Epidemiological Survey of University of Science and Technology Port Harcourt, Nigeria

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Abstract—*Epidemiological study of Rivers State University of Science and Technology Port Harcourt, Nigeria was carried out to identify the morbidity pattern in the University community in order to establish the current health status and trends. This study utilized secondary morbidity data sourced from Health Services Department. Data on staff mortality were obtained from the Personnel/Establishment Division. Methods employed for data collection were health records survey and data collection sheets. Morbidity information required were date, sex, age, department, card number and diagnosis of each case. Information required for each mortality case was date, sex, age, department, salary level and the cause of death. Of all cases of morbidity, communicable diseases comprised 17.5%; non-communicable diseases 24.1%, generalized disease symptoms 55.2% and others 3.2%. The study revealed that the leading causes of morbidity in the University were fever/headache/cold (36.9%), hypertension (13.6%), generalized body pain (7.5%), abdominal pain/vomiting (6.7%) and diabetes (4.9%). Hypertension emerged the second major cause of morbidity among the staff and males had higher rate of morbidity compared to females. It was also concluded that although mortality was increasing with time but there was no sex wise significant difference in mortality trend. It was recommended among others that Diabetes Mellitus and Hypertension being silent killers should be monitored regularly within the University community. Also the current practice of manual data entry should be replaced with computerized data system for better health records management.*

Keywords: Morbidity, Mortality, Communicable Diseases, Epidemiology

I. INTRODUCTION

Traditionally Epidemiology is the study of how often diseases occur in different groups of people and why.[1] Epidemiological information is used to plan and evaluate strategies to prevent illness and as a guide to the management of patients in whom disease has already developed.

In recent years there is more urbanization and industrialization and hence migration of workers has also increased. With the migration of workers far away from their homes, habits like alcoholism, smoking, etc is also increased due to factors like loneliness, peer pressure etc. With these changes the workers working in low resource availability are more likely to be affected by the dangers of high technology than their counterparts in developed countries.

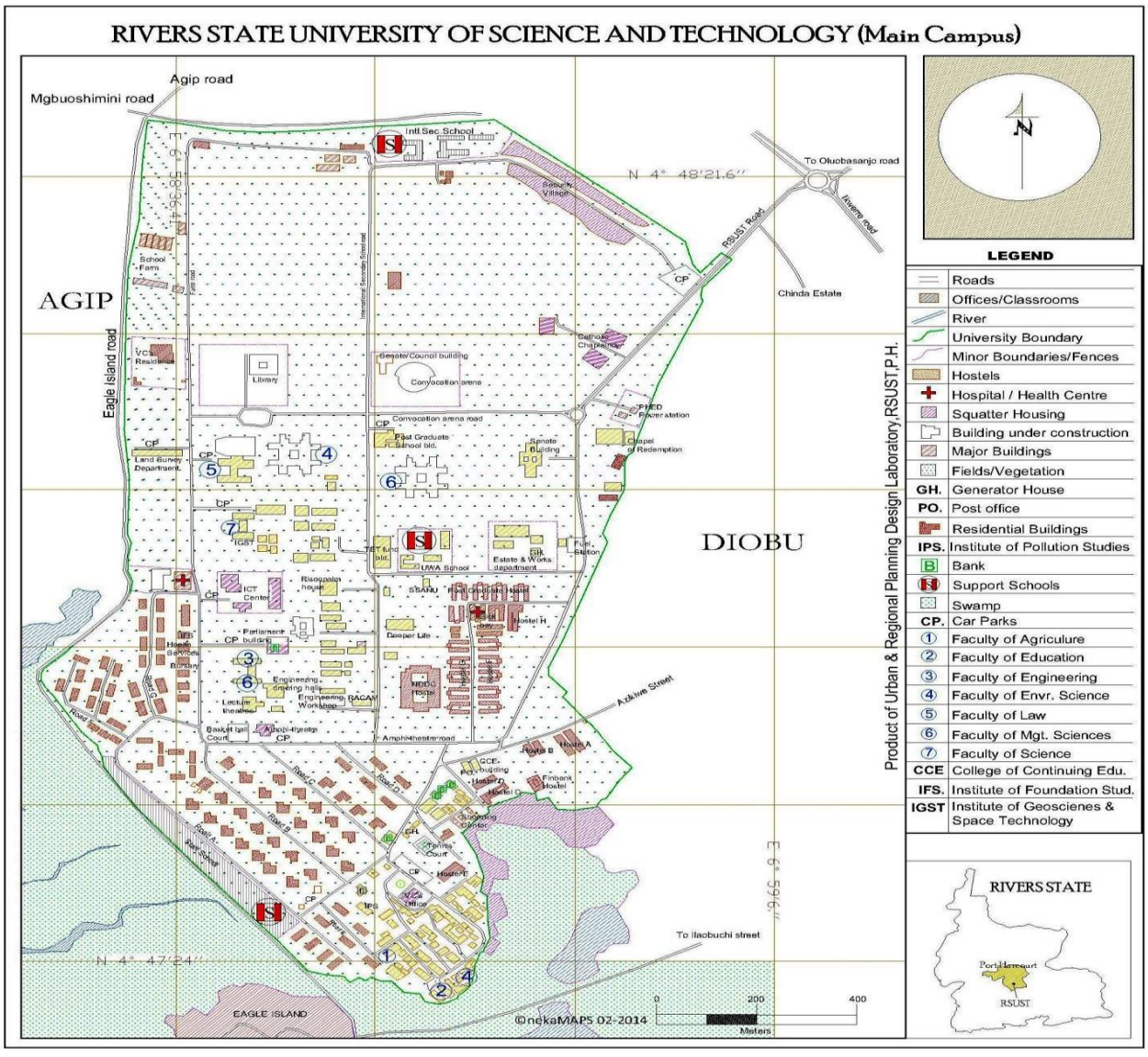
Infectious and parasitic diseases were the primary cause of mortality and morbidity in pre-modern societies. In modern times, the leading causes of mortality and morbidity are chronic and degenerating diseases such as cancer, cardiovascular diseases, and diabetes. However, infectious

diseases such as pneumonia, influenza, and HIV/Aids, along with homicide, suicide and accidental deaths all ranked high in the list of leading causes of death. [2]

Oil exploration and exploitation are usually accompanied by release of hazardous substances into the environment. [3-5] These substances end up contaminating community resources that sustain life and health e.g. air, water, soil, farmlands, crops, and fishery products.[6-7] Such substances may concentrate in the environment to levels that are toxic to health. Through normal processes such as inhalation, absorption and ingestion, such pollutants gain entry into the body and affect health negatively.[8-10]

Some industrial exposures are acute, resulting in immediate disease occurrence or an emergency. Chronic exposures however, have been known to affect sustainability or the body's resistance to disease causing pathological states in different body tissues; while some may even cause or hasten death.[11] So this study was conducted with the aim to know the mortality and morbidity pattern of people residing in Rivers State University of Science and Technology which is located within Port Harcourt metropolis in the Niger Delta sedimentary basin of Nigeria.

Figure 1



II. METHODOLOGY

This study is an epidemiological survey of people residing in the Rivers State University of Science and Technology (RSUST) Port Harcourt. Target population comprised the Staff and Students of Rivers State University of Science and Technology Port Harcourt, Nigeria. The university has staff strength of 1,850 and a student population of 15,376.[12]

Due to constraints imposed by missing, omitted and inaccurate recordings of data information, a convenience sample of all morbidity and mortality cases available were taken at the time of survey was included in the study. Those with incomplete data entry records were excluded from the cases sampled.

After proper correspondence with relevant head of departments health records were assessed and relevant data regarding mortality and morbidity were collected and complied. units following research. So this study utilized secondary morbidity data sourced from Health Services Department. Data regarding staff mortality were obtained from the Personnel/Establishment Division. And these darta regarding mortality were collected from year 2008 to year 2012

Demographic data required were simply copied manually for each case in pre-designed data collection sheets. Along with other demographic data card number was also recorded. Card numbers were used to trace the patient to ascertain the diagnosis or retrieve any missing information where possible. Details of disease occurred were collected in case of any disease and details of cause of death was gathered in case of any death. In this study data for morbidity pattern was collected from July to September 2013 and for mortality pattern was collected from

Data Analysis

The data were analyzed using simple descriptive and univariate summary statistics. The report was further illustrated with tables and graphs. The rates in the tables and graph are Proportional Case Rate which was computed as follow:

$$\text{Proportional Case Rate} = \frac{\text{Total number of cases of a disease}}{\text{Total number of cases of all diseases}} \; x \; 100$$

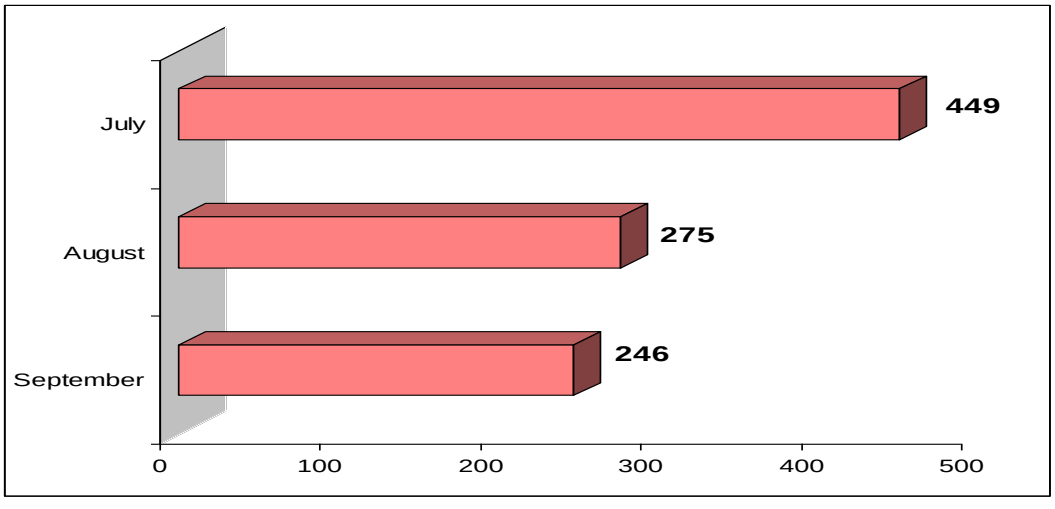
III. RESULTS

Morbidity Profile:

In this study total cases of any of the disease were 1,062 during whole study period of 3 months. These cases were highest in July 479 (%) followed by in August and September. (Figure 1)

Figure 1

Month wise morbidity in July 2013 to September 2013



When age and sex wise distribution of these cases was seen it was found that there was no significant variation (p>0.05) as per age of cases as per sex which was 40.0 ± 16.1 and 38.5 ± 14.5 in males and female respectively. But when sex wise distribution was seen males were significantly more than females at M:F ratio 1.22. (Table 1)

Table 2
Age and Sex wise Morbidity

S. No.	Biological Variable	Male	Female	P Value	LS
	Age (in Years)				
	Mean ± SD	40.0 ± 16.1	38.5 ± 14.5	P=0.132	NS
1	**Age Range**	18-78	18-79		
	Sex				
2	**No. (%)**	533 (54.9)	437 (45.1)	P<0.001	S

When type of morbidity in these cases was seen it was found that majority were having generalized disease symptoms followed by non communicable diseases, communicable diseases etc. (Figure 2)

Figure 2
Percentage distribution of morbidity causes

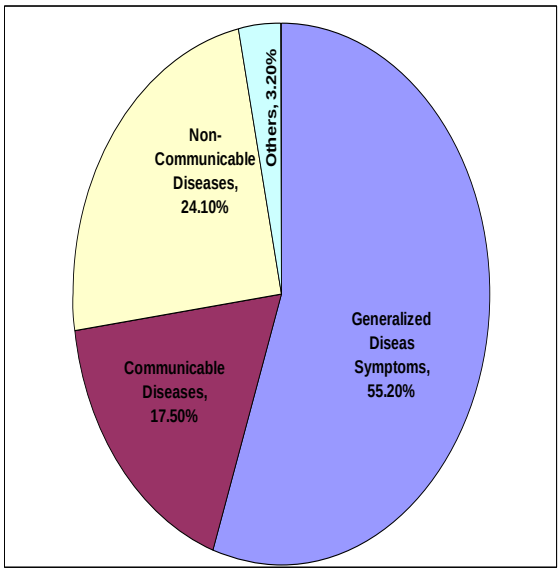
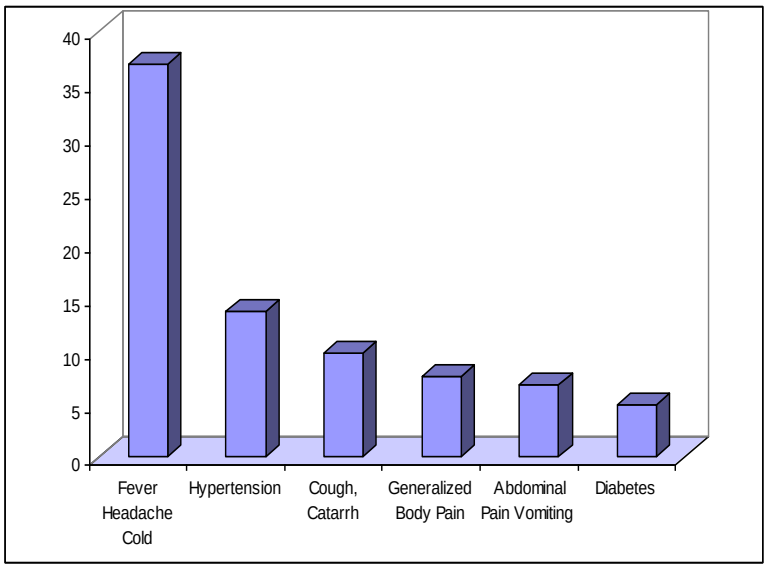


Figure 3
Leading Causes of Morbidity



Prevalent diseases in RSUST in decreasing order were fever/headache/cold (36.9%); hypertension (13.6%); generalized body pain (7.5%); abdominal pain/vomiting (6.7 %); and diabetes mellitus (4.9%). (Figure 3)

When these cases was further analyzed as per type of morbidity and month of occurrence of morbidity it was found that there was significant (p<0.05) variation in proportional case rate of various diseases as per month of reported. Fever was reported significantly (p<0.001) more in July than other months likewise Hypertension was also reported significantly (p<0.05) more in July. Fever/headache/cold) were the most prevalent causes of morbidity followed by Hypertension, cough/catarrh, generalized body pain, abdominal pain, Diabetes, Epigastric pains, Skin rashes and Skin diseases, Injury, Malaria, Gastroenteritis, Asthma, sorethraot etc. Among non communicable disease hypertension was most common followed by Diabetes which accounts 13.6% and 4.9% of total cases. There were 31 (3.2%) cases in other category. (Table 2)

Table 2
Month wise Type of Morbidity wise distribution

S/N	Cause	July		August		September		Total		P Value	LS
		N	*PCR	N	*PCR	N	*PCR	N	*PCR		
1	Malaria	5	1.11	7	2.55	3	1.22	15	1.5	>0.05	NS
2	Gastroenteritis	2	0.45	6	2.18	4	1.63	12	1.2	>0.05	NS
3	Cough/Catarrh	52	11.58	27	9.82	15	6.10	94	9.7	>0.05	NS
4	Skin Rashes/Irritation	9	2.00	7	2.55	6	2.44	22	2.3	>0.05	NS
5	Fever/Headache/Cold	195	43.43	94	34.18	69	28.05	358	36.9	**<0.001**	**S**
6	Sorethroat	7	1.56		0.00	3	1.22	10	1.0	>0.05	NS
7	Abdominal pain/Vomiting	24	5.35	20	7.27	21	8.54	65	6.7	>0.05	NS
8	Toothache	2	0.45		0.00	0	0.00	2	0.2	>0.05	NS
9	Epigastric Pain/Chest Pain	6	1.34	7	2.55	11	4.47	24	2.5	>0.05	NS
10	Generalized Body Pain	29	6.46	22	8.00	22	8.94	73	7.5	>0.05	NS
11	Diabetes	18	4.01	21	7.64	9	3.66	48	4.9	>0.05	NS
12	Ashma	5	1.11	3	1.09	3	1.22	11	1.1	>0.05	NS
13	Body Injury	12	2.67	4	1.45	4	1.63	20	2.1	>0.05	NS
14	Eye Problem	4	0.89	4	1.45	1	0.41	9	0.9	>0.05	NS
15	Burns	2	0.45		0.00	0	0.00	2	0.2	>0.05	NS
16	Body Weakness	1	0.22	2	0.73	6	2.44	9	0.9	>0.05	NS
17	Unconsciousness/Comma	1	0.22	1	0.36	0	0.00	2	0.2	>0.05	NS
18	Fungal Infection	1	0.22		0.00	1	0.41	2	0.2	>0.05	NS
19	Sickle Cell anaemia	1	0.22		0.00	0	0.00	1	0.1	>0.05	NS
20	Vaginal Infection	0	0.00	1	0.36	0	0.00	1	0.1	>0.05	NS
21	Ear Problem	4	0.89	2	0.73	2	0.81	8	0.8	>0.05	NS
22	Insect Bite	0	0.00	1	0.36	1	0.41	2	0.2	>0.05	NS
23	Urine Infection	0	0.00	2	0.73	1	0.41	3	0.3	>0.05	NS
24	Boil/Folliculities	1	0.22		0.00	2	0.81	3	0.3	>0.05	NS
25	Amennorrhea	0	0.00		0.00	2	0.81	2	0.2	>0.05	NS
26	Breast Pain Infection	2	0.45	2	0.73	0	0.00	4	0.4	>0.05	NS

S/N	Cause	July N	July *PCR	August N	August *PCR	September N	September *PCR	Total N	Total *PCR	P Value	LS
27	Anxiety	1	0.22	1	0.36	3	1.22	5	0.5	>0.05	NS
28	Hypertension	54	12.03	33	12.00	45	18.29	132	13.6	**<0.05**	**S**
29	Others	11	2.45	8	2.91	12	4.88	31	3.2	>0.05	NS
	Total	**449**	100.00	**275**	100.00	**246**	**100**	**970**	**100**		

***PCR=Proportional Case Rate**

Chi-square = 63.872 with 56 degrees of freedom; P < 0.05 LS=S

When these cases was further analyzed as per sex wise type of morbidity it was found that Body Injury and Asthma was observed significantly more in males than in females otherwise in other diseases there was no significant variation in proportion case rate as per sex. (Table 3)

Table 3

Sex wise Proportional Case Rates

S. No.	Type of Morbidity	Male N	Male *PCR	Female N	Female *PCR	Total N	Total *PCR	P Value	LS
1	Malaria	10	1.9	5	1.1	15	1.5	>0.05	NS
2	Gastroenteritis	9	1.7	3	0.7	12	1.2	>0.05	NS
3	Cough/Catarrh	48	9.0	46	10.5	94	9.7	>0.05	NS
4	Skin Rashes/Irritation	8	1.5	14	3.2	22	2.3	>0.05	NS
5	Fever/Headache/Cold	198	37.1	160	36.6	358	36.9	>0.05	NS
6	Sorethroat	6	1.1	4	0.9	10	1.0	>0.05	NS
7	Abdominal Pain/Vomitting	30	5.6	35	8.0	65	6.7	>0.05	NS
8	Toothache	2	0.4	-		2	0.2	>0.05	NS
9	Epigastric Pain/Chest Pain	12	2.3	12	2.7	24	2.5	>0.05	NS
10	Generalized Body Pain	41	7.7	32	7.3	73	7.5	>0.05	NS
11	Diabetes	26	4.9	22	5.0	48	4.9	>0.05	NS
12	Ashma	10	1.9	1	0.2	11	1.1	**0.040**	**S**
13	Body Injury	16	3.0	4	0.9	20	2.1	**0.049**	**S**
14	Eye Problem	2	0.4	7	1.6	9	0.9	>0.05	NS
15	Burns	1	0.2	1	0.2	2	0.2	>0.05	NS
16	Body Weakness	6	1.1	3	0.7	9	0.9	>0.05	NS
17	Unconsciousness/Comma	1	0.2	1	0.2	2	0.2	>0.05	NS
18	Fungal Infection	-	0	2	0.5	2	0.2	>0.05	NS
19	Sickle Cell anaemia	-	0	1	0.2	1	0.1	>0.05	NS
20	Vaginal Infection	-	0	1	0.2	1	0.1	>0.05	NS
21	Ear Problem	4	0.8	4	0.9	8	0.8	>0.05	NS
22	Insect Bite	2	0.4	-	0	2	0.2	>0.05	NS
23	Urine Infection	1	0.2	2	0.5	3	0.3	>0.05	NS
24	Boil/Folliculities	1	0.2	2	0.5	3	0.3	>0.05	NS
25	Amennorrhea	-	0	2	0.5	2	0.2	>0.05	NS
26	Breast Pain Infection	-	0	4	0.9	4	0.4	>0.05	NS
27	Anxiety	4	0.8	1	0.2	5	0.5	>0.05	NS
28	Hypertension	80	15.0	52	11.9	132	13.6	>0.05	NS
29	Others	15	2.8	16	3.7	31	3.2	>0.05	NS
	Total	**533**	**100**	**437**	**100**	**970**	**100**		

***PCR=Proportional Case Rate**

Chi-square = 40.405 with 28 degrees of freedom; P < 0.05 LS=S

When Proportional Case Rate as per type of personnel were explored it was found that highest Proportional Case Rate was of Students (28.35 %), followed by Administration, Estate and Works Non-Staff, Lecturers , Security etc. The rest of the departments had fairly low (<5%) Proportional Case Rate. (Table 4)

Table 4

Type of Personnel wise Proportional Case Rates

S N	**Morbidity Case**	**July**		**August**		**September**		**Total**	
		N	***PCR**	**N**	***PCR**	**N**	***PCR**	**N**	***PCR**
1	Student	151	33.63	83	30.18	41	16.67	275	28.35
2	Estate and Works	24	5.35	31	11.27	35	14.23	90	9.28
3	Administration	53	11.80	39	14.18	37	15.04	129	13.30
4	Audit	1	0.22	0	0.00	3	1.22	4	0.41
5	Security	26	5.79	10	3.64	14	5.69	50	5.15
6	Staff School	9	2.00	13	4.73	8	3.25	30	3.09
7	Library	9	2.00	8	2.91	7	2.85	24	2.47
8	Bursary	13	2.90	9	3.27	6	2.44	28	2.89
9	Non-Staff	25	5.57	21	7.64	17	6.91	63	6.49
10	Agriculture	12	2.67	6	2.18	10	4.07	28	2.89
11	ISS	20	4.45	7	2.55	5	2.03	32	3.30
12	IGST	1	0.22	0	0.00	0	0.00	1	0.10
13	IFS	4	0.89	0	0.00	0	0.00	4	0.41
14	IPS	3	0.67	0	0.00	3	1.22	6	0.62
15	RIART	0	0.00	0	0.00	1	0.41	1	0.10
16	ITC	2	0.45	0	0.00	0	0.00	2	0.21
17	Health Sciences	14	3.12	3	1.09	2	0.81	19	1.96
18	Halls of Residence	13	2.90	5	1.82	11	4.47	29	2.99
19	Technical and Science	4	0.89	4	1.45	4	1.63	12	1.24
20	Environmental Science	10	2.23	3	1.09	8	3.25	21	2.16
21	Engineering	15	3.34	6	2.18	10	4.07	31	3.20
22	Law	0	0.00	7	2.55	2	0.81	9	0.93
23	Science	5	1.11	9	3.27	4	1.63	18	1.86
24	Management	7	1.56	5	1.82	1	0.41	13	1.34

S N	Morbidity Case	July N	July *PCR	August N	August *PCR	September N	September *PCR	Total N	Total *PCR
25	Lecturers	28	6.24	6	2.18	17	6.91	51	5.26
	TOTAL	**449**	**100**	**275**	**100.0**	**246**	**100**	**970**	**100**

***PCR=Proportional Case Rate**

Mortality Profile:

Mortality pattern as various department was seen it was found that proportional death rate was maximum in Estate & Works (24.5%) followed by security and IPS, Agriculture etc departments. There was one death in each of ISS, Exams & Records, Institute of Education , Senate and Technical & Science Education Department. This variation as per sex was with significant variation. Females predominates in Exams & Records, Staff School, Halls of Residence, Premises and Institute of Education otherwise in other departments males predominate females. (Table 5)

Table 5

Department wise Mortality Pattern (Year 2008-2012)

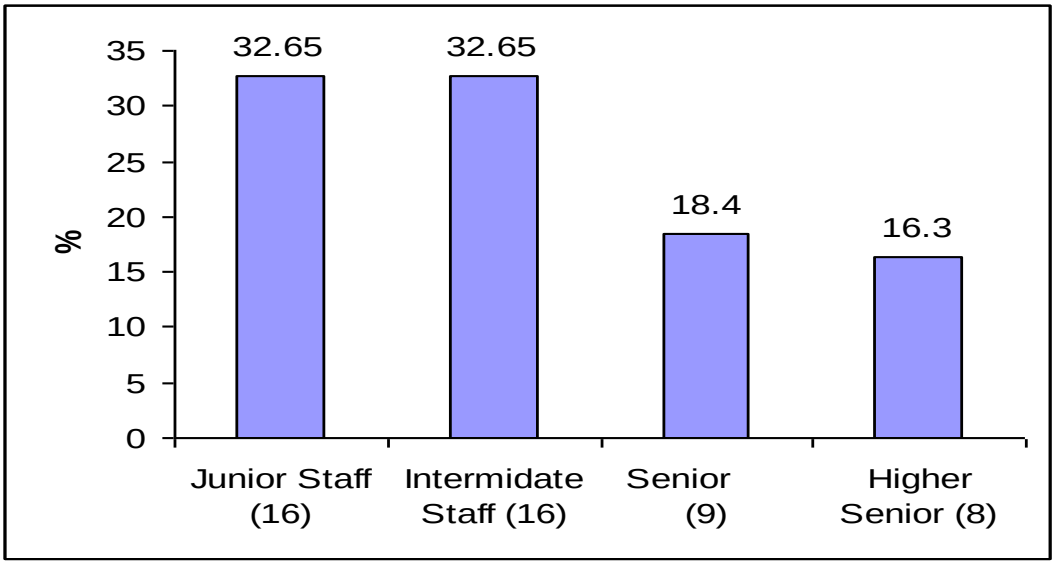
S/N	Departments	Male (N=43) N	Male (N=43) *PDR	Female (N=6) N	Female (N=6) *PDR	Total (N=49) N	Total (N=49) *PDR
1	Agriculture	4	9.3	0	0	4	8.2
2	Engineering	2	4.7	0	0	2	4.1
3	Management Sciences	2	4.7	0	0	2	4.1
4	IPS	5	11.6	0	0	5	10.2
5	ISS	1	2.3	0	0	1	2
6	Estate & Works	12	27.9	0	0	12	24.5
7	Exams & Records	0	0	1	16.7	1	2
8	Staff School	0	0	2	33.3	2	4.1
9	Halls of Residence	1	2.3	1	16.7	2	4.1
10	Security	5	11.6	0	0	5	10.2
11	Premises	1	2.3	1	16.7	2	4.1
12	Library	2	4.7	0	0	2	4.1
13	Science	2	4.7	0	0	2	4.1
14	Institute of Education	0	0	1	16.7	1	2
15	Registrar's Office	2	4.7	0	0	2	4.1
16	Senate	1	2.3	0	0	1	2
17	RIART	2	4.7	0	0	2	4.1
18	Technical & Science Education	1	2.3	0	0	1	2

***PDR=Proportional Death Rate**

Chi-square = 39.694 with 17 degrees of freedom; P=0.001 LS=S

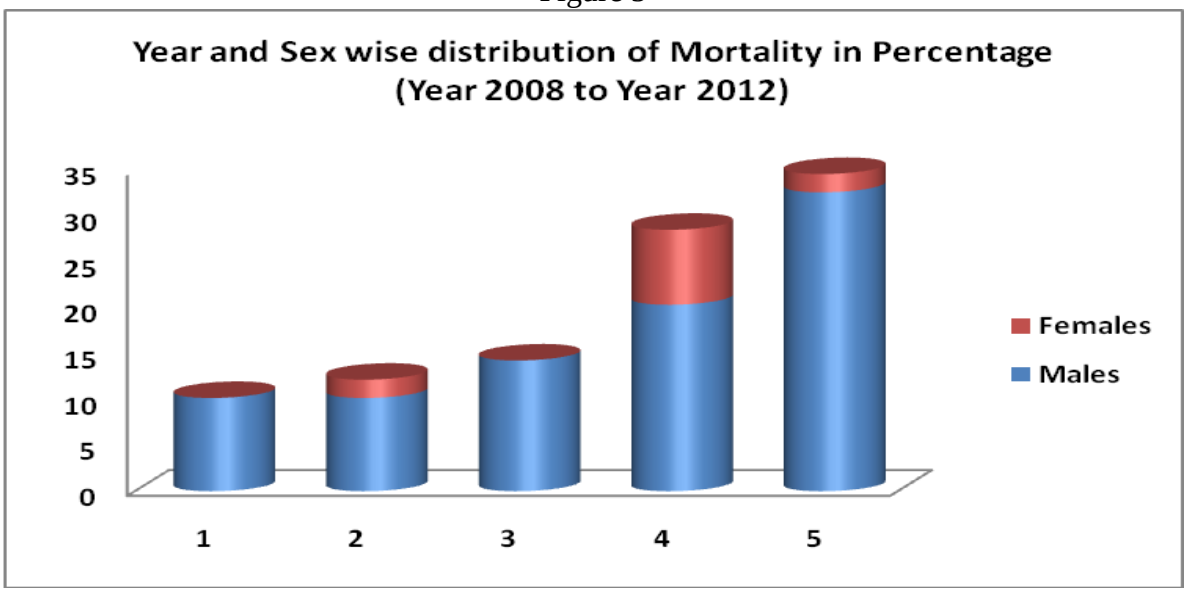
When Proportional Death Rate was explore various type of staff it was found that it was highest junior staff (32.65 %) followed by Intermediate, senior and higher level staff. (Figure 4)

Figure 4
Type of Staff wise Mortality Pattern (Year 2008-2012)



When Trend of mortality was observed it was found that minimum mortality was in year 2008 (10.2% of total deaths) and it increases with the time. When it was explore as per sex there was no significant variation. (Figure 5)

Figure 5



Chi-square = 5.897 with 4 degrees of freedom; P = 0.207 LS=NS

IV. DISCUSSION

Morbidity Profile:

Usable clinic data recorded within the University Community was high during the study period. A total of 91.3% of the cases had complete records. The current use of manual data entry to manage health records information is cumbersome and inefficient, and calls for updated information management system. Computerized data management should be introduced as alternative due such advantages as time saving, compactness, durability and ease of access to data.

The results on clinic visits showed higher male than female clinic attendance during the period. This implies that more females probably seek medical attention outside the University. Higher morbidity observed in July could be attributed to effect of seasonal changes on health as July is a peak in the rainy season in Nigeria. Decrease morbidity in August and September could be as result of the August break period and students on vacation.

Common diseases recorded were, fever/headache /cold followed by hypertension and the least leading cause was found to be diabetes .Fever and headache are usually precursors of malarial infection; however, they could also be symptoms of other pathological conditions in the body system, e.g. typhoid fever and hypertension. Hypertensive patients with malaria may also present headache, fever and joint pains. Diseases of the gastro-intestinal tract usually show symptoms of abdominal pain and/ vomiting. These symptoms could also indicate parasitic worm infestation. Most cases presented in this study are symptoms which hindered disease classification. Hence, there is need for proper case diagnosis backed up by laboratory investigations to aid disease identification, classification and treatment.

Hypertension, a cardiovascular disease was higher in males (15%) than females (11.9%). This higher rate could be attributed to proximate factors such as smoking, drinking and other physiological influences common among men. In general, lack of sleep, stress and age factors have been associated with high prevalence of hypertension.[12, 13] On the other hand morbidity due to cough/catarrh (respiratory disease) showed slightly higher prevalence in females (10.5%) than males (9%).

Generalized body pains were slightly higher in males (7.7%) than in females (7.3%), while abdominal pain/vomiting (gastro-intestinal disorder) and diabetes mellitus (an endocrine disorder) were slightly higher in females (8% and 5% respectively) than males (5.6% and 4.9% respectively). The abdominal pain could be attributed to dysmenorrhea in the female, stomach-ulcer, worm infestation, chronic and degenerative diseases generally. The prevalence of diabetes in our society has been on an increasing trend due to our over indulgence in westernized diet and life style.

The non-communicable diseases are related to lifestyle choices including physical fitness, exercise, limiting alcohol use and maintaining a balanced diet tend to lower morbidity and mortality. Sleeping 7 to 8 hours a night, maintaining desirable Body Mass Index (BMI), avoiding snacks and eating breakfast regularly are identified habits that can reduce morbidity and mortality.[14]

The observation of hypertension (13.6% prevalence) as the second leading cause of morbidity in the study area indicates that it is a threat to the community. This fact is corroborated by other authors[15,16] who stated that hypertension, a known independent and major risk factor for cardiovascular disease initially considered to be rare in Sub-Sahara Africa (SSA), is now a serious endemic threat and an important public health issue. Different studies in SSA reported higher prevalence of hypertension in urban compared to rural areas. A Study[13] conducted in the University of Port Harcourt Teaching Hospital (UPTH,) found 20.2% prevalence of hypertension similar to the 20.3% reported by other author[17] in a rural West African community, but higher than the 15.4% reported in rural Maiduguri villages, North-Eastern Nigeria by other author [18] whereas 17.3% reported in a rural community in India.[19]

Furthermore, prevalence rates of 46.4%, 30% and 48.8% were reported in studies carried out in a rural community in Enugu State, South Eastern Nigeria, a rural community in South Western part of Nigeria, and an urban city in Rivers State, Niger Delta region respectively. The high prevalence values obtained in these studies were attributed to high number of adults from 40 years and above. Hypertension was found to be common in the middle age and elderly.[20]

Mortality

The observation of higher mortality in male staff (87.8%) than female staff (12.2%) corroborated with the findings of one author,[1] who reported in their study in US found that, death rates are usually higher for males than females at all ages, except in areas where obstetric care is poor. Death rates for males are highest relative to those of females during the ages at which males are most active.

Total mortality for the study period was 49 cases comprising of 43 males and 6 females (87.8% and 12.2% respectively). Male mortality increased with the years, varying from 5 cases (10.2%) in 2008 to 16 cases (32.7%) in 2012. This increase could be due to a number of factors such as age, stress and gender makeup. It could also be due to the fact that more males utilize the medical clinic than the female.

Causes of mortality for the 49 cases recorded in the study were unknown due to lack of proper health records data keeping. Mortality causes in our culture are usually attributed to a variety of factors ranging from physical conditions to diabolical causes e.g. poison and witchcrafts. The fact that majority of deaths took place outside the University Medical Centre makes accurate record keeping difficult. These results revealed that mortality was most prevalent in Estate and Works (24.5%), Security (10.2%), IPS (10.2%) and Agriculture (8.2%). Employees of these departments are more exposed to hazards associated with the nature of their job.

Results further showed that mortality was most prevalent in the lower income brackets (junior and intermediate staff) than in the higher income categories (senior and higher senior staff). The former cadres recorded the highest mortality rates of 65.3% while the latter cadres recorded 34.7%. Low income, poor sanitation, poor housing, high cost of medical care, poor feeding habits, lack of physical exercise and other life styles could contribute to their vulnerability to morbidity and mortality.

While morbidity is higher among females, mortality is higher among males. The reasons proffered were that female admits to illness more readily than the males; or that experience a higher incidence of illness which presumably are less lethal than those by males.[19]

A survey of medical admissions at the University of Nigeria Teaching Hospital, Enugu in South East Nigeria in 1998 showed that neurologic diseases were the leading causes of admission into medical wards, followed by cardiovascular diseases, renal, gastrointestinal and respiratory diseases in that order. Human immunodeficiency virus (HIV) infection and its complications accounted for less than 8% of admissions in that study.[16] At the Ahmadu Bello University Teaching Hospital in Northern Nigeria, infections were the leading causes of admission followed by hypertensive cardiac disease; less than 3% of admissions were accounted for by HIV infections.[21]

In a recent study from a teaching hospital in South Eastern Nigeria, the majority of admissions into medical wards were on account of non-communicable diseases, with HIV cases contributing only 6.7%.[22] Communicable diseases such as hypertension and diabetes mellitus carry a risk of public health importance which is being down played in the face of efforts to combat HIV/AIDS' epidemic.[16]

Some major causes of death in the Nigeria are: malaria, diarrheal diseases, measles, pneumonia, CSM, tuberculosis (TB), cholera, and pertussis (whooping cough). Like other countries in the African Sub Region, Nigeria is affected by the HIV/AIDS pandemic, with a national prevalence rate of 5.8%.[23]

A glaring gap in the studies of morbidity and mortality that have been undertaken in developing world settings is the lack of uniformity in disease classification.16 The WHO International Statistical Classification of Diseases (ICD) was developed in the early 1990s to address this gap with a view to facilitating uniformity of disease coding and information exchange between various settings across the world.[24] Lifestyle choices, including physical fitness, exercise, limiting alcohol use, and maintaining a balanced diet, are related to lower morbidity and mortality. A study which began in 1965 identified seven health habits that can improve morbidity and decrease mortality due to chronic diseases. These are: engaging in regular physical activity, never smoking, drinking less than five drinks (alcohols) at one sitting, sleeping 7 to 8 hours a night, maintaining desirable body mass, avoiding snacks and eating breakfast regularly.[14]

V. CONCLUSION

This study concluded that there is leading causes of morbidity identified in the population were fever/headache/cold followed by hypertension, generalized body pain, abdominal pain/vomiting and

diabetes. Hypertension emerged as first among no communicable disease the second major cause of morbidity among the staff of RSUST. It was also concluded that males had higher rate of morbidity compared to the females. It was also concluded that although mortality was increasing with time but there was no sex wise significant difference in mortality trend.

CONFLICT OF INTEREST

None declared till now.

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