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WHOLE SCREENING ANALYSIS DISCERNING RECURRENTLY DIAGNOSED DISEASES IN A NORTHERN LOCALITY OF CÔTE D'IVOIRE

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ABSTRACT

Background: a correct interpretation as regards public health data represents a valid parameter in preventing community diseases. Here, we evaluated the epidemiological situation in a northern area of Côte d'Ivoire.
Methods: for this purpose, health condition data apropos 906adult patients, from year 2015 to year 2016 were collected at the Regional Hospital of Korhogo. To make straightforward statistical analysis, diagnosed pathologies were clustered in eleven categories. Data were processed by a statistical survey by assessing variance stability in discriminating patient's recurrently diagnosed diseases.
Results: our results revealed six (6) disease categories as frequently diagnosed and proposed parasitic and infectious pathologies as the most recorded health concerns (p-value≤0.05). Women seemed more susceptible contracting (i) parasitic and infectious, (ii) musculoskeletal and osteo-articular and (iii) endocrinal and metabolic diseases. Also, this study suspected a substantial correlation between patient age and both cardiovascular and musculoskeletal diseases incidence and as well supposed a suitable correlation between (i) endocrine, nutritional and metabolic diseases and (ii) musculoskeletal pathologies.
Conclusion: this survey hypothesized the present analyzed locality as heavily influenced by parasitic and infectious diseases, claiming a substantial feminization of the latter's and as well musculoskeletal and endocrinal diseases.

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INTRODUCTION

For many people especially those of western world, Africa is synonym with diseases, wars, conflicts and famine. While Africa cannot to be synonym with such claims, the continent cannot escape the fact that within the confine of its territory lies some of most deadly disease that have claimed more lives in history than war and famine together. Every continent has disease that are predominant in them and it is the same for Africa. Most of the disease in Africa are such that can be completely prevent by simple measure starting with proper education and personal hygiene. In most case these diseases in Africa affect women and children which from the most vulnerable demographic class.

Hence, Côte d'Ivoire a West Africa country does not escape this evidence. Also, it must be recognized that the health framework in Côte d'Ivoire remains very complex. Indeed, life expectancy in Côte d'Ivoire at birth was 51.3 years in 2006 (WHO, 2016). There are many causes of mortality. These include the continued degradation of the living conditions of populations, the persistence of endemo-epidemic diseases, HIV/AIDS, malaria, sustainable access to food in quality, feeding practices and causes related to modern lifestyles. Moreover, the crude death rate rose from 12.3 ‰ in 1988 to 14 ‰ in 2006 (WHO, 2016).

The burden of disease varies from one target to another. For children under five in 2008, their epidemiological profile was still dominated by a high incidence of common illnesses, as malaria (217.31 ‰), acute respiratory infections (82.53 ‰), and diarrheal diseases (41.07 ‰) (WHO, 2014). A resurgence of certain vaccine-preventable diseases has been observed, notably measles, tetanus and yellow fever. With regard to poliomyelitis, 34 cases were confirmed in 2011, while Côte d'Ivoire was being eradicated in 2001 (WHO, 2014).According to the statistic, Côte d'Ivoire has an HIV prevalence rate of 4.7% in 2005 among the general population. This prevalence was estimated at 3.4% in 2009 according to "ONUSIDA" predictions (ONUSIDA 2010 Report). Adults, between 30 to 34 years of age were the most affected by the epidemic with a prevalence of 10.4% in 2005. The epidemiological context is characterized by a feminization of the epidemic (6.4% for women against 2.9% for men). Moreover, tuberculosis/HIV/AIDS co-infection in 2007 (WHO, 2014) was approximately 39% and the incidence of multidrug-resistant tuberculosis was estimated at 2.5%.

The World Health Organization (WHO) estimates that each year there are between 300 million and 500 million clinical attacks of malaria globally, resulting in more than 1 million deaths (WHO, 2003). It is also assumed that about 85% of these deaths occur in Africa, mostly in young children (WHO, 2003). In Africa, malaria is the main cause of mortality in children less than five years old (20%) and constitutes 10% of the overall disease burden (WHO/UNICEF, 2003). It is responsible for approximately 40% of public-health expenditure, 30–50% of inpatient admissions and up to 50% of outpatient visits in areas with high rates of malaria transmission [WHO/UNICEF, 2003; Simon *et al*., 2005).In 2008, the incidence of malaria in the general Ivorian population was 84.16 ‰ with a high incidence in children under 5 years of age (217.31 ‰).

Also, a lacking of systematic scientific and epidemiological investigation regarding public health collected data in the national health structures and/or institutions and/or local regional hospitals contrasts with the right interpretation of the health status in northern area of Cote d'Ivoire. To partially overcome this issue, we collected and processed patient's cases from the Regional Hospital (RH) of Korhogo, a northern locality of Côte d'Ivoire, with the purpose to provide an adequate scientific and/or epidemiological platform recalling public opinion attention about the complex and delicate health concern of that locality (northern of Cote d'Ivoire). This study basing on several statistical surveys from R software (R core team, 2013) attempt to provide a whole screening investigation discerning and clustering frequently recorded diseases in the present analyzed area.

MATERIALS AND METHODS

Patient's data summary

Medicine Department of RH of Korhogo provided the framework for this study. For this survey, we carried out a review of the medical records offered by the Regional Hospital of Korhogo. In total,906cases of adult patients, including both female and male genders for the last two years (2015-2016),were processed by using R statistical software (R core team, 2013). Processed patients weight was estimated to 70 kg, with an age average around 43 years. In addition the present study recorded 60% and 40% cases of female and male patient's respectively. To simplify our statistical analysis, we clustered processed and diagnosed diseases in 11 different groups as following: (i) infectious and parasitic diseases; (ii) blood and hematopoietic organs pathology/immune system disorder; (iii) endocrine, nutritional and metabolic diseases; (iv) eye diseases; (v) ear pathologies and mastoid process troubles; (vi) cardiovascular pathologies; (vii)digestive system troubles; (viii) skin and subcutaneous tissue pathologies; (ix) osteo-articular system, muscles and connective tissue troubles; (x) genitourinary system diseases and (xi)respiratory diseases.

Statistical Analysis

Statistical analysis were performed by our own developed script in R programming environment. Qualitative data that indicated, considered diseases presence and/or absence, were transformed in numeric value by R function "*as. numeric"*; in "zero" (0) indicating absence or "one" (1) specifying the presence of the disease for each analyzed patient cases. The present statistical analysis based on R updated version (version 3.3.3) as providing numerous updated functions for data representation as well as providing quick analytical statistic test (R core team, 2013). R "*barplot*" script and/or function was used to create a histogram graphic assessing the proportion of identified diseases. Also, analytic statistical analysis evaluating variance ratio and difference between patient gender populations by processing analyzed disease categories were performed by using R "*var.test(x)"*script. However, considering the big size of our sample, we performed a student statistical test evaluating significant difference between diagnosed diseases referring to our processed patient population by applying R" *t.test (x)*" (Venables and Ripley, 2002). Then, both one and two sample "*t.test(x)"* were performed to test the hypothesis that two different populations (male and female) maybe assumed to come from distributions with the same mean (Venables and Ripley, 2002; Lehmann, 1975).

RESULTS

Survey of Diagnosed Diseases Proportion among Processed Patient Population Cases

We performed a proportion analysis as regards recurrently diagnosed diseases during years 2015and 2016 by processing 906 patients including both male and female genders. Figure 1 (bar-plot graphic) suspected six (6) diseases categories as recurrently diagnosed among handled patient cases (p-value≤0.05). Furthermore, patients characterized by infectious and parasitic diseases exhibited the highest proportion value when compared to the other analyzed pathologies categories (p-value≤0.05).

In the same tendency, the present analysis recorded a substantial high number of patients with digestive troubles. Also, our findings proposed a comparative occurrence *vis-à-vis* of (i) muscular and osteo-articular and connective tissue pathologies, (ii) cardiovascular diseases (CVDs), (iii) endocrine, nutritional and metabolic and as well (iv)respiratory diseases (Figure 1). Taking together, these results suggested our analyzed are a as influenced by infectious and parasitic pathologies and digestive system troubles.

male patient cases by processing the eleven (11) diseases categories (F = 4.8499, num df = 10, denom df = 10, ratio of variance =4.85 and p-value = 0.02). In the other words, these results advised an impact of patient gender as regards discriminated disease categories (Table 1).Then, the present analysis suspected (i) infectious and parasitic diseases(ii) digestive system pathologies, (iii) connective tissue concerns and muscular and osteo-articular troubles as well as(iv) endocrine, nutritional and metabolic

Table 1. Proportion analysis evaluating the link between recurrent diagnosed diseases and processed patients gender

Disease Categories	Females (%)	Males (%)
Infectious and Parasitic Diseases	125 (41.39%)	54 (30.17%)
Blood and Hematopoietic Organs Pathology/Immune System Disorder and/or Troubles	6 (1.99%)	-- (--%)
Endocrine, Nutritional and Metabolic Diseases	33 (10.93%)	19 (10.61%)
Eyes Diseases	2 (0.66%)	1 (0.56%)
Ear Pathologies and Mastoid Process Troubles	-- (--%)	1 (0.56%)
Osteo-Articular System/ Muscles/ Connective Tissue Pathologies	36 (11.92%)	18 (10.06%)
Skin and Subcutaneous Tissue Pathologies	4 (1.32%)	3 (1.68%)
Genitourinary System Diseases	5 (1.66%)	9 (5.03%)
Cardiovascular Pathologies	28 (9.27%)	23 (12.85%)
Respiratory Diseases and/or Troubles	17 (5.63%)	19 (10.61%)
Digestive System Pathologies	46 (15.23%)	32 (17.87%)

Table 2. Descriptive statistical analysis assessing the link between patient's gender and recurrently diagnosed diseases

	Female (normalized data)	Male (normalized data)	Female (non-normalized data)	Male (non-normalized data)
Mean	15.73	15.36	52	27.5
Median	11.42	11.73	43.5	21
¼ Quartile	9.69	10.61	29.25	19
¾ Quartile	14.4	16.61	43.5	29.75
Maximum	41.39	30.17	152	54
Minimum	5.63	10.06	17	18
Variance	168	61.03	2490.8	195.5
Standard deviation (SD)	12.96	7.81	49.91	13.98

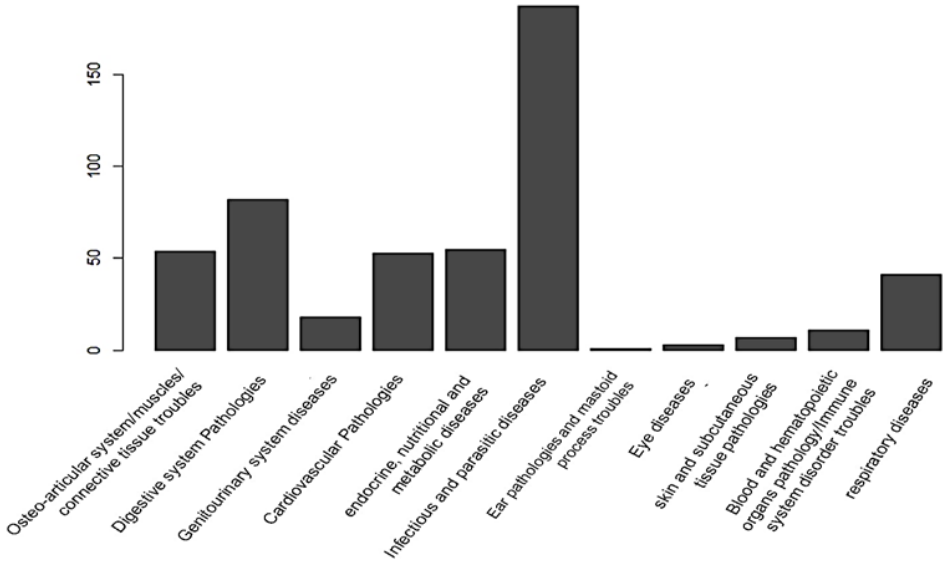

Figure 1. Bar-plot graphic representing the proportion of diagnosed diseases on 906 patient cases in a northern area of Côte d'Ivoire (years 2015 and 2016)

Assessment of the Relationship between Patients Gender and Discriminated Disease Categories

For this survey 302 male and 179 female patient cases have been processed (Table 1). Then, 53.1% of total handled patients were considered for this analysis. We assessed the relationship between analyzed patient gender and diagnosed diseases by processing a statistical test executing a Fisher test, suspecting a significant difference between both female and

Diseases as reasonable discriminant factors for female patients (Table 1). The same survey revealed the susceptibility of male gender contracting genitourinary pathologies as opposed to female (Table 1). Also, it is noteworthy to underline that blood and hematopoietic organs and immune system disorder have been recorded for male patient cases exclusively (Table 1). Lastly our results advised no significant difference between patient genders by handing out cardiovascular and respiratory diseases.

In summary, this survey suggested a reliable vulnerability and susceptibility of female developing parasitic, infectious, metabolism, connective tissue concerns and as well muscular and osteo-articular troubles.

Patient Populations Variance Analysis by Processing Detected Recurrent Diagnosed Disease Categories

We previously discriminated six (6) disease categories as recurrently diagnosed in the present analyzed locality (Figure 1). Here we were interested to evaluate the statistical variability of processed patient cases basing on above evoked recurrently identified disease categories.

So, we processed normalized data (percentage values) regarding recurrent diagnosed pathologies with the purpose to assess the performance of analyzed patient cases in term of variability as regards to recurrently discriminated diseases. The present survey as expected showed the influence of statistical normalization procedure in reducing analyzed data variability (Figure 2).

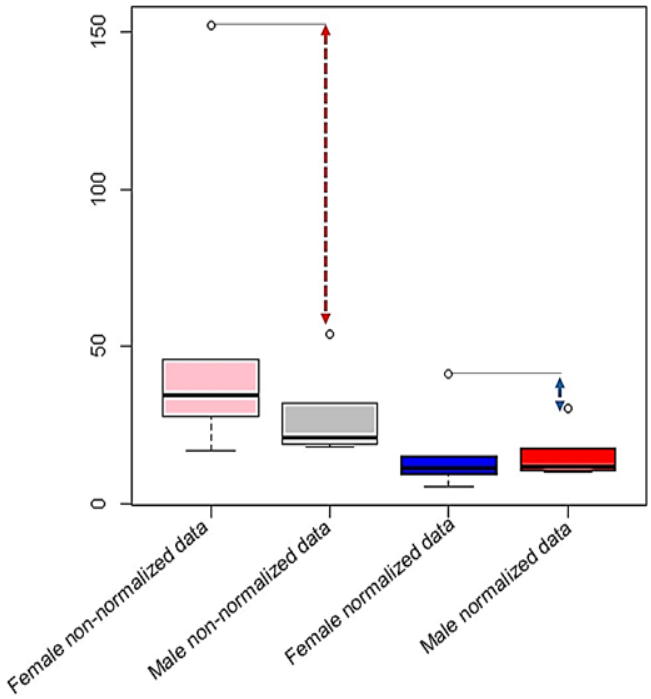

Figure 2. Variability estimation between females and males patient cases by processing recurrently diagnosed diseases and/or pathologies categories by row and normalized (proportion) data

Fisher test comparing both female and male genders variances by processing row data as regards recurrently diagnosed diseases diagnosed disease categories exhibited 12.74 as estimated variance ratio (p-value≤0.01),while the same analysis by processing normalized data displayed 2.75 as variance ratio (p-value ≤0.1) (Figure 2).

Taking together these results highlighted and/or emphasized significant variance difference between males and females patient case by processing recurrently diagnosed diseases in the presently analyzed locality (0.01<p-value<0.1) (Figure 2 and Table 2).These results delicately excluded blood and hematopoietic troubles, eyes diseases, ear and mastoid pathologies and skin and subcutaneous tissue pathologies as discriminant pathologies comparing patient's genders (see also Table 1).

Variance Correlation Survey between Recurrently Diagnosed Diseases and/or Pathology Categories

Next we performed a correlation analysis apropos inter and intra diagnosed diseases variabilities. Our findings exhibited infectious and parasitic diseases feature as exhibiting a high intra variability proportion (Figure 3). This result suggested a strong contrast between (i) infectious and parasitic diseases and (ii) cardiovascular, genitor-urinary, digestive and respiratory pathologies (Figure 3).

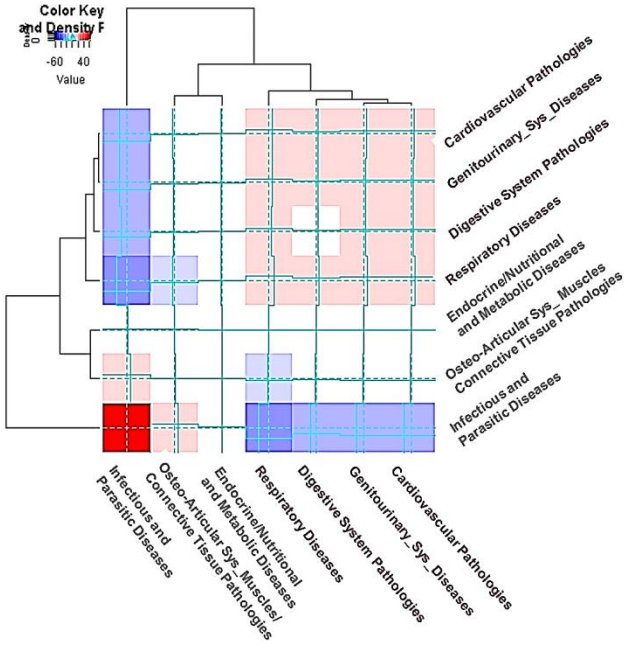

Figure 3. Relationship between recurrently diagnosed diseases categories by a variance Pearson correlation analysis

Also, the same survey highlighted the lowest intra variability value by processing patient cases associated with digestive system troubles as opposed to the other's detected and/or recurrently diagnosed diseases. In addition, digestive system diseases, respiratory trouble, cardiovascular and genitor-urinary system pathologies, exhibited a comparable variance parameters, suspecting a relative concordance between the latter's (Figure 3).

In the same tendency our survey suspected a substantial agreement in term of variance correlation (p-value<0.1), between (i) endocrine, nutritional and metabolic diseases and (ii) connective tissue and muscular and osteo-articular pathologies categories (Figure 3).Considering as a whole, this survey suggested a high variability among patient associated with infectious and/or parasitic diseases as opposed to the other's analyzed pathologies categories as well as established a link between both (i) endocrinal nutritional and metabolic troubles and(ii) connective tissue and muscular and osteo-articular disease categories.

Composition and Proportion Analysis of Recurrently Diagnosed Pathologies

We showed that 36.52% of analyzed patients were diagnosed and/or were associated with infectious and parasitic cases (Figure 1). In total more than 82%of this patients were associated to HIV (67%) and malaria (20%) infections(Table 3).

Table 3. Proportion analysis of recurrently diagnosed diseases in Korhogo locality (2015-2016)

Infectious and Parasitic Diseases		Respiratory Disease Category		Digestive System Diseases Category		Osteo-Articular/ Muscular Diseases		Cardiovascular Pathologies		Endocrinal, Nutritional/ Metabolic Troubles	
Diseases	Ratio (%)	Diseases	Ratio (%)	Diseases	Ratio (%)	Diseases	Ratio (%)	Diseases	Ratio (%)	Diseases	Ratio (%)
HIV/AIDS	62%	Pneumonia	57%	Gastroduodenal Ulcer	54%	Lombosciatic	75%	Hypertensive	79%	Diabetes	100%
Malaria	20%	Bronchitis	16%	Colopathy	22%	Back Pain	7%	Heart Pathology	21%	--	--
Tuberculose	6.5%	Rhinitis	13.5%	Gastritis	19%	Arthrosis	2%	--	--	--	--
Gastroenteritis	6%	Sinusitis	8%	Hemorrhoid	5%	--	--	--	--	--	--
Zone	2%	Asthma	5.5%	--	--	--	--	--	--	--	--
Hepatitis	1.5%	--	--	--	--	--	--	--	--	--	--
Chickenpox	1%	--	--	--	--	--	--	--	--	--	--
Influenza	1%	--	--	--	--	--	--	--	--	--	--
Herpes	1%	--	--	--	--	--	--	--	--	--	--

Table 4. Age and gender impacting recurrently diagnosed diseases *vis-à-vis* of analyzed patient populations

Age Intervals (Years)	Infectious and Parasitic Diseases		Respiratory Diseases		Digestive System Diseases		Osteo-Articular/ Muscular Diseases		Cardiovascular Pathologies		Endocrinal, Nutritional/ Metabolic Troubles	
	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males
]14, 20]	1	0	0	0	0	0	0	0	0	0	0	0
]20, 35]	4	4	2	2	5	3	0	1	1	0	1	0
]35, 50]	5	5	6	5	10	5	8	3	3	4	0	0
> 50	7	2	5	2	2	5	11	1	9	7	3	0

Also, both tuberculosis (6.5%) and gastroenteritis (6%) represented 12.5% of total patient cases with infectious and parasitic troubles (Table 3). As previously mentioned, Figure 1 suggested digestive diseases categories as representing 16.01% of diagnosed patients. This disease group and/or category included gastro duodenal ulcer (54%), colophaty (22%), gastritis (19%) and hemorrhoid (5%).The same survey showed that the totality of patient diagnosed as exhibiting endocrinal, nutritional and metabolic pathologies (10.74%),were detected as diabetic and/or as developing diabetes diseases. Also, muscular and osteo-articular diseases representing 10.55% of treated patient cases, consists of lombosciatic (75%), osteoarthritis (17%), back pain (7%) and arthropathy (2%). Focusing on cardiovascular disease category, which represented 10.35% of processed patient cases, we were able to discriminate two different group's clustered in (i) hypertensive (79%) and cardiomyopathy (21%) patients (Table 3). Finally, respiratory diseases that characterized 8% of diagnosed patient cases, included the following pathologies: pneumonia (56%), bronchitis (15%), rhinitis (12%), tuberculosis (7%), sinusitis (7%) and asthma (3%) (Table 3)

Finally, respiratory diseases that characterized 8% of diagnosed patient cases, included the following pathologies: pneumonia (56%), bronchitis (15%), rhinitis (12%), tuberculosis (7%), sinusitis (7%) and asthma (3%) (Table 3). These results provided detailed proportion survey regarding recurrent diagnosed diseases in our analyzed distric and proposed HIV and malaria and pneumonia, gastro duodenal ulcer and colopathy as well as lombosciatic and hypertensive trouble as frequent health concerns in the present analyzed and considered area.

Relationship between Recurrently Diagnosed Pathologies and Processed Patients Age and Gender

Next, we integrated patients age and gender and recurrently diagnosed disease features. This analysis included a total of 121 patient cases because of data missing regarding gender and/or age parameters *vis-à-vis* of certain patients.

However, the present analysis claimed an agreement with our previous results confirming the considerable proportion of infectious, parasitic and digestive system apparatus diseases in the studied patient populations (Table 1 and 4). In the same tendency, Table 4 confirmed the high propensity of female contracting infectious and parasitic and digestive system pathologies as opposed to men (see also Tables 1). Also, the present analysis suggested a weak proportion of young patients with age comprised between 14 and 20 years by processing recurrently diagnosed diseases (Table 4). Interestingly, our findings generally suggested a growing proportion of processed patients by increasing age parameter value disregarding the latter's gender features. In fact, high density and/or ratio as regards analyzed patients that contract recurrently diagnosed pathologies have been recorded for an age value higher than 35 year (named old patient's category). Moreover, our analysis advised differential behavior between male and female genders displaying an age avarage ≥ 35 by processing and/or analyzing connective tissue and muscular and osteo-articular pathologies. In other word, old female patients were suspected to be more susceptible exhibiting and/or manifesting connective tissue, muscular and osteo-articular pathologies as opposed to the old male patients (p-value=0.03). The present survey also proposed cardiovascular pathology as strongly influenced by patient's age parameter regardless the gender as oppose to the other recurrently discriminated and/or diagnosed diseases(p-value=0.02). Considering as a whole, our results supposed the susceptibility of female patients with an age average> 35 (old female gender patients) manifesting connective tissue and muscular and osteo-articular trouble in comparison to old men gender patients (p-value<0.05), and evoked a non-significant difference between female and male patient cases concerning cardio-vascular, respiratory, digestive and infectious and parasitic pathologies for patient category with an age average higher than 35 years (Table 4).

DISCUSSION

Management and right statistical interpretation as regards community population public health data, represents a valid approach assessing and weighing the latter life feature. Then, the right statistical interpretation apropos data describing community health state, can undoubtedly contribute improving and protecting community population on the subject of brutal epidemic by predicting and/or anticipating grave health concerns. The present study by processing 906 patient cases collected at the Regional Hospital of Korhogo, allowed to evaluate *via* a bio-statistic approach, public health platform in that district. As our knowledges, this study represents the first scientific investigation in term of bio-statistical and/or bio-medical screening survey *vis-à-vis* of this locality. The present survey evidenced six (6) diseases categories as recurrently recorded in this locality (Figure 1). Interestingly, these results suggested and exhibited processed area as sturdy governed by the parasitic and infectious pathologies followed by digestive health concerns (Figure 1). Then, the high proportion of infectious and parasitic diseases among analyzed patient could be explained by the fact that, Korhogo locality sited in a tropical area. Moreover, our findings exhibiting a relevant proportion of patients cases with digestive apparatus concerns (Figure 1), suspected negligent hygiene attitude (Lallié *et al*., 2016) as well as a wrong alimentary habit. However, the same survey alerted a considerable occurrence of cardiovascular diseases in this analyzed area. Moreover, our findings evidenced no significant difference between male and female patients with an age average higher than 35 years (old patient) in term of manifesting cardiovascular pathologies (Noel *et al*., 2017). The same analysis, suggested nutritional and metabolic and endocrinal pathologies and as well connective tissue, muscular and osteo-articular troubles as frequently diagnosed in the studied locality. Considering as a whole, our findings detailing Korhogo district health situation, evidenced clearly a predominance of parasitic and infectious pathologies subjugated by malaria and HIV/AIDS infections (WHO/UNICEF, 2003; WH, 2014 and Simon *et al*., 2005) (Table 3). Next, assessing the relationship between patient gender and recurrently diagnosed diseases, we were able to show the high vulnerability and susceptibility of female gender contracting infectious and parasitic pathologies, nutritional, endocrinal and metabolism troubles and muscular and osteo-articular diseases as opposed to male patients, suggesting the feminization of these pathologies (Table 1). In the other words our findings subtly revealed a substantial difference between men and women patient in contracting recurrently recorded pathologies in the northern analyzed area of Côte d'Ivoire (Table 2). Indeed, these differences have been fully supported by our performed multivariate statistical analysis through a boxp lot survey, since both processed row and normalized data revealed differential behaviors among both processed patients genders by assessing such diagnosed pathologies (Figure 2).In addition, the same statistical analysis confirmed the impact of data normalization system in reducing the latter variability, making that data suitable for an inference statistical analysis avoiding inappropriate conclusion (Arthur *et al*., 1988).Also, the present survey promoted northern area of Côte d'Ivoire as moderately influenced by respiratory diseases (WHO, 2016). Indeed, respiratory system troubles recorded in that locality seem dominated by pneumonia (57 %) and bronchitis (16 %) pathologies (Table 3).

It is noteworthy to underline that northern regions of Côte d'Ivoire are characterized by a great dry season accompanied by regular dust tempest. This site is located between an average altitude of 392 meters between - 5 ° 34 '31" and - 5 ° 29' 34 " West longitude and between 9 ° 31 '23" and 9 ° 31' 32 " latitude North and 5°38' 83.2" at an average altitude (Diarassouba *et al*., 2015).The climate in this area is characterized by two type's Sudanese seasons: a dry season, from November to April, punctuated by the Harmattan (dry wind from the Sahel) and a rainy season from May to November (Diarassouba *et al*., 2015).Basing on these observations, we suspected season and climate features as impacting recorded respiratory pathology cases in this district, since the role of environmental factors and implications for epidemic and diseases preparedness has been fully evoked and demonstrated (Mendelsohn *et al*., 2008).In addition, this study revealed a strict correlation between patient's age and recurrently diagnosed diseases (Table 4). Indeed, patients with an age average under 35 years were not significantly influenced by recurrently diagnosed pathologies (Table 4). In the other word, the present recurrently diagnosed diseases (Figure 1) exhibited a normal distribution among patients with an age average under 35 years (Table 4). Oppositely to this tendency, female patients with an age average around 50 years resulted strongly affected by connective tissue and muscular and osteo-articular troubles in comparison to male patients with the same age average (Table 4). Then, observed differential attitude between male and female patient with an age average ≥ 50 years in manifesting connective tissue and

muscular and osteo-articular troubles could be supported by the physiological difference observed amongst the latter's, due perhaps to the menopause expressing as regards female patients with an age average feature around 50 years (Bay *et al*., 2013).Also, our survey by processing variance correlation analysis, hypothesized an agreement between (i) connective tissue and muscular and osteo-articular troubles and (ii) nutritional, endocrinal and metabolic diseases manifestation (Figure 3). It is well accepted that systemic factors regulate the metabolism of joint tissues, and that substantial cross-talk between tissues actively contributes to homeostasis. Indeed, there is a substantial evidence for a connection between metabolic health and development of muscular and oste-articular trouble in women after menopause (Bay *et al*., 2013). Next, our results suggested a high variability by processing patients infested by parasitic and infectious pathologies as opposed to the other recurrently diagnosed pathologies (Figure 3), suggesting a careful interpretation of that data in taking statistical decisions as regards patients identified as developing and/or contracting HIV/AIDS and as well malaria and parasitic infection.

Conclusion

The present study highlighted and detailed health situation in Korhogo locality (a northern locality of Cote d'Ivoire) and suggested that area as substantially influenced by parasitic and infectious pathologies. The same findings evidenced a feminization distinguishing of this disease categories and as well connective tissue, muscular and osteo-articular and metabolic, nutritional and endocrinal pathologies. Finally the present survey evidenced a considerable correlation between patient age and both cardiovascular and musculoskeletal diseases incidence and suspected a suitable correlation between (i) endocrine, nutritional and metabolic diseases and (ii) musculoskeletal system pathologies occurrence especially in women's patient.

Interest Conflict: Authors declare no interest conflict.

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