such as fibroadenomas on clinical diagnosis but is characterized by a typical rapid growth (25). It represents roughly 0.3%-0.9% of all breast cancers (26); in our study they represented 2.3% of all cases. It was more frequent than Medullary carcinoma, Mucinous carcinoma and Papillary carcinoma.

Conclusion

Malignant neoplastic breast lesions were mostly seen beyond the 4th decade. Invasive carcinoma was the most common malignant tumor.

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Caregiver's perceptions regarding assisted care in the Cape Coast Metropolitan area

Irene Korkoi Aboh (1)
Busisiwe Purity Ncama (2)

(1) University of Cape Coast, Faculty of Education, Department of Health Science Education, Cape Coast, Ghana
(2) University of KwaZulu-Natal, School of Nursing and Public Health, Howard College Campus, Durban, South Africa

Corresponding author:
Irene Korkoi Aboh, PhD (Nurs)
University of Cape Coast, Faculty of Education,
Department of Health Science Education,
Cape Coast, Ghana
Email: iaboh@ucc.edu.gh

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Abstract

Objectives: This study explored and described perceptions of caregivers regarding inception of assisted care.

Background: In old age, people increasingly need help from others. Older people's inability to take care of themselves makes them dependent on their families. Their survival is at risk when they become frail or fall ill, and a single bout of ill health may well be terminal.

Methods: This study used three questions in its investigation: How do the aged prepare for their ageing? What services constitute the traditional model for care? How would respondents feel if this care was replaced with assisted care that took the form of modernized traditional care? The study used a mixed method, sequential approach in which qualitative data was collected before quantitative data. The quantitative data was used to augment the qualitative data. Data was collected through focused group discussions and questionnaires from 388 respondents ranging in age from 13 to 72 years and over a period of 5 months i.e. from September 2016 to January 2017. The Focus Group Discussions, (FGD) were digitally recorded and transcribed verbatim. Quantitative data was entered into SPSS version 23 and cleaned. Both sets of data were coded and analysed.

Results: The study revealed that the primary role of care givers was to provide care for their aged; that they had no idea how the aged they served prepared for their ageing, and that the idea of assisted care was well received, with strong approval from almost all of the 388 respondents.

Conclusion: Care givers perceived assisted living as an area where they could learn new skills and have an opportunity to earn money from legitimate work. The study also showed that care givers pay less attention to the work they were doing because it was unpaid.

Key words: Activity of daily living, assisted care, Cape Coast Metropolitan area, older persons, preparedness.

Introduction

The role of the older people in the African family is to provide care for children who will in turn provide care for them in their old age; hence the Shorna saying, "karere kagokurerawo" (look after it and it will look after you). The more children one has the more chance there is of receiving care when one is no longer able to provide for oneself. The system ensured that the needs of individuals were catered for within the family. Nobody will starve when other members of the family have plenty. No children would live alone even if all the direct (or biological) members of their family died. The concept that "it takes a village to bring up a child" was applicable (1). Care for dependent members is a core dimension of family life. As elsewhere, some aged in sub-Saharan Africa serve both as care providers to orphans and vulnerable children in contexts of HIV, poverty and labour-related migration (2-4) and as recipients themselves of long-term care (5). Transformation from a rural society to a rapidly urbanizing society also has influential consequences (6) for social attitudes to ageing and the needs of older adults (7). Older people have diminished capacity to sustain themselves through own income, savings, assets, or pensions. Their consequent vulnerability to risk of poverty from life events such as sudden retirement, redundancy, or death of a spouse (8), makes them dependents on younger adults or families for support. In some west African countries such as Ghana and Nigeria there is over-reliance on family support in customary value systems and arrangements where adult children and family are saddled with older people's needs (9).

Background

Traditionally, older people, especially women, care for grandchildren in the absence of their parents. The major change that has occurred is that care must now often be provided without the support of sons and daughters or other kin because of HIV/AIDS- related deaths (10). Indications are that the West African family system no longer affords sufficient protection to many of their aged, and sizeable proportions of the aged report receiving insufficient support from kinsmen with evident shortcomings in family support (9). In addition, more women are entering the labour market, reducing the availability of caregivers, who in most cases are traditionally women.

Family members are important decision-makers when they are present and involved, but their role in clinical decisions varies depending upon interest, knowledge and availability of decision makers. They can be an important link to an aged person's history and desires, especially in cases where the aged are unable to communicate such wishes for themselves. The voice of aged residents for advocacy is particularly important as nursing homes seek to provide care that is individualized and increasingly person-centred. However, it is important that family members be considered as partners in decision-making (11). Family members value aged resident's comfort and quality of life, an area of nursing care that can be attended to by nursing home staff, often without hospital-level medical intervention (12). Family caregivers play an essential role, usually unpaid, in caring services, but a family member caring for an older person may not be prepared for the challenge. The needs of older patients are diverse and may include assistance with medication, transportation for treatment, activities of daily living, and emotional support; activities that caregivers find particularly stressful include helping patients with their self-care, managing their treatment and symptoms, and dealing with the suffering of a family member. Families may also be affected by other stressors, such as changes in roles and employment and disruptions in schedules (13). However, these caregivers respond to stressors differently; older spouses may be particularly vulnerable because of their own frailty.

There are negative effects on caregivers' psychological, social, and physical health functioning. Social and economic deficits in relation to caregiving may include lifestyle disruption, less socializing and greater out-of-pocket and lost productivity costs. In addition, caregivers' stress and "burnout" have been associated with an increased risk of institutionalization (14). In most developing countries, formal social security systems have limited coverage and inadequate benefit payments (15,16). Thus, older people depend on family support networks, a reality that is well appreciated in most parts of sub-Saharan Africa (17-19). It is thus recognized that traditional social security systems are changing, weakening and rapidly disappearing, due to pressures from urbanization and industrialization (20). Youths migrate to cities while the elderly move back to the rural areas. However, elderly persons in Nigeria usually reside in rural communities, particularly those who have retired from their place of work (21).

It is difficult to obtain a clear picture of the care which old people in rural Ghana enjoy. Some have been successful in life and have been able to give their children a good education, resulting in a good social position which enables the children to take good care of them. They buy their elderly parents everything that is needed for their comfort and the houses of such people are often filled with children, nieces, nephews and grandchildren. Their good life attracts relatives who bring company and presents (22). As described by Geest (1995) the quality of life of the less well-to-do elderly is harder to gauge, with contradictory indications. One moment they may complain that they have no money for food, that their children are far away, seldom visit them, and do not remit sufficient money on which to live comfortably; at other times, they may praise their children for the way in which they look after them, since it would be shameful to admit that their children neglect them. In the past young people took good care of the aged, but times have changed (22).

Institutional setting or home

Health status varies while ageing, and the aspects of home also change over time, even when the elderly person stays in the same home environment. In advanced age, it becomes increasingly important to live in a home

that suits one's physical needs. Similarly, cognitive and emotional issues such as security and familiarity in the home become increasingly important (23). In Australia, aged who require long-term care but live at home or in the community rather than in institutions need assistance with three or more activities of daily living (24).

Types of assisted care options

Whether the reason for moving into an assisted living facility is prompted by a serious medical condition or the desire for a lifestyle change because it is becoming more challenging to live independently, it is important to assess the current situation and look at all the options to make the right choice with an environment that is healthy, happy and more fulfilling (25). With so many senior housing options available, it's easy to feel confused and overwhelmed by the vast number of care types and styles of aged living communities which do not exist in Ghana. It is important to learn the terminology and the differences between aged care solutions that are out there so that the right choice can be made (26). Assisted care givers assistance is with activities that people do every day without needing assistance. They include eating, bathing, dressing, toileting, transferring (walking) and continence. An individual's ability to perform these activities of daily living (ADLs) is an important element in understanding the type of services that are needed. In most instances, these services are provided to seniors who may need a little extra help or in some instances more help like 24 hours, 7 days a week, or even a live-in arrangement.

The available options include independent living facilities (IL or ILF), where a senior living option is designed to enable independent older persons to enjoy an active lifestyle in a community of their peers. This design typically involves apartment-style housing for an age-restricted community of residents. They also are sometimes made up of freestanding homes or condominiums which provide optional private duty services. In most cases, the facility develops a relationship with a private duty company that provides services to the residents as needed. An assisted living facility (AL or ALF) is another aged living option that combines apartment-style housing, organized social interaction, and private duty support services as needed. Health care services are often provided by outside providers who either rent an office in the building or visit the building periodically. Assisted living is designed for individuals who require assistance with everyday activities such as meals, medication management, or physical assistance with bathing, dressing, and transportation. Some residents may have memory disorders, including Alzheimer's, or they may need help with mobility, incontinence, or other challenges. A skilled nursing facility (SNF) is an institution or part of an institution that meets criteria for accreditation established by the sections of the Social Security Act that determines the basis for medical insurance reimbursement for skilled nursing care. A continuous care retirement community (CCRC) is a campus which incorporates all levels of care on one property. Generally, the nurses and therapists of the SNF unit provide care as necessary to the AL and IL residents. However, the priority of the healthcare staff on the campus is to care for the SNF residents. Often external providers of the health care and private duty services are brought in to deliver care to the residents of the IL and AL portions of the property (27).

Materials and Methods

Design and setting

The objective of the study was to explore and describe the reaction of caregivers to the inception of assisted care. Study design was mixed method in which qualitative data was strengthened by quantitative data. It used a sequential approach in which the researcher sought to elaborate on or expand the findings of one method with application of another method. This involved beginning with a qualitative method for exploratory purposes following up with a quantitative method using a large sample so that there could be generalization of results to the population (28). In-depth interviews and focus group discussions were therefore collected first, and questionnaires were then designed based on the findings from the qualitative phase.

The study was carried out in the Cape Coast Metropolitan area, one of the seventeen (17) districts of the Central Region of south Ghana. The Metropolis is further divided into 25 sub-districts for administrative purposes by government. For the 25 sub-districts, 10 were randomly selected using SPSS version 20 software. The selected sites were Ola, Adisadel, Aboom, Amoako-Mempeasem, Duakor, Third Ridge, Pedu, Koforidua, Dehia and Krofofrodu. Efutu, another adjoining community, was used to test study instruments. These 10 sub-districts were further classified into three different zones: urban (elite residential communities), peri-urban (either urban or rural, but densely populated) and rural (lacking almost all social amenities). For clearer understanding in the study, the zones were demarcated as zones A, B, C.

In view of the differing population density of the communities, proportional-to-size approach was used in distribution of potential respondents from which participants were recruited. It was concluded by the PI and research team that the urban and rural areas should each be given 25% of sample size and the peri-urban was given 50%, since it was heavily populated with old people.

Sampling and data collection techniques

An initial total of 384 caregivers was proposed for the study and, in the field 388 ultimately consented to give their time and information for the study. Of this number, 44 were recruited to participate in the FGD. The inclusion criterion was strictly those taking care of an elderly person in the age group of 65 years and above. The PI and the research assistants collected all the qualitative data using a semi-structured guide to conduct focus group discussions. The four main questions for all the groups were: (a) What was the level of the welfare for the aged in their care in relation to activities of daily living? (b) How did these aged prepare for their current situation? (c) On a scale of 1-10, how strong were they? (d) What were their views on the inception of

Figure 1: Sub-districts of Cape Coast Municipality- GIS, UCC, 2014

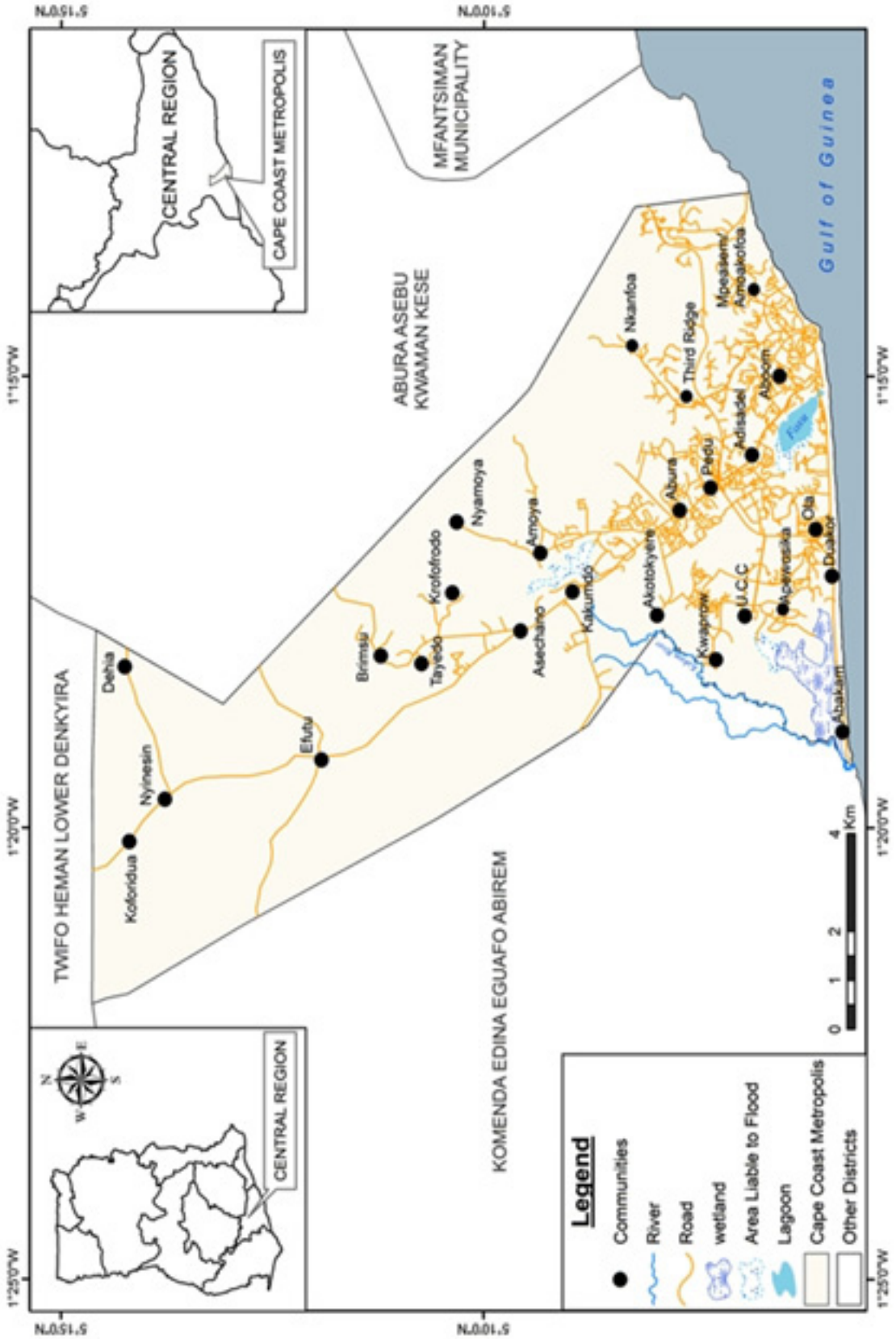

Table 1: Study sites, zones and activities

Sites	Zones	Activity/ number of participants	Activity /number of respondents
Site 1 Site 2 Site 3 Site 4	A	FGD / 12	Questionnaire / 97
Site 5 Site 6	B	FGD / 20	Questionnaire / 194
Site 7 Site 8 Site 9 Site 10	C	FGD / 12	Questionnaire / 97

assisted care in Cape Coast? The questionnaires were both structured and semi-structured. The questions were divided into five sections: Section A, data on personal information; Section B, data on preparedness of the aged for their ageing; Section C, data on current care practices looking at activities of daily living; Section D, data on care that needed to be added to what the aged received; Section E, caregivers' views on the inceptions of assisted care in the Cape Coast Metropolitan area. An assembly member (AM) for each zone was identified and appointed and given the assignment of looking for a convenient venue for the discussion in a week's time. After each discussion, a day was booked for those who attended the discussion to inform other caregivers that questionnaires would be distributed for them to fill. This was to stimulate other key informants in the communities, through grapevine communication, about the impending data collection. The age range of the target population was 13 to 72 years. The population was skewed to females because all participants and respondents were females. Five field workers and a research assistant were recruited, based on their knowledge and experience of the topic under study, and were given 3 days of training. Data collection began in October 2016 and ended in January 2017. Three successful FGDs were done in the identified zones followed by the quantitative aspect of data. Duration of the discussions was between 40 minutes and one hour. With the quantitative data, a total of 388 questionnaires were completely answered. Systematic random sampling was employed in which every second house was sampled. Questionnaires were given to those solely in charge of the aged. Due to the cooperative nature of caring, the study attracted more caregivers than initially planned. All caregivers at the point of data collection were included and taken through the questionnaire. Those not able to read and write were taken through the questions one by one by the field workers and research assistant, in the local language, until the questionnaire was completed.

One of the challenges that were encountered was eagerness of the caregivers to give more information than we could handle; also, because it was election year, any gathering quickly attracted attention from community members, which sometimes made it difficult to control the crowd. Participants were given refreshments in view of the length of time they spent with researchers.

Ethical issues

Participants and respondents were assured of confidentiality and anonymity before each procedure started. They were given consent forms to read and sign and those who could not read and write were given detailed explanation of what they were about to do before thumb printing. Minors were asked to present their guardian, who either agreed or declined to allow their participation in the study.

Data management and analysis

The tape-recorded FGDs were transcribed verbatim from native language into English by the PI and trained research assistant. The transcripts were checked for accuracy and quality and cleaned for anonymity by the PI. When no discrepancies were identified, the files were coded for analysis. The method of analysis was interpretive descriptive content analysis to gain insight into the caregivers' perceptions regarding the inception of assisted care in Cape Coast Metropolis (29). At the initial stage, the contents of the data files were read to identify major thematic areas. The main task was to display data in a way that meaningfully indicated conceptual distinctions and provided content that illuminated the concept. Three key elements of interpretive descriptive content analysis were followed: detection, (which involved identification), assigning the substantive content, and displaying the dimensions of the topics under study. These dimensions came out with one major theme and six sub themes: welfare, government plans, support systems available, activities of daily living by assessing the strength of the aged by caretakers on the scale of 1 to 10; caretakers' perception of assisted care and strategies for the programme.

Findings

The environment in which people find themselves, coupled with their background characteristics, have implications for their health and welfare. It has been established that there is a relationship between residence, living arrangements, personal characteristics such as age, sex, marital status and level of education, with health and welfare (30,31). The themes identified in the FGDs and questionnaires were participant' characteristics, welfare of the aged, government plans, support systems, payment plans and reaction to assisted care.

Participant characteristics

Community members who learned about the purpose of the study were all willing to give researchers information. From the 44 participants recruited for the FGDs, most had primary education but could read and write and could speak English. They were mainly married or never married, and some were widowed or separated/divorced. Their ages ranged between 13 and 72 years; they were all Christians, and were once fishmongers, petty traders or artisans, but were now unemployed since assuming their new role as caregivers. Some had children while others did not. Those who were parents had between two and ten children. Participants from zone A said (in chorus), '*not all of us attended school'* (FA). One participant added *'I have, most of us have been to school but we cannot write'* (FA1). In relation to marriage, participants echoed the statement that '*all of us have been married before but now either divorced, widowed or separated*' (FB1). Another added that *'I lost my husband because I had to come home and care for my mother*' (FB2). In relation to occupation, one reported, '*I was once a fishmonger, but I do sell few items on table in front of our house'* (FB2). A participant from the third group said '*we were once working as fishmongers, artisans, government workers, petty traders but none of us is working now.* With this new role, I cannot add work to it' (FC1). When asked the number of children they had, typical responses were '*I have three children and they are all grown up now'* (FA1). '*I have six children'* (FB2). They all reported being Christians, indicating recognized Christian sects such as Roman Catholic, Disciples of the Twelve Apostles, Anglican, Methodist and Awoyo.

Demographic characteristics of questionnaire respondent caregivers were combined with those of FGD participant caregivers.

Table 2 (next page) shows the age distribution of respondents providing information. The latest age group 19.3% was 30-39-year age group and the smallest 8.5% was the age group 70 years and over. In sex distribution, the study was skewed to female caregivers at 98.4%. A majority were married, with a small number 3.9% being widows or widowers. Christianity was the main religion in the community. Highest level of educational attainment of respondents was primary 43.3% and secondary 27.6%. Main occupation categories were others 49.9%, followed by unemployed. Participants did not consider housekeeping chores as an occupational role but chose instead to classify themselves as unemployed or others. More than 50% of respondents had ever had one child or more, and they mostly lived in the same residence as the aged, with only 10.4% living out.

Welfare, Knowledge and Social Support for the Aged

Welfare

Minimal care provision by caregivers, and minimal provision for basic needs from government plans or social support for the aged, had evidently negative effects on well-being. Participants' responses on the welfare of the aged were not encouraging:

Some of them are living with their children but they are not happy …. They are saying their mum is a difficult person, so they do not want to support her … to make her give in to their demands …. The woman is around 90+ years (FA2)

Some are in the same house with their sisters and children, but they are at loggerheads with each other …. They don't allow their children to help those in need …. It is so difficult for them to ask for a favour from their sister's children …. The children will not even go when they send them on errands (FA3)

Another participant commented on the special needs faced by weaker elderly people:

Sometimes you must perform the necessary care from them …. If they are not assisted in those things it will not be the best … because they have regressed into childhood and need to be assisted (FA5).

Medical conditions such as dementia were mentioned as particularly difficult for caregivers:

I want to add that some of the old ones due to some medical conditions such as dementia become troublesome, the youngsters do not understand them very well and tend to avoid them and do not want to stay with them leading to neglect (FA4).

Table 3 indicates how respondents perceived the strength of their wards on a scale of 0 to 10, where the zero signifies total dependence and 10 signified independence, knowledge of government planning for the aged and social support for the aged in CCM.

Government plans

Government is responsible for its population socially, politically and psychologically. Government plans are implemented through social welfare, and on-going communication and openness of these plans is important. This openness is tied to departmental core missions, and updates and new initiatives help to improve openness.

Table 2: Demographic characteristics of caregivers

Demographic Variables		N = (388)	% (100)
Aged (years)	10 – 19	31	8.0
	20 – 29	59	15.2
	30 – 39	75	19.3
	40 – 49	70	18
	50 – 59	64	16.5
	60 – 69	56	14.5
	70 +	3.3	8.5
Sex	Male	6	1.6
	Female	382	98.4
Marital status	Single / never married	103	26.5
	Married	259	66.8
	Divorced /separated	11	2.8
	Widowed / widower	15	3.9
Religious affiliation	Christian	341	87.9
	Islam	42	10.7
	Traditional religion	1	0.3
	No religion	4	1.1
Level of education	No education	67	17.3
	Primary education	168	43.3
	Secondary education	107	27.6
	Tertiary education	46	11.8
Occupation	Unemployment	77	19.8
	Housekeeper	4	1.0
	Artisan	66	17.0
	Pension	40	10.3
	Other (trader & student)	201 (173 & 28)	49.9 (44.7 & 7.2)
Children ever born (CEB)	None	103	26.6
	1-3	165	42.4
	4-6	86	22.2
	7-10	34	8.8
Place of residence	Live-in	347	89.4
	Live-out	41	10.4

Table 3: Welfare, Knowledge of Government Plans and Social Support for the Aged

Activity levels of the aged	N=388	%(100)
0 - total dependent	21	5.4
1-3 (dependent)	96	24.7
4-6 (partial dependent)	89	22.9
7-9 (semi-independent)	88	22.7
10 (independent)	94	24.2
Knowledge of Government plans for the aged		
Yes	32	8.2
No	356	91.8
Social support	Yes %	No%
Any community supports	7.7	92.3
Community service through guidance and counselling	28.6	71.4
Aged solving problems at the community centre	31.7	68.3
Aged spending time at the family house to organize festivals such as outdooring, puberty rites, marriages, funerals	42.0	58.0

Government plans

Government is responsible for its population socially, politically and psychologically. Government plans are implemented through social welfare, and on-going communication and openness of these plans is important. This openness is tied to departmental core missions, and updates and new initiatives help to improve openness. When participants were asked if they knew if government had plans that could transform their lives, two of the responses were:

We have ideas of some of the plans e.g. the NHIS and the amount of renewal …. apart from this nothing. (FB1)

I am on pension, so I know about that one too. (FB3).

Support systems

Caregivers involved with caring for the aged are required to provide individual or group support which may be either physical or emotional. When asked what caring systems were in place for the aged, participants mentioned caregivers, activities of daily living and visits from significant others. They indicated that they thought immediate family members were the right people to give care to their own kin. Two indicative responses were:

If the caregiver is her child, then she will be treated well because at that age I feel their character is so weird or the life they led that people saw leads to how they are treated in their period of old age …. It will be sad if we want to look at such things to care for them …. because when they start falling sick in their old age … they are faced with what they planted when they were active. (FA7)

There are some whose children are not around …. they are all away, so a different person altogether comes to take care of their kin ... perhaps this person will not have that patience for the old person's nagging. Caring depends on relationship. (FA5)

Activities of daily living

These are the basic activities performed by individuals on a daily basis that are necessary for independent living at home or in the community. Whether individuals can perform these activities on their own or rely on family caregivers for assistance serves as a comparative measure of their independence. On this point, participants mentioned various services rendered which included personal hygiene, mobility, feeding, elimination, medication, transportation, rest and sleep. Visits from family members and significant others were important for caregivers and they were very grateful for church visits for their kin.

Her friends visit us, and the church also send delegations to check on us monthly …. For relatives we see them all the time …. They are all around us … so there is no problem (FB10).

In another instance, the caregiver's mother was connected with church and was frequently visited by the priest:

My mother held a position and have been pensioned from church, so the Rev. Father comes to give her communion at home (FB9).

Respondents were asked if the aged were involved in the community services such as providing guidance and counselling of the community members, since old age is associated with experience and wisdom, and the response was largely negative. It was also noted that the aged mostly did not assist the local judiciary in family disputes in the traditional courts that were held in the community centres and did not to get involved with family issues.

Perception of assisted care

Participants were asked if they wanted something like assisted care, following a thorough explanation of the programme that was given to them by the PI. There were quick responses commenting on the difficulties and shortcomings in the care given at home:

To me the care at home is not good because these days our economy is bad, and everybody wants to work …. So, caregivers are in hurry to leave for their respective work places. (FA9)

Unfortunately, some were not able to have children …. It is so difficult for them. … They are rejected on the grounds of barrenness and poverty … so I think it is a good idea for this programme to come to Ghana (FB10).

One participant was very much against the programme:

In Ghana, we do not need these things … to be frank with you …. People will insult you … and cast insinuations that you could not look after your parents who matter most in your life … For me, I do not agree to this programme (FA5)

Others expressed support for the programme:

I like it …. Just like we leave our children with attendants, we anticipate attendant recklessness. Now we need to do this for our parents … because we are all working. We need to accept this programme than leave your frail mothers all alone at home …. With the mindset that we can care for them knowing that we cannot because when we get up … we leave for work and come home tired or depressed. But when we are aware they are well catered for … we will be at ease. On public holidays, we can go and visit them or bring them home for some time but not abandon them. However, at that place she will meet her age mates and make friends, entertain themselves … unlike at home. Right now, most of us are leaving in areas that are like apartment kind of building not family houses … and when you come back … they are so sad. But if they are at a place where they are happy … I will be happy too. For me I am for it …. it should come on (FA7).

Some of us have the money but not caretakers … so we are ready for this programme … some even have children but not caretakers … so life is so difficult for us sometimes (FA4).

Participants were made aware that the proposed home would not receive any subsidy from government or an insurance company, and that the premium available was solely for the NHIS. They were asked what should be done to start with the programme if they were interested, with the options that the PI outlined being initiatives by children and/or self, by family members or by government. Some felt that it was the responsibility of the children to look after their own, and that government must also help:

Create an aged home so that the children will pay towards the upkeep of their parents … because they are busy and will not get adequate time for their parent(s) …. but care must be given (FA4).

I think government should take the cost … he has the money (FB4); we do not have the money so government should take the cost, or part of the cost (FB11).

Some were unable to offer suggestions because the decision makers were not readily available to make the necessary choices:

I think we need to discuss with the children (employer) before I can come out with a concrete answer … because they have to know about this programme. (FB6)

Backing the information received from the FGDs, Table 4 gives the quantitative data on reaction to the study.

Overall responses showed reluctance towards aged parents being taken from caregivers and sent to an institution. About 40% indicated in the negative, and this was followed by a further 28.6% who said their reaction would be indifferent for the same reason. Others in this regard were of two views - either sad or indifferent depending on their current situation.

In regard to payment for upkeep of the aged, most respondents 70.4% indicated that they would want government to take up the cost. A much smaller group 16.2% felt that the children of the aged, or in a few cases, 1.0%, other family members, should bear the cost, and there were also respondents who thought that combinations such as government and children or children and relatives should take responsibility.

Strategy for the programme

When participants were asked what strategies were needed to be put in place, they suggested a day-care centre and a place to hold subsequent meetings for proper planning:

Table 4: Distribution of assisted care in Ghana

Reasons for the acceptance of assisted care in Ghana	N	%
Be around people of their own age		
Very happy	104	26.8
Indifferent	111	28.6
Very unhappy	157	40.5
Others	16	4.1
Payment for upkeep		
Government	273	70.4
Children	63	16.2
Relatives	4	1.0
Others	48	12.4
Sharing living space with peers		
Yes	167	43.0
No	221	57.0
Prior knowledge on assisted care		
Yes	119	30.7
No	269	69.3
Acceptance of assisted care in Ghana		
Yes	381	98.2
No	7	1.8

This programme must be of the day care type and/or a boarding or lodging and the stay in the home must be monthly or depending on what the children can take. (FA4)

The first thing we need is infrastructure …. a place for holding meetings to think through the programme. (FB11)

Discussion

The intention of this study was to explore community perceptions on assisted care as a modernized option in caring for the aged in the Cape Coast Metropolis. Healthcare policy that spells out how the aged are to be cared for exist but there is a strong preference for caring to be done in the homes. Ghana is a middle-income country with a young population, and in the study the modal class was 30-39 years and female. In a study by (32), 54% of the caregivers were 54 years or older, 72% were single, and 66% of the households were headed by women. Most of the caregivers 57% had little or no education. In our study, almost all the women participants were married with basic or primary level education, in keeping with MDG2 that calls for compulsory basic education for all, and in line with a rising primary school net enrolment rate in developing regions which reached an estimated 91% in 2015, up from 83% in 2000 (33). Study respondents who indicated 'No education' might have dropped out of school or were never enrolled. The UNDP (2017) document further noted that the number of out-of-school children of primary school age worldwide has fallen by almost half, to an estimated 57 million in 2015, from 100 million in 2000. Participants indicated that the aged were living with their own children and were not happy, which shows that most aged or elderly would like to stay with a relative. This corresponds with a finding by (21) that the elderly living with children appear to have a greater opportunity of good well-being than those living alone. This could include elderly who still have young children and grandchildren to cater for. Although diversion of caregivers to meet the needs of young children can have a negative impact on the health of the elderly, elderly women may be wishing to live with their married children even if this means that they are saddled with taking care of their grandchildren; they prefer to live in the family home even if prevailing conditions are not favourable.

Due to increasing longevity, declining mortality and fertility, older adults account for an increasing proportion of the world's population today, and this number continues to grow (34). This may be because of feasible public health strategies for health promotion, so that people are living longer, becoming healthier and stronger, and can therefore carry out their day-to-day activities with minimal assistance or support. Notably, more than 71% of respondents in our study said their aged could do things for themselves.

Respondents were not aware of government plans and policies; this could be because they could not read even though they had been to school and could speak English. Although there were no spelt out cultural rules governing the support systems that were in place, respondents believed that the best caregivers for their aged were family members, especially their children. It could be an indication of the absence of assisted care or ignorance about how care is delivered in assisted living. Culture is

mostly transmitted from generation to generation through folklore, socialization and artefacts, and according to (35), the flow of culture across geographical boundaries make people learn, and people who live near each other especially, are likely to share cultural values. This idea does suggest that similarities in culture creates emergent and coherent cultures that individuals can clearly be labelled as 'inside of' or 'outside of'. Even where people knew they are busy and should assign the care of their aged to someone else for help, they adamantly resisted because culture does not allow it. Care is an unambiguous affair, an observable fact. Its two basic constituents are emotional and technical/practical, with the latter referring to concrete activities carried out for others who may not be able to do these things on their own (36). Parents take care of their children by feeding them, providing shelter, educating and training them, and so forth. Healthy people take care of sick people and young people take care of old people. Geest (2002)'s ethnographic study found that some of the most common activities for which the elderly people need help from others are getting food, taking a bath, washing clothes, and going to the toilet. Helping them financially and providing company are also indispensable tokens of care. Finally, in the eyes of many, the most important type of 'care' is the organization of a fitting funeral when the elder dies. As indicated by the focus group participants and questionnaire respondents, caring meant assisting the elderly in day-to-day activities which included fetching water for them to bathe, preparation of food, running errands such as banking services, and reading letters from loved ones. Informants also noted that quality of care in the home was not good, yet at the same time they were sceptical about assisted care. They were unhappy at the idea of elderly people living together. This could be because of fear of the unknown, having had no previous experience of the concept, or for cultural reasons, because they were afraid of what people might say. Some of the caregivers said that their marriage had failed because they had to leave their husbands and children to come home and care for their aged parents. Others had left their employment to care for elderly parents and family members.

Payment for upkeep seemed to be a big problem for informants, most of whom wanted government to take on the responsibility or offer some form of subsidy, as in the case of the National Health Insurance Scheme which they were familiar with. Strategies suggested for initiating assisted care were day care and temporary lodgings as somewhere the aged could be accommodated at times when the primary caregiver would not be available.

Conclusion

The study produced some important findings. Care for the aged in their homes is often inadequate. Caregivers are often overwhelmed by the number of roles required of them, which compromises the care given to the aged. Lack of modernized care facilities worsens these problems. These caregivers lack necessary knowledge about assisted care and remain committed to traditional ways of caring for the aged. Some feared social disapproval should they not be able to look after their parents as a primary social obligation. They acknowledged that they had no idea of government plans for the aged apart from the NHIS. In addition, they wanted assisted care to be introduced in Ghana, with payment for the care being in partnership between government and individuals. The styles preferred were day-care and temporary live-in.

Ethical approval

The study was approved by the Humanities and Social Sciences Research Ethics Committee of the University of KwaZulu-Natal (HSSREC /0608/016D) and the Dodowa Health Research Centre (IRB Ghana Health Service) of Ghana (DHRCIRB/06/06/16). Voluntary participation was accorded with written and signed consent.

Limitations of the study

Purposive sampling procedure were followed; adjustments to the age range of the elderly meant that some caregivers were automatically excluded, so that was a gatekeeper approach to collection of data. We also recognized researcher impact on the study participants.

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Hands On Surgical Skills Workshops for Primary Care doctors

Morry Brygel

Correspondence:

Email: mbrygel@netspace.net.au

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Introduction

There has been an upsurge in demand for training and continuing education worldwide and no more so than in Australia. Associate Prof Maurice Brygel has developed and presents a number of workshop skills programs which cater for these needs.

They emphasise clinical diagnoses but are centred around giving the participants the technical skills to carry out many office based procedures which are within the realms of primary care doctors. At the same time they are used to fulful continuing education obligations.

Mr Brygel is featured in the front centre of the group with his grandson Gil Zelwer sitting in for work experience

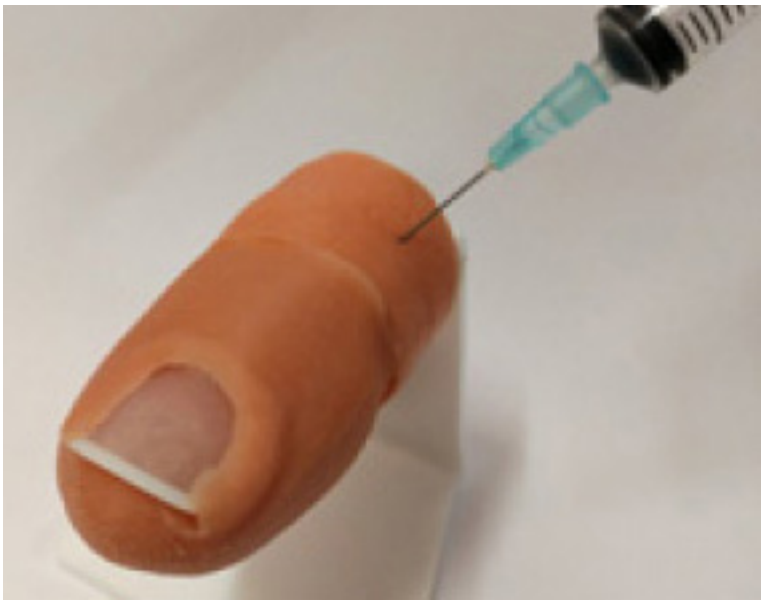

Figure: **Demonstration using models**

Sessions emphasise clinical diagnoses but are centred around giving the participants the technical skills to carry out many office based procedures which are within the realms of primary care doctors. At the same time they are used for accreditation purposes. This training is often neglected in hospital training and the doctor is thus thrown in at the deep end.

Now as a result private institutions as well as colleges have initiated programs to overcome the deficit.

These workshops are conducted depending on the sponsor at specifically designed skills laboratories or at conference venues such as hotels.

Models such as artificial toes and pork bellies are used to simulate the real thing.

The courses include management of ingrowing toe nails, skin cancer, lacerations, wounds, foreign bodies and a myriad of knot tying and suturing techniques all the skills required for the different procedures are catered for – such as informed consent acheiving haemostasis, post operative care and management of complications.

Commercial organizations are playing an increasing role in Australia as doctors seek extra skills and revenue for example through aesthetic medicine.

Participants include:
1. Medical students where suturing techniques are foremost to enable suturing of lacerations.
2. Establish medical Practioners who wish to update and expand their skills as well as fulfilling continuing medical requirements.
3. A very specific group to Australia are International medical graduates (I.N.G) These are qualified doctors from around the world who migrated to Australia (in large numbers) and must pass written and oral examinations as well as fulfil other requirements of suitability. This would then entitle them to practice in Australia. In Australia Allan Roberts of ARIMGSAS conducts comprehensive training programs with a high rate of success of enabling doctors to enter into the medical workforce www.arimgsas.com.au .
4. Surgical trainees and Surgeons. These need to practice and learn new techniques on models in sophisticated laboratories before applying their knowledge to humans.

Maurie Brygel is a general surgeon in Melbourne who designs and conducts these course for different bodies throughout Australia, including James Cook University, Monash University – division of General practice, Notre Dame Medical School and RACS and Bond University.

Maurice together with Charles Leinkram is director of the Melbourne Hernia Clinic. He together with Mr Leinkram have performed over 20,000 operations.

Their website www.hernia.com.au Melbourne Hernia Clinic is devoted to hernia education and our readers are welcome to visit it. There is also a comprehensive section on Surgical Office Skills for the Practioner.

INGROWN TOENAIL TREATMENT - Conservative, Nail Edge Removal, with Phenol & Wedge Resection treatment

Figure 1: Ingrown toenail showing nail edge digging into skin and causing bleeding and inflammation

This painful condition mainly affects the big toe on one or both sides . The nail edge grows into and irritates the overlying skin. An infection may then supervene. The pain or infection may continue to recur unless the cause is permanently removed.

This condition is most common in males, then female teenagers but can occur at any age. Possibly tight footwear, sweaty socks, the foot growing rapidly, all contribute. This combined with incorrect trimming of the nail, results in a spike from the nail edge burrowing into the overhanging skin causing irritation ,pain and infection. In older patients particularly, underlying conditions such as diabetes, poor blood supply, fungal disease or trauma may also be factors.

Occasionally other toes may be effected.

Conservative Treatment Of Ingrowing Toenails
There are a multitude of methods including massaging the skin fold away from the nail edge with a cotton bud and elevating the nail edge with a cotton or gauze pledget. Many mistakenly trim the nail edge down whereas it should be trimmed transversely and elevated. Despite this the problem may persist causing pain and infection.

Operative Treatment For Ingrowing Toenail
Continuing pain or infection may be indications for surgery. Antibiotics for infection may give only temporary relief as the underlying cause is not removed. When conservative methods are not satisfactory surgical intervention is advised.

Possible risks will also be discussed. It is rare to have any severe problems.

Females may be concerned that the nail could appear narrower.

Before the procedure the patient is given post operative instructions and the costs explained

Removal Of The Nail Edge
In the more urgent situation with severe infection just removal of the nail edge under a local anaesthetic nerve block will help overcome the infection. This may give permanent relief in up to 50% if the nail is cared for appropriately following the procedure. However the problem may recur.

The Use Of Phenol
This technique still requires a nerve block and removal of the nail edge surgically. It can be done without actually cutting any skin.

It is simpler to perform than a wedge resection particularly for the less experienced.

The phenol is acidic and care has to be taken not to burn the adjacent skin. The phenol must be washed off within a minute or two.

There may be less post operative pain than wedge resection.

Should recurrence occur then wedge resection can be performed.

There is possibly a higher rate of recurrence and a higher post operative infection rate.

Figure 2: Phenol treatment

Wedge Resection
Thus, it is recommended by most surgeons for a permanent cure, to perform an operation titled “Wedge Resection”. This removes permanently the nail edge and the corresponding nail bed called the germinal matrix.The nail grows from this matrix.

There may be some pain following this for a day or two.

It means the nail will be permanently a little narrower. Seldomly the nail may fall off or be deformed. This is more likely if there is also a diseased nail.

Figure 3: Nail avulsed

Figure 4: Dressing

Figure 5: Checking capillary circulation

The Procedure may be done at a First Visit.
The patient should be advised to be accompanied by a driver and have transport home, They should also be given information regarding costs. If there is a specific medical condition or they are the fearful fainting type this should be mentioned. You should also obtain a full medical history including medications, previous operations etc to assess their suitability for the procedure .

Anaesthesia:
Wedge resection is usually performed under Local Anaesthesia and is termed “a digital block” in the office. Hospitalization or a general anaesthetic is seldom required.

The Local Anaesthetic is injected into each side of the base of the toe. This may sting but is usually tolerated well. The injection takes a few minutes to take effect. The patient can just relax and talk or read whilst waiting. The toe goes numb but does not completely lose the sensation to touch. The effectiveness is tested prior to proceeding. Occasionally an extra injection is required as onset may be slower when there is an infection present. There is no pain during the procedure.

The Operation:
A rubber band tourniquet is placed around the base of the toe to prevent bleeding during the procedure . The operation itself only takes a few minutes. One or both sides of the same toe may be treated. Suturing is not required.

The Bandage:
The toe is dressed with a non-sticking paraffin gauze (making the dressing easier to change). Dry gauze and a crepe bandage are then applied firmly to prevent bleeding overnight.

The surgeon checks the circulation in the toe to ensure that the bandage is not too tight. The patient is able to walk on theirr heel and be driven home but should not drive. The patient should be given a bootie to wear for cleanliness

Antibiotics:
If antibiotics have been commenced, the course should be continued to gain maximum effect. Antibiotics however, are not usually prescribed at the time of operation because removal of the causative nail edge is effective.

Post operative care:
The Foot is to be elevated both in the car and on arrival home. This prevents bleeding and also reduces any throbbing.

Occasionally blood seeps through the bandage. Should this occur the foot should be elevated and pressure applied with a towel.

Pain killers such as paracetamol and a codeine are used Panadol, Panadeine or Panadeine Forte, are usually sufficient. Sometimes there is some throbbing pain at night but by the next day this usually subsides. If there is intense pain on the night of the procedure, the bandage can be loosened. The following day the patient is able to walk around on their heel quite freely. They must not get the bandage wet.

Review:
The patient should call the surgeon the following day on the number provided. This confirms that all has gone well and there is no need for any urgent appointment.

They should be reviewed 2-3 days following the procedure when the dressing is changed. This can cause some slight discomfort, so a simple pain killer Panadol or Panadeine can be taken ½ hour before arrival at the office. To remove the dressing, the bandage is soaked off. There are no stitches to be removed. Following this a light dressing is applied and is usually reviewed again in a few days time.

The patient should be given instructions on how to treat the nail. Whilst the wound is still healing, and not completely dry, it is better covered with a bandaid rather than have sweaty socks rubbing against it. A shoe cannot be worn for 3-4 days.

It is unusual for recurrence or another infection to occur. If tiny remnants of nail are left free this can be a source of recurring discharge.

Nail Care:
The nail is trimmed transversely instead of the into the skin. As the nail grows the edges should be regularly elevated using a cotton bud as should be demonstrated to the patient.

Workshops

In our workshops on ingrowing toenails we demonstrate and practice digital block and other simple methods of achieving local anaesthesia such as incremental injection with a very fine needle

The use of these techniques is applied to a sample of other conditions such as subungual haematoma, koilonychia, fungal Infection's and paronychia abscess

Included with wedge resection are
1/ conservative management
2/removal of the nail edge
3/ complete removal of the nail
4/ phenolizattion
5/ wedge resection
6/ zadek operation

Also - Informed consent,treatment indications,difficult cases, bandaging.post operative care, managing problems and billing.

Videos showing digital block and a detailed wedge resection are included

We invite you to register specifically for this course, the surgical skills course and skin cancer courses

Conclusion

Ingrown toenails are not a serious condition. They can however be quite painful and disabling. Usually surgical treatment is successful. The use of Local Anaesthetic makes the procedure comparatively simple. There is a small risk of the problem recurring - possibly 4-10%

References

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