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# **The Old Hindustan Tibet Road and Kotgarh: 1815-1947**

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## **Abstract**

The year 1815, is a watershed in the history of Shimla Hill States because, in this year, the British established their control over the region and opened a new chapter in the relationship between the Shimla Hill States and the British Government. After winning the war the British restored the petty hill kingdoms to their legitimate rulers, except retaining small tracts, detached plots situated on the hills for establishing the Military cantonments in these regions. These isolated patches scattered at considerable intervals among the hill states were formed into Shimla District, under the direct administration of the British Government. This made the British Government the paramount power in relation to these states and it exercised paramountcy over the hill states from 1815 till independence in 1947. The territory of Sadoch/Kotgarh was also among the British territorial acquisitions within the hills which belonged to the small principality of Kotkhai. British troops continued to stay there until 1843 when the detachment was finally withdrawn and handed over to missionary activities. The retention of Sadoch/Kotgarh was due to the fact that it contained some good military posts and forts. This led to the construction of Old Hindustan Tibet road which changed the socio-economic and religious spheres of this region. The chief importance of Kotgarh was that it holds an advanced post towards the Punjab and Tartary probably the farthest in the north.

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**Keywords:** Old Hindustan Tibet Road, Kotgarh, Christian Missionaries.

## **Introduction**

The intervention of the British in Indian socio-economic evolution during the colonial period was due to the overall European influence which operated in three different spheres simultaneously - economic, religious and political. In the starting, the trade and commerce which the Europeans carried on, had no direct bearing on the social life of the people but with the

growth of their political domination, the economic impact proved disastrous both for social as well as economic spheres. Indian traditional economic fell to pieces and with it, its socio-economic structure also crashed. Even William Bentinck wrote in 1834, “The misery hardly finds a parallel in the history of commerce.<sup>1</sup>” Bipan Chandra has also elaborated this, “as a result of British rule, India was transferred by the end of 19th century into a classical colony..... Indian economy and social development were completely subordinated to the British economy and social development.” This worse socio-economic scenario affected the psyche of the masses, which gave fertile ground for the British for their vigorous activities. Through their political, economic and religious activities, they came very close to the Indian ways of life, or more precisely, they broke through the seclusion of Indian society for the purpose of preaching their own way of life. In this process of interaction, they understood India and India too understood them (the west.) The impact was not merely an imposition, but it was in the nature of an accommodation.

### **The Historicity of Old Hindustan Tibet Road:**

Routes are the sequence of pathways associated to supply places and public markets which are used for the commercially motivated transport operation and non- commercial activities. There has been a network of tracks and paths in Himachal Pradesh interconnecting different villages and trade centers since the earliest times. These have been the life-line for the economy of the region. Through these routes generations of traders, travelers and pilgrims travelled. These very trade routes were later on developed and improved into roads by local rulers and Britishers to boost the trade activities in their kingdoms to increase their income.

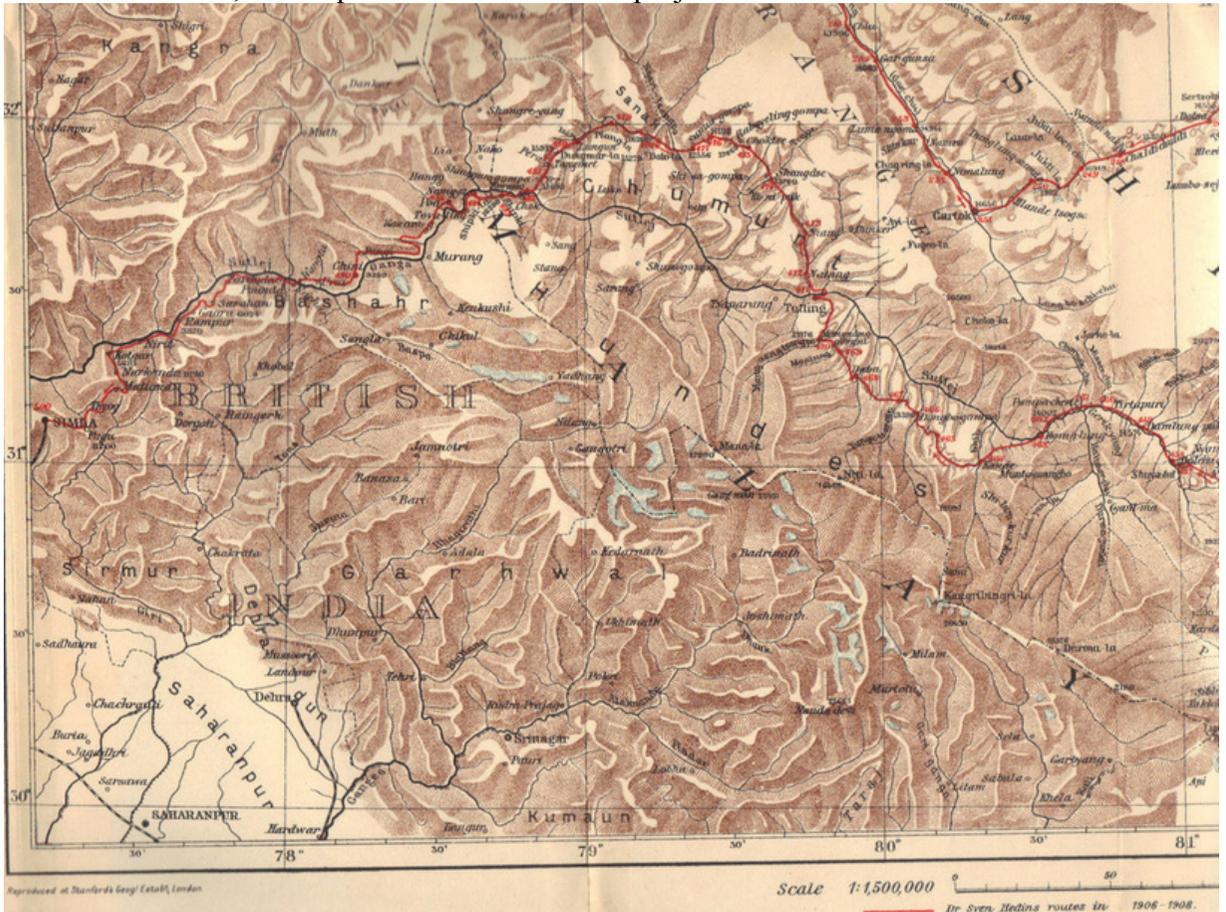
With the establishment of the regular dynastic feudal system under the British paramountcy, the trade, and commerce activities of the region were given special attention by the British overlords. There were both internal and external trade within Himachal and with the market in the plains, and goods were carried generally manually or on mules, ponies, and goats. Sometimes asses, camels and bullocks were also employed for this work.

In 1814 British adopted a new policy of Himalayan trade and commerce and by this policy; they became interested in that highly profitable trade besides having a strategic point of view. After the conclusion of the Anglo-Gurkha war of 1814-15, the hill states spread between the Yamuna and Satluj rivers came under the direct control of the British government and they restored the most of the state to their traditional rulers under the British over lordship. The chief of those states have to allow free passages to British merchants in their territories and they have to give the beggar (free labors)

and also to construct roads in their territories. To ensure the safety, from robbers, drought, famine and wild beasts the large groups of traders were formed. During the pre-independence period trade was carried along narrow paths in the valley and High Mountain passes and for the night and safe stay of the traders' posts were maintained at different places. Local rulers have to build shelter huts, the *sarais* (rest house). European travelers and adventurers have given vivid accounts of trade routes in Himachal. In the late 18<sup>th</sup> and early 19<sup>th</sup> centuries, Gurkhas took control of the passes and trade routes in the Himalaya to Tibet and Ladakh. British were forced by them to restrict their trade activities in the hill markets. In the Western Himalayas, the valley of river Satluj provided a safe and age-old route directly linking Punjab plains with the plateau of western Tibet. Mainly external trade through Himachal was with Tibet and the season was between May and October as after that period the routes generally remained snowbound. Rampur Bushahar became the central point for trading with Tibet, Ladakh, Kashmir and Yarkand. It was along the Satluj valley that most of the Indian Merchants traveled to the famous annual fair at Gartok, the commercial capital of Tibet. The Hindustan road was the most used tradition highway from Punjab Plains to the international border in the Bushahar state started from Pinjor. Rampur the capital of Bushahar state was the main center for trade through this road. Many roads branched off to the various destinations from this road.

The first European to travel through this road was the surveyor of East Indian Company Alexander Gerard, who travel to Shipki pass on the Indo-Tibetan border and also went to Shealkpur the last post on the border with Ladakh. In 1850 A.D. Hindustan – Tibet road was widened by Major Brigs. Lord Dalhousie (1848-1856) the British Governor-General of India ordered to commission the work of constructing Hindustan Tibet Road in June 1850 and also traveled through this road up to Kalpa. He wanted to explore the possibilities of a trade to Tibet. Commander-in-chief Sir Charles Napier designed the map of road and immense machinery at the disposal of the East India Company was pressed into service. In 1850-51 Hindustan Tibet road was realigned to pass through Dharampur, Solan, Kandhaghat and Tara Devi to reach Shimla. It came to be used for wheeled traffic in 1860. The road beyond Shimla was just seven or eight feet wide, zigzagging from Shimla to Theog, Narkanda, Kotgarh, and with the right bank of river Satluj to Rampur and from Wangthu it followed the left bank to Chini across a bridge on Satluj. The road brought the route into focus; the area had long been on one of the peripheral trade circuits of the legendary Silk Route. The path that passed the tract carried goods like musk, borax, wool, livestock, dry fruits, precious and semiprecious stones to and from Tibet, Kashmir, Ladakh, and Yarkand. Allan Michell I.C.S, the manager of Bushahar state mentioned

in his report on “External trade report of the Shimla District 1914-15” that this road was used for both import and export. In 1929 Sir Edward Wakefield, was deputed to look after and project the Indo-Tibetan trade.



Source: *Trans Himalaya Discoveries and Adventures in Tibet* by Sven Hedin 1913 MacMillan London

### Historical Background of Kotgarh:

Kotgarh (31° 19' 0" North, 77° 29' 0" East<sup>2</sup>) is a famous enchanting ancient village on the northern spur of the Hattu range<sup>3</sup> on the left bank of river Satluj, where Missionary intervention started very early<sup>4</sup>. The valley is a ‘U shaped valley’ which adds to the exceptional beauty of the area. It offers a beautiful panoramic view of the snow-clad Greater Himalayas. About 1800 meters down flows the turbulent Satluj fed by the melting glaciers of the Greater Himalayas. Its snaky and glistening appearance adds enormous beauty to the view of the valley area. On the right bank of this river, northward and westward are the old states of Kullu<sup>5</sup>, Suket<sup>6</sup>, and Mandi<sup>7</sup>. The culturally rich Kotgarh valley is also the apple heartland of

Himachal. Rudyard Kipling had called it the “Mistress of the Northern Hills”<sup>8</sup> and mentioned it in one of his short story ‘Lispeth’<sup>9</sup>.

The Kotgarh territory is situated in district Shimla of Himachal Pradesh, It is at a distance of 22 miles north-east as crow flies, but by road 50 miles from Shimla city on the Old Hindustan-Tibet road<sup>10</sup> and 6,500 feet above sea level. Kotgarh is also known as *Kotguru* or *Gurukot* which was originally called *Sandoch*<sup>11</sup>. It is a spur of the Hattu Mountain. It was the part of a small principality of Kotkhair<sup>12</sup>, which was one of the, Shimla Hill State<sup>13</sup>, but owing to its outlying position it was entirely separated from the remaining possessions of that state<sup>14</sup>. The history of Kotgarh for many generations was the history of continuous petty warfare. It was the region that was continuously attacked and exploited badly by the ruler of Bushahr, Kumarsain, and Kullu from eastern, western and northern sides for decades, resulting in lawlessness and mass poverty in this area<sup>15</sup>. Gurkhas also seized the territory for some time in the first decade of 19th century<sup>16</sup> which further worsened its position. In the area of study, Kotgarh minor economic activity started after 1815 as it was an advance military base (1815 to 1843) having some economic and political importance to the company and after 1843 it was handed to the Missionaries.

### **Kotgarh after 1815: First Stage of Evolution**

Prior to the Gurkha invasion the history of the hill states, for many generations appear to have been one of continuous petty warfare among them. These States had no influence on the history of northern India as a whole, they were neither economically and politically viable to be captured, but Gurkhas had an interest in this territory as they had an ambitious military programme of bringing the entire western Himalayas under their sway<sup>17</sup>. This led to the clash of interest between the Gurkha and the British which further led the Anglo-Nepalese war in 1814-1816. When the war was declared between the British Government and the Gurkha in 1814, most of the Hill States assisted the British forces, to the best of their ability, in driving the Gurkha from Shimla Hills. British Government also required the active cooperation of the Hill Chiefs to make their campaign successful. The year 1815, is a watershed in the history of Shimla Hill States, because in this year, the British established their control over the region and opened a new chapter in the relationship between the Shimla Hill States and the British Government. After winning the war the British adopted a liberal attitude and restored the petty hill kingdoms to their legitimate rulers<sup>18</sup>, except retaining small tracts, detached plots situated on the hills for establishing the Military cantonments in these regions<sup>19</sup>. These isolated patches scattered at considerable intervals among the hill states were formed into Simla District<sup>20</sup> and were put under the direct administration of the British

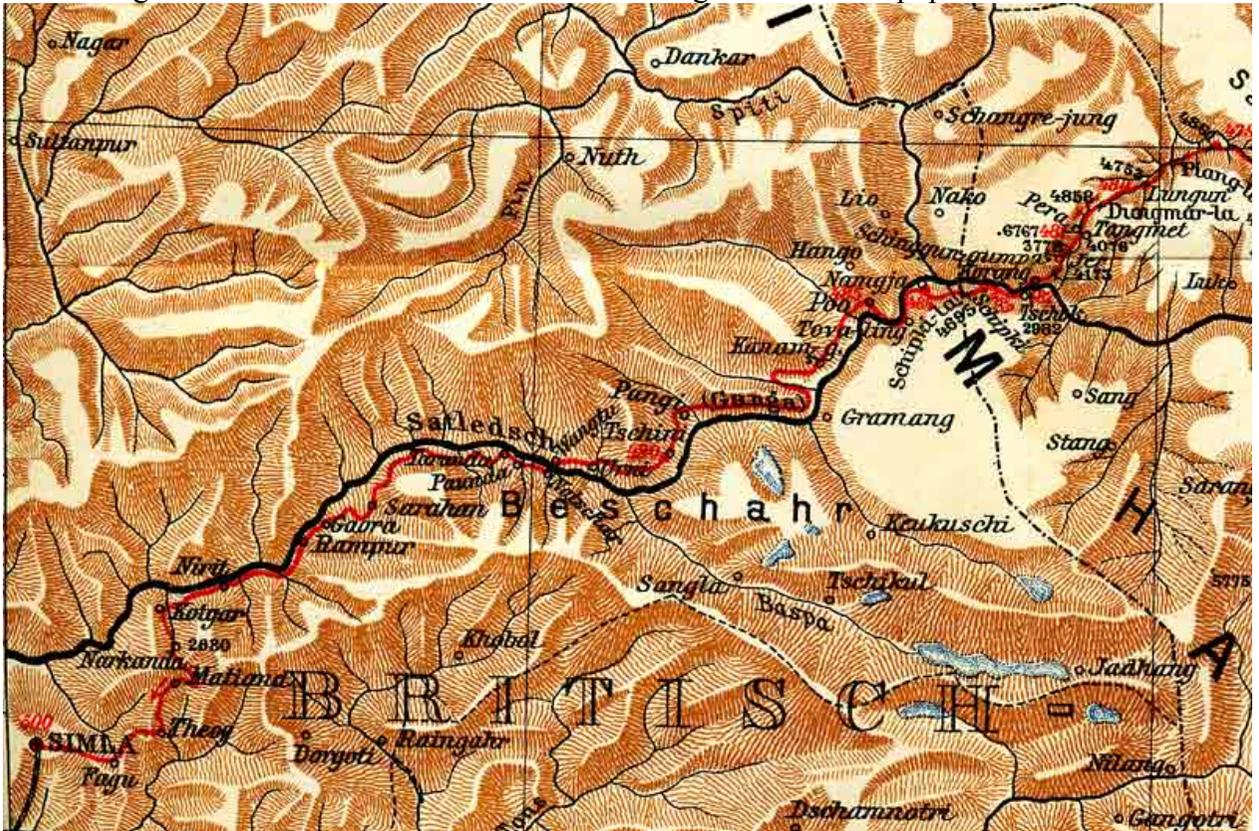
Government. After the process of restoration and reorganization, *Sanad*<sup>21</sup> were issued individually to each ruler, but the conditions laid down were almost similar. Non-compliance with the provisions was to be considered a violation of the agreement and the chiefs were to be disposed of and states annexed to the British Empire<sup>22</sup>. This made the British Government the paramount power in relation to these states and it exercised paramountcy over the hill states from 1815 till independence in 1947. The British Government also exercised its right to interfere in the internal administration of these states; whenever it felt it necessary to do so.

Territory of Sadoch/Kotgarh was also among the British territorial acquisitions within the hills which belonged to the small principality of Kotkhai. British troops continued to stay there until 1843, when the detachment was finally withdrawn<sup>23</sup>. The retention of Sadoch was due to the fact that it contained some good military posts including the fort of Hattu, Shilajan, and Baghee<sup>24</sup>. This led to the socio-economic and religious evolution of this area and slowly and slowly its importance in Northern India also grew. The chief importance of Kotgarh was that it holds an advanced post towards the Punjab and Tartary<sup>25</sup>. Archdeacon Pratt wrote on 8 Aug.1849, "Kotgarh has risen much in importance since Punjab has been to British territory. Its value will be great as a center from which other stations in the plains may be commenced"<sup>26</sup>. The first Cantonment was established in Kotgarh in 1825 with Major Boileau as an army commander and Garton as a civil administrator. Over the years Kotgarh became a trading center<sup>27</sup> as well, probably the farthest in the north. During this period there was peace for a long time, proper administration system was set up, and overall the economy started growing, which led to the first socio-economic change in this area.

### **Christian Missionaries and Mission Station of Kotgarh: Second Stage of Evolution:**

The second stage of evolution of Kotgarh started when the cantonment was withdrawn by the British and the buildings and property were handed over to missionaries<sup>28</sup>. It was here that the Kotgarh Mission, the oldest mission of the Church Missionary Society in Punjab was established in 1843 by Rev. J.D. Prochnow and A. Rudolph. Later on the Missionary Church Society (CMS)<sup>29</sup>, London and other societies from the West established Mission stations and constructed Churches in various parts of Simla<sup>30</sup>, Punjab Hill states and in the North-Western Himalayan region. This step led to the socio-religious change in these areas. Before even the missionaries had started their activities The Gorton Mission School was founded in 1843 at Kotgarh by the British authorities and by 1847 under the able guidance of a resident European teacher Mr. Voss the number of boys

increased to 21 and in the girl's school the strength rose to 19 girls. This interest of the locals toward the western education and Christianity led to the growth of these schools that had far-reaching effects on the populace.



Source: *Trans Himalaya Discoveries and Adventures in Tibet* by Sven Hedin 1913 MacMillan London

For the next more than sixty years, several Missionaries came and did their best in spreading the education and the Gospel. People from far places come to this mission station for learning and for trade<sup>31</sup> Rev. J.D. Prochnow has reported that “there were many visitors here in our solitude during this session among them His Royal Highness Prince Waldeman of Prussia, coming from the border of Tibet, spent a Saturday and Lord’s day here, say the school and attended divine service<sup>32</sup>.” During the winters of 1864-65, 11 youth from the upper reaches of Kinnaur were lodged and boarded to read the Bible, which they took with them on their return to their home<sup>33</sup>. In many of the villages scattered over the surrounding hills and valleys, Christian schools were established.

These schools were Dalan 1865, Bhutti 1865, Shawat, Pamlali 1866, Shatla & Baraga in 1873. St Mary’s Church was built-in Kotgarh in 1873

which proves that by this time missionary activities were on full swing and was supported up the masses of this area too. The conversion was very few and the process was slow. The first conversion took place in 1848 when Rev. Wilkinson baptized two school girls of 12 and 16 years.

By 1890 Kotgarh Mission Station was put under Rev. H.F. Beutal at that time it had a fully functional school where orphans were also provided shelter and trained by the mission. With the assistance of a few local helpers' mission works were carried in different ways, not only through school but also by the direct preaching of the Gospel to the people<sup>36</sup>. Extension tours were occasionally undertaken into the neighboring territories of Bushahr, Jubbal, Keonthal, Kumarsain, Suket, Mandi and Kullu. Though on the whole there were not many converts the Baptist register shows 184 names of which 60 were adults<sup>37</sup>. Under Rev. H.F. Beutal and Mrs. Beutal a new life was enforced into the mission due to their service, dedication and missionary work. Rev. H.F. Beutal mentioned that "a considerable degree of scarcity prevailed during the famine period in 1897 at Kotgarh and the hill district in general<sup>38</sup>." He opened relief work and employed 50 to 80 people for a time in recovering wasteland. He also planted about a thousand fruit trees. According to the church record, Rev. H.F. Beutal carried on the work of Pastor, preacher, teacher, doctor, judge, builder, farmer, gardener, accountant, and correspondent, etc<sup>39</sup>. It was under him that a flourishing orchard came up at Kotgarh and the sale of apples helped the missionary activities.

The medical mission was started in May 1903 in Kotgarh by the Church Mission Society and for this, Dr. A. Jukes was appointed here, and he provided a great service to the masses as a few months later cholera<sup>40</sup> broke out and this newly established medical mission provided full help to the locals. The paucity of missionary labor not only prevented the community from making much progress, it in fact hindered and ever nullified the success which had been actually obtained.

### **Kotgarh and Samuel Evans Stokes: Third Stage of Evolution:**

The missionary who made an impact on the socio-economic life of the region initiated the third stage of evolution in this area, he was **Samuel Evans Stokes**<sup>41</sup> (1882-1946), an American Missionary who later came to be known as Satyanand Stokes, arrived in India from Philadelphia (U.S.A.) on 9th Jan. 1904, at the age of twenty-one years only. He started his work as a missionary and social worker, but later on took a different path, totally different from other missionaries. He fought relentlessly against impressed labor 'Begar' (forcible labour), joined the Indian National Congress and participated in our freedom struggle. He was elected a member of the All India Congress Committee, member of the Punjab Provincial

Congress Committee and represented Punjab in all India Congress Committee. He was arrested on 3 December 1921, charged with sedition and promoting hatred against the British government and finally sent to six months of imprisonment. Mahatma Gandhi was touched and moved by Mr. Stokes imprisonment. In one of his articles, Mahatma Gandhi praised the efforts of Mr. Stokes and said that Mr. Stokes was the first American to go to jail for India's freedom struggle. When Gandhi went to England in 1931 to take part in discussions with British officials, he was asked how an Englishman going to India could serve India. The Mahatma pointed to Andrews and Stokes as examples to emulate. Any Englishman contemplating such a course should first see Andrews and then go to the subcontinent intent on learning and not teaching. Let him "efface himself and merge himself with the Indians as, for instance, Mr. Stokes has done in the Simla Hills," he stated<sup>42</sup>, "Stokes merged himself into Indian society about as completely as any Westerner could, eventually converting to Hinduism"<sup>43</sup>. He was a close friend of C.F. Andrews and of Richard B. Gregg, Gandhi Ji often referred to Mr. Stokes as an exemplary missionary. In Indian history, we find very few people who were not Indians by birth but contributed a lot to this nation and **Samuel Evans Stokes** was one of them<sup>44</sup>. Mahatma Gandhi who wrote in *Young India*: "No Indian is giving such battle to the Government as Mr. Stokes. He has veritably become the guide, philosopher and friend of the hill men."

It was in 1904 that **Samuel Evans Stokes** first visited Kotgarh and was moved as much by the extreme poverty of the villagers and the bleakness of their lives as by the scenic beauty of the region. At that time Evangelical work was at its peak in Kotgarh where almost all the converts came from the higher caste in the area and the mission workers were living a life of bounty and had forgotten the real aim of the mission. **Samuel Evans Stokes** stayed here for some time then left with Sadhu Sardar Singh<sup>45</sup> on a tour to Kishtwar in J&K. **Samuel Evans Stokes** wandered for nearly seven years in different parts of India but was repeatedly drawn to the beautiful valley of Kotgarh. He eventually decided to make India his home and purchased the property of Mr. Batesat at Baro Bag<sup>46</sup>. He built a house there and called it Harmony hall, in the name of his ancestral home in Pennsylvania, USA. Stokes married Agnes Benjamin (Priya Devi) a local girl in 1912. He lived among the people of Kotgarh as one of them, occupied their lifestyle, custom, and traditions as his own and shared equally in their joys and sorrow.

Stokes' efforts to try and improve a lot of the people among whom he lived had led to various experiments with crops that he felt could grow in the area and which had a good market. The rugged topography, narrow terraced fields that depended on the elements for irrigation and less than fertile soil

did not make it the best place for farming. He had tried tea bushes but these did not take too well here. The biggest contribution of Stokes was the apple revolution which started from Kotgarh. He brought delicious varieties of apple almost at the same time they were being introduced in the US in 1919. He planted a number of varieties- Winter Banana, Jonard, Summer Queen and Golden Delicious, etc.<sup>47</sup> Stokes began the scientific and commercial cultivation of the fruits, especially apple – an endeavor which has today revolutionized the entire economy of Himachal Pradesh and earned for it the title of the Apple state of India. This revolution has not only changed the socio-economic position of these areas but also has transformed the entire economy of the hill states of India, Bhutan and Nepal.

Mr. Stokes was not only a social worker but also a great educationalist. He was of the firm opinion that without education a nation cannot progress. He opened a school in 1923 in his estate and encouraged the unlettered farmers of Kotgarh to send their children to this school. He laid great emphasis on the education of girls. Mr. Stokes who had planted the first Red Delicious apples in 1916 encouraged the students of his school to learn the cultivation of apples. Every senior student was required to take part in practical horticulture demonstrations, which gave birth to the first generation of apple growers, able and true horticulturists of Kotgarh.

Stokes later decided to renounce Christianity and converted to Hinduism on Sunday, 4<sup>th</sup> September 1932 and came to be known as Satyanand Stokes. He also converted his wife Agnes Benjamin and gave her the name Priya Devi. His children who were baptized Christians were also converted to Hinduism. This brought the missionary activity in this region to an abrupt halt, but by this time the missionaries had contributed what they can. They have reformed the socio- economic and the religious spears all together and at last, have shown the way to the masses to go their own religion.

## **Conclusion**

In the olden times the sole mode of communication was the roads and the mode of transport on the road were mostly ponies and mule, while inflated skins and rafts were for crossing of rivers and streams. Mostly the people travelled on foot and merchandise were carried on mules, sheep and goats. Trade-routes have intimate relationship between trade and politics due to which socio-economic and political condition are affected by these routes in the area from where they pass. This effect is clearly visible when we study the relationship between Old Hindustan Tibet Road and Kotgarh. Old Hindustan Tibet Road has played an important role in the evolution of Kotgarh, which was a neglected part of one of the Simla Hill state, where poverty was at its worse and people had to live under the constant threat of

plunder from all sides. This place was a bone of contention for three neighboring states and there was no administration system of any kind. British Government, Christian Missionaries and at last Samuel Evans Stokes, "Satyanand Stokes" did their best in the evolution of this area and this all was only possible due to the Hindustan Tibet trade route.

### End Notes:

1. Sen, S.N., *History of the Freedom Movement in India (1857-1947)*, Wiley Eastern Ltd (1994) p.4
2. <http://www.kotgarh.in>
3. Hatu (10673feet) was also known as Wartoo, is one of the lofty stations on the old Hindustan- Tibet Road which was selected by Captain Hodgson & Lieutenant Herbert for prosecuting their great Trigonometrical operations, in order to determine the heights of the snowy peaks of the Himalayan Chain. It was also famous for the Gurkha Fort which British acquired after Anglo-Nepalese War 1815-16. Lloyd William & Alexander Gerard, *A Narrative of the journey from Caunpoor to the Boorendo Pass in the Himalaya Mountain 1821-22*, National Archive of India (Archives in India historical reprint), 2010, Asian Educational Services, India, New Delhi, pp. 160-63.
4. It was in 1843 when Kotgarh Mission the oldest Mission of Church Missionary Society in the Punjab was established here.
5. Hutchinson,J. *History of Punjab Hill States, Vol-II*, Department of Language and Culture, Himachal Pradesh, 2000, pp.413-473.
6. Ibid, *Vol-I*, pp.340-372, also see *Gazetteer of the Suket State 1927*, Indus Publishing Company, New Delhi. 1997.
7. Hutchinson,J. op.cit, pp.373-412, also see Mark Brentnall, op.cit, Pp.79-93
8. [ebookbrowse.net](http://ebookbrowse.net), Kipling. Rudyard, *Plain Tales From The Hills*, PDF created by pdf books.co.za, p. 3
9. Ibid. Pp 2-6.
10. Minhas, Poonam, *Traditional Trade And Trading Centers In Himachal Pradesh*, Indus Publishing Company, New Delhi,1997, pp.82-84, See also. *Gazetteer of the Shimla Hill States 1904*, Indus Publishing Company, New Delhi, 1997, p.1.
11. Verma. V, *Simla Hill states in the 19th Century*, B.R. Publishing Corporation, New Delhi,2008, pp.61-62.
12. Brentnall, Mark. *The Princely and Noble Families of the Former Indian Empire Vol- I*, by, Indus Publishing Company, New Delhi.

2004. Pp.327-332, also see, *Gazetteer of the Shimla Hill States 1904*, op.cit, p.1.
13. The Shimla Hill States were a collection of small and tiny States surrounding Simla and extending between 30° 46' and 32° 05' North and 72° 28' and 79°14' East. 28 in numbers they occupied an area of about 4800 sq. miles.
  14. The Kotkhai territory is entirely surrounded by Hill States, and is cut off from the tract Kotguru by 10 miles (as the crow flies) of hills. *Gazetteer of the Shimla Hill States 1904*, op.cit, p.1.
  15. Ibid. Pp.12-13.
  16. Ahluwalia, M.S. *History Of Himachal Pradesh*, Intellectual Publishing House, New Delhi,1983, pp 155-158
  17. Ibid, p. 154, "In 1805, the Gurkhas got another opportunity for expansion between the Satluj and Yamuna.....by 1812 they captured Bushar, and the conquest of the country between Yamuna and Satluj was complete.
  18. C.U. Aitchison, *A collection of Treaties, Engagements and Sanads, Relating to India and Neighbouring Countries, Vol IX*, Calcutta 1892, p.70.
  19. Military cantonments were needed for consolidating their own position in the hills. The territories retained were Bharoli (which consisted of Subathu, Siwah and Bharoli) Malawn, Sadoch (now known as Kotgarh) and nine parganas of Keonthal .
  20. The portion of Shimla Hill States under British administration was about 90 sq. miles. *Gazetteer of the Shimla Hill States 1904*, op.cit.
  21. *C.U. Aitchison*, op.cit, p. 70, also, see, G.R. Negi, op.cit, pp. 71-107 "In the process of restoring as well as in establishing closer but well defined ties between the British Government and the Shimla Hill States these sanads had an important place, as they defined the boundaries of various states of Shimla Hills"
  22. Ibid, pp. 71-107.
  23. *Punjab District Gazetteers. Vol VIII-A, Shimla District 1904*, pp. 18. Also, see G.R. Negi, op.cit p. 80.
  24. Ibid, p.108. Also see G.R. Negi, op.cit p. 147.
  25. G.R. Negi,op.cit, p. 80., Also see, *Proceeding of the Church Mission Society for Africa and East*, 1849-50, London 1850, p.cxxxvi.
  26. Ibid, p. 81.
  27. Minhas, Poonam, op.cit, p. 134.
  28. The British government encouraged missionary work in Kotgarh to enhance its influence in the area
  29. Negi, G.R, op.cit, p 146. Church Missionary Society (CMS) was established in 1799 by Church of England Independent and

- Presbyterian ministers to strengthen missionaries activities in Africa, Indian sub-continent, Middle East and Far east.,
30. The Missionaries of Church Missionary Society London and other societies from the west established Mission stations in various parts of Simla, Kangra, Chamba, Lahaul and Poo, in the erstwhile Simla and Punjab Hill States, now part of Himachal Pradesh.
  31. Minhas, Poonam, op.cit, p. 134.
  32. Negi, G.R, op.cit, p 146.
  33. Ibid, p, 146.
  34. Name of some small villages in and around Kotgarh
  35. *Proceeding of Church Missionary for Africa and the east, 1849-50*, London 1850, pp, cxxxvii., Also see G.R. Negi, op.cit, p 150
  36. *Gazetteer of the Shimla Hill States 1904*, Indus Publishing Company, New Delhi, 1997, p.118.
  37. Ibid, p, 118
  38. *Proceeding of Church Missionary for Africa and the east, 1897-98*, London 1898, p, 244, Also see G.R. Negi op.cit, p.156.
  39. *Proceeding of Church Missionary for Africa and the east, 1898-99*, London 1899, p, 236, Also see G.R. Negi op.cit p. 156.
  40. *Proceeding of Church Missionary for Africa and the east, 1904-04*, London 1904, pp, 243.also see G.R. Negi op.cit, p. 155.
  41. Born in Philadelphia, (Pennsylvania) USA on 16-08-1882 in a rich, illustrious American family. Some of his ancestors had participated in the Boston Tea Party. A Conscience which could not compromise with freedom was part of his family heritage.
  42. Gandhi, "*Speech at Indian Majlis*," Nov. 1, 1931, in *Collected Works*, XLVIII, 265
  43. Kenton J. Clymer., *Samuel Evans Stokes, Mahatma Gandhi, and Indian Nationalism*, *Pacific Historical Review*, Vol. 59, No. 1 (Feb., 1990), pp. 51-76
  44. The only Americans who approached Stokes in their knowledge of India and their acquaintance with Indian nationalism were American missionaries, some of whom spent most of their adult lives in India. Such a man was Sam Higginbottom, whose career in India from 1903 to 1945 paralleled that of Stokes.
  45. Sadhu Sardar Singh was a devoted Missionary and a good friend of Samuel Evans Stokes, who was baptized in St. Thomas Church at Simla by Rev. Redman on 03-09-1905.
  46. Name of a small village in Kotgarh.It was not as if Stokes had brought the first apple plants into India. In Kashmir, there was an indigenous variety Ambri— which was never developed nor had more than a limited local market. In the second half of the 19th

century came the English varieties — mostly Pippins, a few Granny Smiths and the like; these were also introduced in the hills of Himachal Pradesh. The turning point came, when the famous Stark Brothers' Nurseries of Louisiana began developing and patenting the "Delicious" variety of apple. In 1921, the first batch of Golden Delicious saplings arrived in Kotgarh

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# **Innovative and Strategic Aspects of Intellectual Property Management in State-Owned Enterprises of Georgia**

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## **Abstract**

Innovative, strategic management of IP is one of the currently urgent problems of the knowledge economy in Georgia. However, at this stage, many state-owned enterprises, organizations as well as enterprises where the state is partial shareholder, have not yet properly assessed the role of IP, as well as of other intangible assets, in creating sustainable competitive advantages, which are provided by the corporate governance standards as well as by the Guiding Principles (Guidelines) developed by the Organization for Economic Co-operation and Development (OECD), recommendations included in the World Bank's report on corporate governance of state enterprises and the recommendations and best practices related to the management of state-owned enterprises in EU member states.

The IP Management Strategy in State-Owned Enterprises simultaneously covers diverse areas of financial, technological, and marketing activities and is also destined to ensure the effective implementation and protection of IP rights.

Non-consideration of the IP's role in the technological development will lead in the near future to decreased investments in innovations, losses in budget accruals and the loss of the promising export trade directions.

The IP Management Strategy should mainly include such issues as: increasing the value of intangible assets and creating unique competitive advantages; ensuring technological leadership; providing of returns on investments in innovation; protection of IP rights on the IP objects; lobbying and promotion of trademarks, etc.

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**Keywords:** State-Owned Enterprises, Intellectual Property, Innovation, Intellectual Property Management, Public Administration.

## **Introduction**

The existence of state-owned enterprises in Georgia serves to various purposes. Such enterprises are used by the state to strengthen particular sectors of the economy, in order to implement the concrete state policy, to maintain state ownership on a strategic sphere for the state, or for the purpose of achieving some other goals (Tsukhishvili & Buadze, 2016; Shapiro & Globerman, 2012; Pargendler, 2012; OECD, 2015).

In the audit report on the effectiveness of the management and disposal of state enterprises, prepared by the State Audit Office of Georgia, it is stated that the main purpose of state ownership and management of enterprises is to ensure the effective performance of functions which are important for the state and / or to generate revenue from operations of these enterprises.

In Georgia, state-owned enterprises have not been successful and were massively privatized over the recent years. This was determined by high financial risks, low degree of transparency (including financial accountability) and low intensity of introduction of new technologies and modern technical equipment. This situation, by our opinion, was further worsened by the added low rate of the creation, introduction and protection of intellectual property, the rather limited portfolio of the available intangible assets, and the lack of any strategy focused on intellectual property.

In 2012, there were 1129 state-owned enterprises registered in Georgia and was started the process of privatizing, merging or liquidation of the significant part of state enterprises that existed under the State Property Management Agency. At the same time, the state in general was not trying to restrict the establishment of new state-owned enterprises, as such, across the country. The purpose was only to reduce the number of the state enterprises that were not making profit.

In 2016, according to official data, under the management of the National Agency for State Property were functioning 178 state-owned enterprises (the listing does not include non-entrepreneurial legal entities and enterprises established under the local self-governments, autonomous republics or those established by the other Legal Entities under Public Law (LEPLs).

According to data from the State Audit Office, as of 2013, among the total number of enterprises of this category, 111 companies were owned by various local self-governments and 63 enterprises were owned by the Autonomous Republic of Adjara. The state also owns share of the enterprise through means of the state joint stock company Partnership Fund. As of 2014, the fund owned 100 percent shares in 19 companies and 50 percent or less of shares in three companies around the country (Georgian Audit Office, 2015).

The Georgian government has attached a fiscal risk analysis of the year 2018 to the draft budget for 2019. According to this analysis, 68 state-owned companies ended 2017 with a loss of 562,937 million. Notably, during the period of 2012-2017, it was only in the year of 2012 when these companies managed to make a profit with their total revenue, while the loss was caused by the assets depreciation operation conducted by an audit firm. Particularly, in the case of the state company Georgian Railway, the audit company KPMG recognized the construction activities at a value of 382.6 million GEL that were carried out by GR in 2010-2012 to be a waste of assets, and in the case of the Georgian State Electric System, the similar assessment was given to the amount of 250.1 million GEL, as reads the relevant audit document (Maisuradze, 2016; Mikautadze, 2016; NASP of Georgia, 2020; n.ge, 2019).

According to the current report of the National Agency for State Property, as of 01.01.2020, the number of state-owned enterprises has decreased as a result of the relevantly targeted actions taken to minimize the existing number of non-profitable enterprises, and thus, their current number includes only 94 enterprises. However, significant portion of the still functioning state-owned enterprises remain under quite hard financial situation (Report of NASP, 2019).

### **The main text**

The process of further integration of Georgian state-owned enterprises into the global system of labor distribution simultaneously provides for the creation and use of intellectual property objects as of a key factor in shaping the consumer values. In the selected areas of scientific and technological development, the implementation of a targeted scenarios (within scopes of both traditional and new markets) for developing concrete technologies, products and services, as well for elaboration of a unified national system for innovations, is impossible without reaching new levels in the economic turnover, creation of new knowledge, taking leading positions in the area of intellectual property, etc. (Chiladze, 2018).

It is impossible for the Georgian government to solve its strategic tasks without intensifying the activities of both the state and private businesses. This refers to intellectual property as a strategic resource and the direction of how to stimulate the increase of its usefulness and effectiveness; Neglecting to take into account the role of the intellectual property in the development of technologies will lead to reduced investments in innovation in the near future, the occurred losses in the budget savings and in the wasted opportunities for the Georgian businesses and the whole country to profitably utilize the perspective directions for exporting the local products and services, including the intellectual property objects.

At the current stage, under the conditions of COVID-19, economic measures to protect and develop Georgia will be very importance. They should be provided with strategic assets in relevant areas, among which a special place is occupied by intellectual property rights. That is why it is important for the country to be able to achieve technological leadership in particular areas.

**Consideration of certain guiding principles of international organizations (such as Organization for Economic Co-operation and Development (OECD), World Bank, etc.) for the innovative management of state-owned enterprises in the Georgian reality**

It is well known that the guidelines developed by the **Organization for Economic Co-operation and Development (OECD)** on corporate governance of state-owned enterprises, represent recommendations aimed at ensuring the effectiveness, transparency and accountability in the operations of state-owned enterprises. The guidelines set out an internationally agreed standard. According to the guidelines, there is no universal method of managing a state-owned enterprise which can be applied under any jurisdiction.

Therefore, Georgia, taking into account the legal traditions of the country and the established regulatory mechanisms, should choose by itself and implement the appropriate management model. The guidelines are results-oriented and thus Georgia itself can decide what types of activities are desired to be carried out by state-owned enterprises and what activities are more appropriate to be privatized, as well as how it will manage to achieve this result (Shapiro & Globberman, 2012; OECD, 2005; OECD, 2015).

Innovative management of state-owned enterprises in the country is currently related with the number of important challenges. In my opinion, among these challenges should be especially noted about taking the effective decisions in the process of developing standards for creation, introduction and protection of the Intellectual Property Objects, as well with regard to expanding the current portfolio of intangible assets and also what concerns the elaboration of the strategy for intellectual property development.

It is known that the third guideline developed by ETGO provides for ensuring competition on the market. I think it is necessary to put this principle into practice so that Georgian state-owned enterprises, by using their intangible assets, could more actively conduct specific economic activities, while the introduced regulations are to ensure existence of fair competition. At the same time, I would note that those expenditures of the state enterprise that are taken under activities which serve to the public purposes (especially when it concerns expenses for creating intellectual

property facilities, competitive and innovative products etc.) should be funded by the state so that the state enterprise does not find itself in a rather weak competitive position as compared to competitor private companies.

### **World Bank Report: Corporate Governance of State-Owned Enterprises**

In 2014, the World Bank prepared a report on corporate governance of the state enterprises. The report focuses mainly on the state-owned enterprises engaged in entrepreneurial activities where the state participates as a majoritarian or important minoritarian partner / shareholder. The report provides the assessment mechanisms that can be used for study and evaluation of the standard for corporate governance of state-owned enterprises and also to assess the current conditions existing at the state-enterprises.

Studies have validated that the unsatisfactory performance of state-owned enterprises is mainly determined not by the external factors or the peculiarities of particular economic sectors, but rather by substantial shortcomings existing in the management of these state companies. I would note that this as well applies to the management of the intellectual property objects and other intangible assets.

In my opinion, there are actual fundamental flaws existing in the area of the intellectual property management in Georgia. That is why it is desirable to timely develop a standard or other relevant document for the management of the intellectual property so the enterprise managers can use it and also to make the state enterprises become subject under the relevant regulations.

I think it is necessary for a state enterprise to clearly define its goals and strategy in the area of intellectual property and also to appropriately document this goal and strategy. Based on the formulated goals and strategy, the enterprise should elaborate specific objectives and evaluation indicators in the area of intellectual property activities, which include both financial and non-financial aspects. Evaluation indicators allow us to evaluate activities and performance of the enterprise management, timely identify the problems existing in the sphere of creation, usage and management of intellectual property and also ensure the accountability of the enterprise management (Chiladze, 2019).

State-owned enterprises manage public finances. Therefore, it is important to control their financial activities and ensure fiscal discipline. At the same time, in the process of creating the intellectual property object, state-owned enterprises may perform public functions, for which they may as well receive a subsidy from the state so they do not suffer from competition

by the private sector; However, on the other hand, in order to carry out economic activities by using intellectual property objects, state-owned enterprises should not be given access to public finances, which could allow them to enjoy an unfair competitive advantage (Financing SOE, 2018; SOE in Georgia, 2016).

When regulating the state-owned enterprises and introducing reforms to their activities, the current situation should be assessed (including in terms of intangible assets on the balance sheet of the enterprise) and the main directions of the reform should be identified based on the relevant analysis. Since Georgia has a challenge to take a course on the country's innovative development, the role of the state-owned enterprises in economic activity, their successful reform should be based on the main driver of innovation - intellectual property. It is in this direction that it is important for the government to express its political will and carry out reforms in addressing the existing challenges.

In the process of creation of a centralized unit or of a unified coordination mechanism for managing state-owned enterprises in the country, the aspects related to intellectual property management should be equally taken into consideration.

### **Tasks and measures aimed at acceleration of technological development to be carried out in Georgian state-owned enterprises in connection with Intellectual Property**

The state enterprises in Georgia need to implement relevant tasks and measures to accelerate their technological development, which, obviously, should be linked with the goals of the effective institutional increase of the Intellectual Property in the country. In particular, the tasks of accelerating technological development may include: creation of new high-tech enterprises in the public sector (startups); increasing the level of commercialization of scientific research and technologies developed by the relevant universities and research organizations; increase the patenting activity of applicants employed at the state-owned enterprises; increasing the financial assistance provided to innovative activities within the state enterprises, through means of the venture capital finance market; expanding the scope of participation of Georgian state enterprises in the process of the international transfer of patented technologies (Kalanje, 2020).

### **Measures to Improve the Institutional Effectiveness of Intellectual Property at the State Enterprises**

In my opinion, measures to improve the institutional effectiveness of the Intellectual Property within state-owned enterprises in Georgia may have a selective character and can be attributed to the following: protecting the

results of intellectual activity, increasing patent activity and turnover; determining the functional criteria and requirements for development and implementation of programs for scientific-research, experimental-designing and technological works that address the state needs and their supporting with appropriate normative-legal acts and regulations, including conducting of patent-related research for scientific studies and test-design and technological works carried out with regard to the development of products and formulation of technical requirements; improving the mechanisms for achieving/ensuring the results of the intellectual activity carried out through the state budget financing or by attracting budget funds; Formation of a system for public services in the field of intellectual property, in order to create a comfortable environment for the intellectual property rights' holders; creating a system for transmitting / transferring the results of intellectual activities; the practice of application of trademarks, indication of place of origin and geographical locations for the products, to be introduced among the local state enterprises for the purpose of developing the distribution and export markets.

## **Conclusion**

In Georgia, state-owned enterprises were not successful. Among various other factors, this was due to the low rate of creation, introduction and protection of the intellectual property objects, the limited current portfolio of intangible assets and the lack of any intellectual property strategy.

Neglecting to take into account the role of intellectual property in the area of technology development may in the near future lead to the reduced investments in innovation, the losses occurred in the budget savings and the wasted opportunities for local businesses and the whole country in general to successfully access the prospective international export markets.

Economic and political instruments for protecting Georgia from economic sanctions should be provided with strategic assets in the relevant areas, the special place among which belong to rights on the intellectual property.

In the process of innovative management of the state enterprises, it is important to make effective decisions to increase the current portfolio of intangible assets, as well as to develop an intellectual property strategy.

Unsatisfactory level of performance of the state-owned enterprises is mainly defined by the inefficient management. This also applies to the management of intellectual property and other intangible assets. A standard document for managing the intellectual property should be developed so that state-owned enterprises become subject to the relevant regulations. Based on the goals and strategy of the particular enterprise with regard to intellectual

property related activities, the relevant objectives and evaluation indicators should be developed, also to include both financial and non-financial aspects.

When developing the unified coordination mechanism for the management of state-owned enterprises in the country, issues of the intellectual property management should be necessarily taken into consideration.

Among the tasks related to acceleration of technological development can be emphasized the following: establishment of new high-tech enterprises in the public sector (startups); increase of the level of commercialization in the areas of scientific research and technology; increase the patent-related activity of applicants employed in the state-owned enterprises; increasing the degree of the financial assistance for innovative activities provided to state-owned enterprises through means of the venture capital financing market; expansion of the scale of participation of Georgian state enterprises in the activities connected with the international transfer of patented technologies.

Among the measures aimed to improve the institutional effectiveness of the Intellectual Property among the state enterprises in Georgia should be listed the following: increase of the patenting activity and its turnover; improving the mechanisms for ensuring the results of the intellectual activity in circulation; Creating a system for transmitting / transferring the results of intellectual activities; ensuring introduction and application of trademarks, trade names and geographical indications among the local state enterprises for the purpose of development of distribution and export markets, etc.

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## **Career Prospects of Assistant Pharmacist Graduates of Plovdiv Medical University Bulgaria – In The Past and Present**

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### **Abstract**

Future career prospects are important for every young person. In the present conditions of market competition and continuous growth of unemployment, the new legislative requirements in health care under EU Regulations, affect the decision of young people related to their choice of professional field. Requirements set by the labour market imply quick adaptation and orientation, and flexible implementation of the knowledge and skills acquired in education. High quality education of health professionals is a major factor in the development and effective functioning of the healthcare system, and the achievement of a high standard of healthcare. This study examines the career prospects of assistant pharmacists, graduates of the Medical College, Medical University of Plovdiv. A questionnaire survey was carried out among a random selection of 2011, 2012 and 2019 graduates from the Medical College, Medical University of Plovdiv, Bulgaria. A total of 70 graduates were covered by the study. The results show, in addition to career success on the labour market, the level of satisfaction with training, as well as the desire of graduates to improve their professional competence. A large percentage of assistant pharmacists have success on the labour market. The graduates of the Medical College, Medical University of Plovdiv have a professional development that is timely and adequate to their qualification. There is an objective need for competent teaching staff, update of the teaching resources as well as conducting postgraduate courses in line with the European standards.

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**Keywords:** Assistant Pharmacist, career prospects, education, Healthcare.

## **Introduction**

Nowadays, in Bulgaria, the quality education of medical professionals is a major factor in the development and effective functioning of the healthcare system, and the achievement of a high standard of healthcare. At the heart of every healthcare system are human resources. They are the key for achieving healthcare goals, both national and global. The attention on human resources in healthcare is also focused on the education of future healthcare professionals, as the quality of health care tomorrow is highly dependent on the professional and moral ethics of students today (Kasnakova P. 2018). The career development of professionals who have achieved the relevant educational and qualification degree is the most objective market evaluation of the quality of education provided by an educational institution (Gladilov S. and Delcheva E. 2009). The Medical College is a part of the Medical University of Plovdiv, which is an autonomous, self-governing state medical university, an independent legal entity, established on the grounds of the state legislation (art.9, para 2, i.1; art.17, para 3 of the Higher Education Act).

The Assistant Pharmacist Programme at the Medical College of Medical University of Plovdiv was established in 1961. In the course of time, it has changed, developed and improved in order to respond to the needs of present times, and the new market and economic situation. The interest demonstrated by young people is considerable, due to the excellent career prospects. Assistant Pharmacist students acquire training in the Healthcare Professional Field in accordance with the requirements of the law. In their college studies, they learn fundamental, specialized and applied disciplines in order to apply the acquired skills in healthcare that correspond to human needs of health services.

The qualification description states that Assistant Pharmacist is a healthcare professional who is involved in the drug manufacturing and drug-distribution processes in our country. He or she should have high qualification, good general knowledge, love their humane profession, strive to learn the latest in the field of pharmacy, promote the development of medical care, and promote health in our country. The Assistant Pharmacist prepares and provides dosage forms, medicinal products, cosmetics, nutritional supplements, medical and sanitary supplies, etc., within his or her competence, under the supervision of a Master Pharmacist, or independently. They assume personal, moral, material, and legal responsibility (<https://mu-plovdiv.bg/>).

## **Main Text**

The purpose of this study is to investigate the career prospects of Assistant Pharmacist students at the Medical College, Medical University of

Plovdiv after completing their education. The study aims also to present and analyse the level of satisfaction with training, as well as the interest of graduates to enhance their professional competences.

**Materials and methods:** A questionnaire survey was carried out on random selection of 2011, 2012 and 2019 graduates from the Medical College, Medical University of Plovdiv, Bulgaria. The study covered a total of 70 graduates.

**Results and discussion:** The analysis of the survey results is expressed as a percentage of each answer relative to the total number of respondents. November 2011, 31 respondents of which 27 women and 4 men. November 2012, 19 respondents, of which 16 women and 3 men. November 2019, 20 respondents, of which 18 women and 2 men.

To the question: **"Are you currently employed?"**

The respondents answered as follows: for 2011, out of 31 respondents 26 answered "Yes" and 5 "No", i.e. 84%; 2012 - 19 answered "Yes", which is 100%. The results of the 2019 survey are similar to those of 2012 - out of 20 respondents 18 saying "Yes" and 2 answering that "they are starting work within 1 month". (Figure 1)

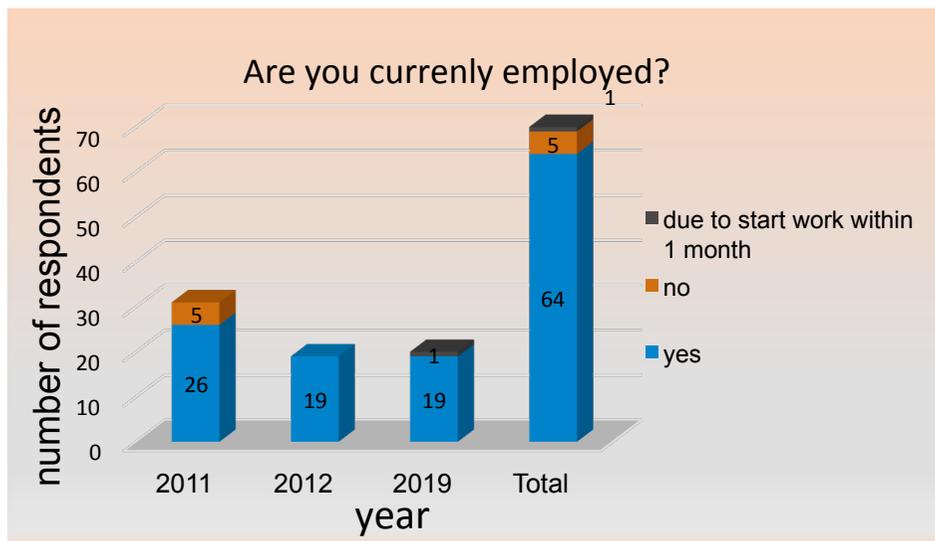
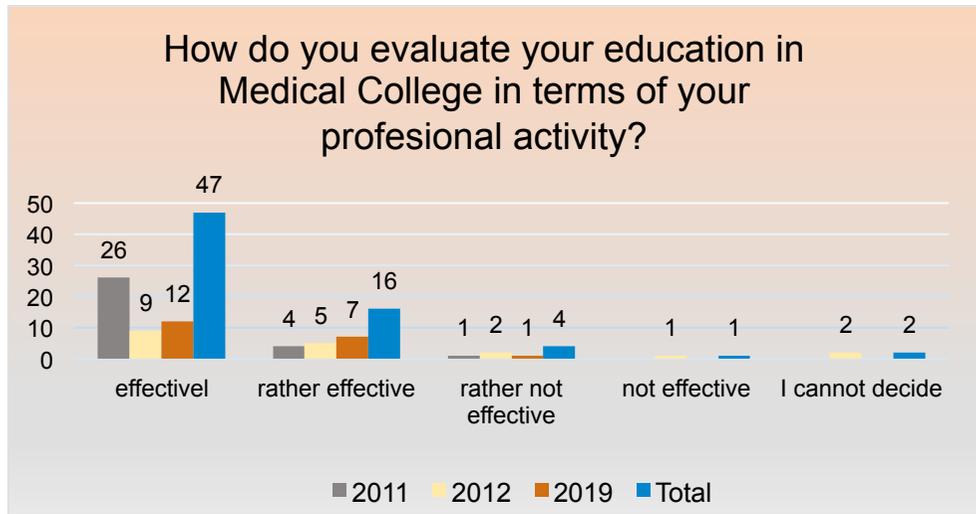


Figure 1. Career development of Assistant Pharmacists by years

In the current difficult economic situation in the country, it is a fact that the students find professional employment quickly. This can be attributed to the highly-qualified academic staff, the well-developed Educational Programme coordinated with the Uniform State Requirements (Ordinance on Uniform State Requirements, prom. S.G. 87 of 7.10.2008), updated Curricula that comply with the European requirements, and

available access to the necessary learning resources: continuously updated facilities and library fund. In support of this are the questions of the structured questionnaire, which present the students' opinion on the quality



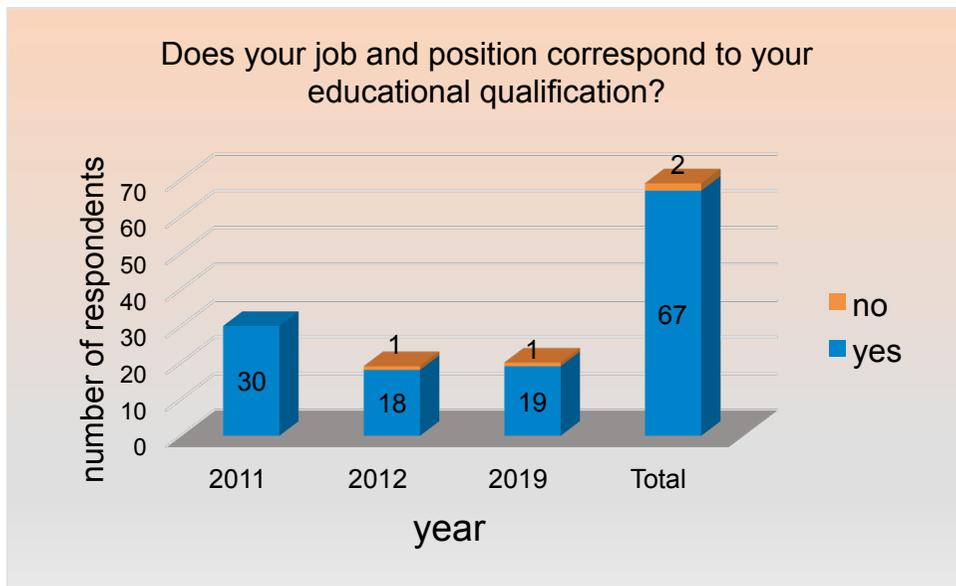
of the teaching process at the Medical College of Plovdiv, shown on Figure 2.

*Figure 2. Satisfaction of Assistant Pharmacist graduates with the quality of training at the Medical College of Plovdiv*

A high relative share of the graduates evaluate positively their education at the Medical College of Plovdiv, which shows that their expectations have been fulfilled, and also serve as a proof for the competence of the academic and non-academic staff of lecturers. High quality education is a responsibility of all participants - lecturers, students, management bodies, as the ultimate goal is to improve the quality of healthcare (Kilova, Bakova and Kitova, 2017).

In the course of their education, Assistant Pharmacist students acquire knowledge in general education, general medicine, and specialized subjects that comply with the Uniform State Requirements. The practical classes in the specialized subjects such as Pharmacology, Pharmaceutical Technology, Biopharmacy, Pharmacognosy, Regulation of Pharmaceuticals, Practical training, which form an integral part of the education of the students, allow students to apply in practice the acquired knowledge and skills. The pre-graduation Internship helps students to build communicative skills and ability to work in a team. The disciplines studied, the acquired knowledge and skills, as well as the communicative skills formed during the pre-graduation internship are adequate to the job positions occupied by the graduates. Communication is increasingly highlighted for its importance and

significance for the career development of the healthcare professional, and for implementing his or her value system (Toriyova B. and Kasnakova P. 2015). In their daily job, Assistant Pharmacists have many and different



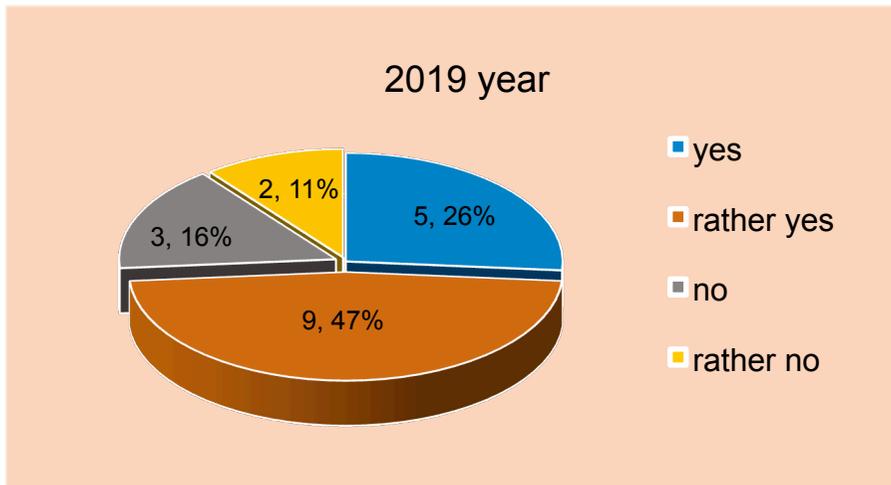
interpersonal contacts and healthcare cases, which put their communication and professional skills to the test. (Figure 3)

*Figure 3. Answers to the question: "Does your job and position correspond to your educational qualification?"*

The Assistant Pharmacist participates actively in the production of the medicines, as well as in their supply, and distribution. The Assistant Pharmacist may perform all activities under the supervision of the Master Pharmacist, with the exception of: providing prescription drugs, control and consultations related to prescribed medicinal products (art. 220, para 3 of the Law on Medicinal Products in Human Medicine).

The high qualification standard acquired by Assistant Pharmacist students and the characteristics of the education are an indicator for their career prospects.

The November 2019 survey included an additional question about the needs of new graduates to enhance their professional competence and qualifications. (Figure 4)



*Figure 4. Respondents' answers regarding their interest to upgrade their professional qualification*

The study shows that graduates are motivated and willing to succeed in their professional development (Figure 3), which is an indicator of the need to train Assistant Pharmacists. The quality of healthcare strongly depends on the professional, moral and ethical training of students in medical programmes today. Therefore, it is necessary for the academic teaching staff at medical universities to pay special attention to the quality of medical training to prepare future medical specialists for the challenges and requirements of modern times. The search for new approaches to teaching and learning will lead to a new model of education that responds appropriately to the contemporary dynamic reality (Kilova, Mateva, Bakova and Kitova 2017).

## **Conclusion**

A large percentage of Assistant Pharmacists are successful on the job market. The graduates of the Medical College, Medical University of Plovdiv have found employment that is timely and adequate to their qualification. There is an objective need for competent teaching staff, update of the teaching resources, as well as conducting postgraduate courses in line with the European standards.

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# Gender Representations in Moroccan Print Advertising

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## Abstract

Print advertising is a representative means of communication. Not only does it reflect a given culture but it also impacts the consumer attitudes. One of the main attitudes is gender roles, as the individual, hence the society, constantly seek if the representations and the expectations match. This paper explores gender representations in ten Moroccan magazines. Two of these magazines are men's, two are women's while the others are magazines of general interest. The paper also analyses how classical gender roles are still maintained or denied due to the increasing participation of women in the labour market. The findings reveal that there are overly stereotypical gender representations in print advertising. They also suggest that men's and women's magazines are not less gender stereotypic than general interest magazines.

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**Keywords:** Gender roles, gender representation, print advertising, stereotypes.

## Introduction

In the last few decades, researchers have focused mainly on women's representations in magazines' advertisements. Most research papers in this field have cast light on the stereotypes adopted to portray men and women, the cultural motives behind using such stereotypes, and the actual repercussions of such representations on society. (Hawkins and Coney 1976; Lundstrom and Sciglimpaglia 1977; McArthur and Resko 1975).

A typical traditional society would not expect similar behaviours and attitudes from men and women. Girls are, thus, brought up as future mothers and wives, while boys as leaders. Hence, gender is a social construct and behaviour is guided by traditions and culture. Males and females' roles are identified by a set of essential such as social behaviour, expression of emotions, and body language (Carroll, 1996: 163). Men and women are, subsequently, different and these differences determine their social functions.

While trying to understand the representations of men and women in Moroccan magazine advertisements, I have carefully considered visual and verbal messages of promoted pictures from various Moroccan magazines, which particularly focused on men and women, and general magazines. These advertisements are gathered from four magazines which dwell on women and they are Ousra and Lalla Fatima (issued in Arabic), Femme actuelle and Femme de Prestige (issued in French), two magazines which deal with men, namely: Version Homme and Homme de Prestige (issued in French). Added to that are six general magazines, namely: Nichane, Telquel, Le Temps, Essor, Maroc Magazine and Managers Magazine. Aside from Nichane, all these general intrigue magazines are distributed in French. The chosen issues were issued in May, 2009 while Managers Magazine were released in April 2009.

### **Men and women representations in magazines**

It is noted that women are portrayed with various negative stereotypes in women's magazines (Skallé, 2006). To start with, there is a connection between women and classical roles of the advertised products. They are depicted as mothers, brides or domestic women. In certain contents, women are depicted as being dumb. Some products are applied and used on women's bodies as part of the advertisement content e.g., body care products, fashion wears, mobile devices and house products. Brand consuming and careless driving are two negative stereotypes attributed to women.

In contrast, men are represented positively in advertising (Mulvey, 1999). For most advertisement, men are portrayed to be brilliant and professionals in adapting to any environmental conditions and also in finding solutions to problems. Men are also seen in classical roles such as fathers. They take it upon themselves to teach their sons various ways to be successful and depend less on people. In advertisements that tackle fashion, their bodies are used for decorations.

Men are portrayed as heroes, for instance in branded wristwatch adverts. In adverts that have to do with cars, men are also portrayed as being very adventurous. For fashion adverts, men are usually generalized and presented as being tough and sexy, ready to take on adventures and generally put up mature appearances (Haddad, 1998). Women on the other hand are linked to design roles or with romantic relationships and adverts of consumer products. Adverts that have to do with men and women presents men as being higher than women or as just equivalent to each other. By and by, advertisements which advance sex uniformity are not many in contrast with the ones promoting male's strength over females.

As for general purpose magazines, women again are presented in a negative light, where they are involved in decorative roles, while men, in a totally different way, are linked with accomplishments (Koehemoer, 2004). For advertisements where men and women are used together, they are either depicted as equivalent or the inverse. The point of concern is on gender disparity. With respect to female and male portrayal together throughout Moroccan magazines, a large number of advertisements focus on gender inequality while very few ones promote equality between men and women. The most surprising finding is that all the advertisements which depict women together with men in women's magazines maintain women's inferiority, dependence, and submissiveness.

In most cases, when considering women alone in women, men or general purpose magazines, they are either connected with conventional or beautifying roles, or presented as having childish tendencies or consumers who accept anything (Jhally, 1995). Men, in a different vain, are associated with the traits of accomplishment, knowledge, experience or valor. Very few men and women magazines portray men as being used for beautifying roles in adverts. As regards to how males and female are depicted all through Moroccan magazines, it is noticed that most advertisements are based on gender imbalance while few others in a way promote equality between men and women. A key finding showed that advertisements which focus on men and women obviously portrayed women as being inferior, reliant and submissive.

Concerning advertisements which showcase women in conventional roles, it is observed that women's importance to the well-being of the family is being mothers or wives (Ghissassi, 2006). Moroccans are amongst the peoples in the world that are referred to as being more connected to each other. For this reason, family relationship is held in high esteem in the magazines used for this analysis. Most Moroccan advertisements lay emphasis on the relationship that exists between mothers and children. As observed, mothers are mostly seen to be very busy with caring for their children's needs. While the relationship that exist between father's and children takes a different dimension as fathers do more in teaching their sons on ways they can end up becoming successful in life and have an autonomous life, they also engages more with fun filled experience with their children.

### **Domestic role**

With respect to the relationship between husband and wife, husbands are depicted as having this controlling mindset in the family, as they are referred in most cases as the leader of their families. They are most times the ones that drive cars, ride bikes and pet their wives. Wives in, another vain,

are depicted as being dependent and submissive to their husbands. They constantly rely on their husband's for support, they sit and discuss with their husbands on issues that relate to their family well-being, and women too in most cases appreciate their husband's pampering and playing with them. Families in the Moroccan societal setting are seen as being male centric (Chijoke, 2006). It is a key in keeping up female reliance and male strength. In the butter advertisement in figure 1 below, the verbal message overly displays the woman's devotion to satisfy her family members. Through this image the advertisement enhances the cultural and expected role of the mother.



Figure 1



Figure 2

In Moroccan advertisements, women's portrayal as wives that take care of their spouses or doing house chores is drastically decreasing. Just a

single advertisement portrays a wife fixing her husband's tie, which is a sign of her love and care for him. With respect to cleaning items, they are once in a while promoted in magazines. Just two advertisements are seen to boost such products in women's magazines. Besides, these items are publicized alone without the nearness of women. The abatement in this type of advertisements is because of technological inventions in the design and production of machines which are of extraordinary assistance to women. Hence, women have more opportunities to think and care about their spouses or kid's welfare, provide their needs, and do recreational exercises. The negative interpretation of these cleaning products, which are seen as diminishing and publicized distinctly in women's magazines, shows that men are not engaged in family cleaning activities. Considerations like these are stressed in the Moroccan culture since women's activities in the family are progressively constrained to the home and family.

Figure 3 below shows that thanks to technology the woman has enough time to work, take care of her children or exercise.

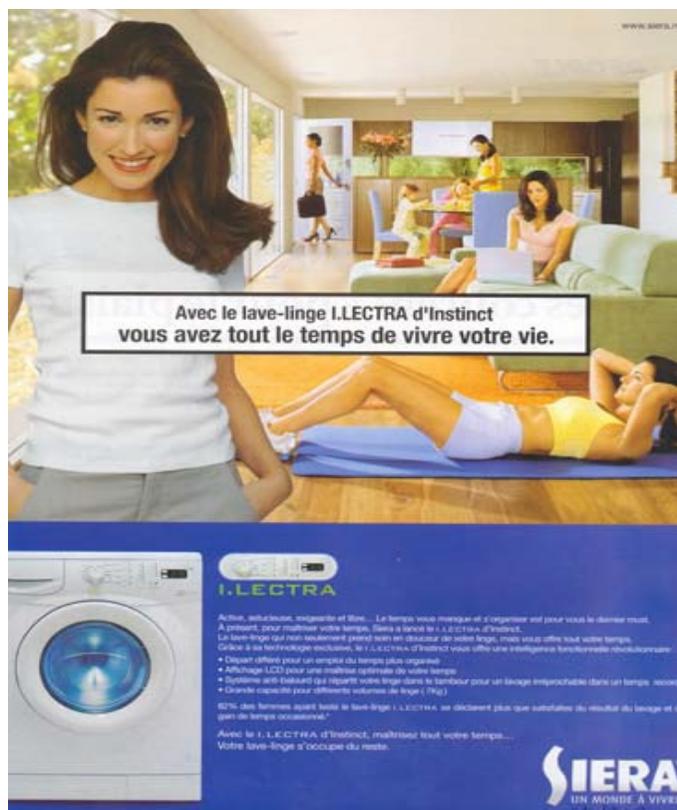


Figure 3

In Moroccan society, women are considered as being accountable for the family and in taking care of their spouses and children. Furniture advertisements make an association between these considerations and convictions and the items advertised. Furniture's are promoted in women's and general intrigue magazines with the presence of women alone. These women often make the most out of their furnishings and in communicating their euphoria, and are seen to be playful in some cases. Therefore, the fundamental role of women is seen to be predominant in the house, in as much as they can be housewives or they work. Men are not observed in being actively involved in these activities.

### **Women, beauty and body products**

For consumable products, women are represented as main consumers of various types of products. This generalization is predominant in all the three types of magazines in fashion and accessory advertisements. In magazines for women and men, consuming of products is associated with certain activities or qualities. For example, in advertisements found in women's magazines, consuming the products found in them can be considered as a way of taking part in certain social and environmental activities such as: fighting against cancer, providing access to literacy for children, and contributing to the green peace. Figure 4 below suggests that women can use this product to get rid of black heads to meet the expected image.



Figure 4

On the other hand, advertisements in men's magazines are most times likened to products that promote romance. If for instance a husband gifts his wife such a product, it shows that he loves her.

In most Moroccan magazines, men are usually linked with being intelligent, possess heroic characteristics and generally adventurous. It is observed that men's intelligence and professionalism enable them to be able to come to terms with their environment and solve problems, some of which are difficult for women to handle. Creativity exhibited by men helps in strengthening them as it is a contributory factor to their privileged status in society. All of these qualities make men the center of attention and respect in the society and in their individual families. In some advertisements, men are

portrayed as being fearless; they are willing to take risk which sometimes also involves risking their own life's to achieve set goals. Although in few instances, men are presented in fashion advertisements as useless. These advertisements are not common. In relating men to intelligence, heroic acts and well known bravery is well known to the general populace in Morocco. Attributes like this are drawn from the understanding that men are superior to women. The fact that advertisements promote generalization like these are common in Moroccan magazines, and it implies that this is because men are behind Moroccan advertising industry. Men maintain such representations in a bid to have a societal standing that keeps them at the top.

Male strength is common in the Moroccan society. Men have more significant levels of education and according to Michelle Moreli, the author of "A Case Study of Morocco: How Have Women Become Parts of Labor Market?", they are utilized in more elevated level, more lucrative positions, and they keep on being supported by the nation's laws. These components along with the confidence in the prevalence of men empower them to have an added advantage over women. Most of the commercials in Morocco that have to do with women and men focus on making men predominant and women are portrayed as obedient to the call of men. Stereotypes like these have being written earlier in this analysis. Women's obedience to men and their show of inadequacies are reflected in their grins, as they tend to spend time with men talking and seating or sitting passively by their sides. Also, men are driving and acting in an infantile way or being the object of the male look. This shows that men apply authority over women and that women are reliant and agreeable to men.

Few advertisements in Morocco depict gender parity. These commercials show men and women in the light of equals, especially through deep understanding, knowledge, independence and achievement. Some advertisements showcase parity between men and women in a way not easily understandable. A work-related advertisement in a radio broadcast showed that men are more than women. In another advertisement about a tea, they were seen enjoying the drink while they had an on-going conversation. Despite the fact that these two advertisement advance sexual orientation uniformity, they demonstrate that autonomy, accomplishment, and advanced understanding are confined to an extremely predetermined number of females, and that communication is more exhibited by women. These reluctant endeavors to make gender balance reflect in Moroccan magazines shows the opposing connection between the endeavors to improve women privileges and social customs that hinder certain women from having social freedom. The fact that most magazines in Morocco do not show the importance of sexual balance has gone a step further to make women acknowledge mediocrity and reliance.

With respect to the items promoted in women, men's and general interest' magazines, women's magazines vary in both the measure of advertisements offered and their categories. The greater part of the advertisements investigated are extricated from women's magazines. Moreover, a few advertisements that relate to beauty products and style are copiously publicized in these magazines. Furthermore, advertisements about fashion are more in men's magazines, particularly in Homme de Prestige. Furniture advertisements are seen in women and general intrigue magazines. In the last mentioned, furniture and banking commercials make use of women who are seen to put up acts in children-like manners. They delineate them as incapable to limit their sentiments. With respect to adverts that dwell on cars, phones and accommodation, they share the same sentiment all through the three magazines.

As expressed before now, women's magazines are loaded with beauty care advertisements, as women are increasingly portrayed in terms of their magnificence and endowment. It appears that women have this understanding that they are undesirable or clumsy except if they put forth attempts to keep up an alluring appearance.

Products that beautify the body are commonly promoted with mostly nude women. Despite the fact that Moroccan women are not permitted to dress indecently, this is not respected as seen in most beauty-enhancing adverts where women end up showing their uncovered shoulders or legs. A few advertisements center around explicit body parts like the lips, eyes, or legs. These advertisements which generalize ladies are inconsequential in number. However, concentrates on women's bodies and generalizing them is unsafe to women's public image.

### **Women and fashion**

In regards to fashion advertisements, women's bodies are portrayed as decorative objects that can be used to wear fashion accessories and cloths such as underwears. What is interesting is the fact that women's underwear are promoted in Moroccan magazines the same way they are being promoted in western magazines. It is a common fact that women in Muslim societies dress unobtrusively and that they are not permitted to show their body parts out in the open or at home within the sight of outsiders. What this kind of advertisements now means is that it's surprising to see women in Moroccan adverts wearing underwear. Nevertheless, men appreciate to see women naked, most especially if they are not from morocco and those who view this magazine have an affinity for western culture. They are considered to have accepted the influence of western culture.



Figure 5

In a bid to round up this analysis, commercial adverts that use women to promote beauty products or underwear do not in any way show what Moroccans represent in respect to the true tradition of Moroccans, as conventional Moroccan culture restricts the possible advertisement of an indecent society. The representation of women in such a manner can be annoying. Be that as it may, visual broadcast media like television advertisements are increasingly well-known for mirroring the truth about women lives and their actual roles in the eyes of the people. This would clarify the tremendous distinction that exists in Morocco as regards to education and the economy. These two components assume a key role in differentiating the interests of Moroccans, which can then result in the production of several commercials.

In Morocco, the use of veil has been an issue of debate and to the rest of the Muslim world. Muslim women are required to cover their body using veils, where ever they go to, as a sign of a strict conviction of their Islamic faith. Although another circle of thought proposes that ladies are not obliged to wear the scarf at all times to prove that they are religious. In any case, the prevailing conviction is that Moroccan Muslim ladies should dress humbly out in the open. Be that as it may, this standard is not applied in Moroccan magazines as women are not seen putting on their veils in commercials. Just two exceptional cases can be seen in abiding to the proper Islamic dress code and they are when women are seen in traditional dresses promoting new designs and when women are used for furniture adverts. The idea behind the use of scarf stands out like the use of veil. In addition, it is acceptable to write that the Moroccan government has not done enough in encouraging women to regularly wear veil. Also, the public perception of veiled women has led to employers not being comfortable to employ women who wear veil. It is worthy to note that the way most women wear veils in morocco as a representation of the people's culture and, in recent times, has opposed the thoughts and beliefs of the people.

In recent times, new advertisements have been added to Moroccan magazines. These adverts cut across wellness clubs, spas, weight reduction items, and voyage. The last don't portray women as going for business trips, but rather as a means for relaxation. Few adverts are used to promote the consumption of alcohol in as much as it is prohibited for Muslims. These advertisements, notwithstanding, are targeted to a known class of Moroccan populace. Secondly, some of the advertisements in these magazines especially in women's magazines do not reflect the reality of the Moroccan women either in habits or the dress code. The last point is that a large number of the Moroccan people cannot afford to buy the products advertised in these magazines. This means that these advertisements do not even reflect the economic capacities of Moroccan people. To summarize, Moroccan women, men and general intrigue magazines vary concerning their target audience, they relate with one another based on points they share together. Notably, the format used for life style is seen as almost the same in advertisements appearing in all these magazines. In most cases, they combine images in products and formats the writer prefers, which is also the best way of accomplishing individual goals, desires, and wants. Furthermore, it has been observed that some advertisements even in women magazines don't tend to portray the reality of an ideal Moroccan woman dressing. Also, countless Moroccans cannot afford to pay for advertised products in magazines because they are expensive. This implies that advertisements do not mirror the financial strength of a larger number of Moroccans.

## Conclusion

Women are represented either as confined to traditional roles or as decorative bodies for the products. Men, on the other hand, are portrayed most of the time as intelligent and successful. The portrayals of men and women together reflect men's superiority and women's inferiority.

To summarize, this analysis has demonstrated that issues bothering around gender and product advertisements are extremely perplexing and are twisted together. They impact each other as they relate to other cultural and social components in the society. The manner in which females and males are delineated is more often than not comparable all through the Moroccan magazines. Women are represented either as being limited to customary roles or as possessing bodies that can be used to test and subsequently use beautifying products. Men, in an opposite way, are depicted more often than not as brilliant and achievers. The depictions of both men and women reflect men's supremacy and women's inadequacy.

Ladies are delineated as bound to customary roles or as people that can be used to satisfy sexual desires. A few commercial adverts are few in number especially when comparing them with other adverts that relate to beauty and body products. Women's bodies are used to promote beauty products. Sometimes, women are portrayed as being childish and unfit to control their sentiments. Such delineations are meant to portray women in a negative perspective and which can decrease their status in the public arena.

In a different vein, men are portrayed as representing insightful, successful and audacious members of the society. Their psychological build along with physical strength makes them unbeatable. They can deal with their condition and take care of the most issues. Even as they take up roles of fathers, men are depicted to give over their experience to their children.

In most cases, men and women are often used in advertisements and for instances where this is the case, gender imbalance is obviously indicated. Most times, men are portrayed as over possessive, in as much as they still stand as the source of security and care to women. Although women are still seen as being dominating, submissive and childish, there is still that need for men to ensure they are protected and guided.

Usually, gender balance is seen to be more pronounced in some advertisements, especially the ones that appear in men and general intrigue magazines, while it's not same for women inspired magazines. In as much as advertisements are not limited, the number of women who are achievers and also independent is less than that of men. In a way, these suggest that although changes have been made in improving the life of women in the society, men are still favored more than women.

Worrisome is the fact that newly introduced advertisements in Moroccan magazines portray women in the light of sexual objects. The way

their body looks and their beauty seem to be the focus of most adverts, and it is the only feature they possess that makes them happy. It is obvious to also note that some of these adverts portray women in the light of sexual commodities with high market values. For men, they are regarded as being unable to think beyond their physical appearances. This sought of representation is limiting and can be seen in men's magazines such as *Homme de Prestige* and in new commercials which are about travels, fitness clubs and liquor. These commercials do not portray what a Moroccan society is all about. It's observed that few Moroccans live like westerners.

It reflects the Moroccan women's reality in relation to the male's authority and their concern for their husbands and children's welfare. Nevertheless, it introduces new cultural values imported from the western culture. It is noticed that there is a drive towards representing women as sex objects by depicting young, thin and attractive female models in almost all advertisements. Men too are represented in some fashion advertisements as stupid; yet, such representations are infrequent. These illustrations affirm that the Moroccan society is a contradictory or double-faced society where traditional roles and western values, freedom and obedience go hand in hand.

The media has been used to assume a significant role in keeping up and encouraging sex stereotypes. It mirrors a few stereotypes just as it changes others as the case with the conventional and beautifying roles of women. It mirrors Moroccan women's existence as it corresponds to man power and their anxiety to properly care for their spouse and kids. Although it presents new social qualities imported from the western culture, it is noticeable that there is the desire to refer to women as sex objects by portraying young, slender and alluring female models in practically all advertisements. Men also are regarded as dumb although such portrayals are rare. It can be concluded that the Moroccan society is two-faced with the ability to accommodate both traditional Muslim beliefs and western values, freedom and obedient to laws and order.

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# **Motherhood Versus Metropolis: Maternity Practices in Native Cultures of the Chronicles of Peru**

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## **Abstract**

Motherhood and colonization, why should we put these two notions together, and what do we know about the changes in childbearing patterns during the colonization of the America's as a signal of a broader cultural change? Even when all human life on this planet is born from a woman, we know more about the air we breathe, and the seas we travel, than about the nature and meaning of motherhood as Adrienne Rich famously said (1976: 11). The production of life remains a marginal issue in the study of modernity and its consequences. The colonization of America marked a significant shift in how Western minds understood themselves and was pivotal in the overall concept of motherhood and by combining both these cultural phenomena we can illuminate many aspects of society, then and now.

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**Keywords:** Motherhood, colonization, Peru, chronicles, Latinamerica, native cultures.

## **Introduction**

When we look back at motherhood in the Early Modern Colonial Chronicles, different concepts of gender, body, community, work, and caring for one another emerge. This exercise is part of the ecofeminist theory, and also serves to understand the beginning of the current ecological, political, borders, and social crises. For example, we're now, facing what feminist theory called 'care crises,' (Robinson: 2011) e.g., common people did not get enough resources to help during the coronavirus pandemic. Nowadays, we see doctors and nurses in every country working in some precarious conditions. I'm going to point out when the devaluation of the caretaker as a figure whose work is undervalued and invisible began. My central thesis here is that colonization shifted the indigenous maternal pattern from an empowered member of society into a submissive, passive one. Therefore, we've traveled through colonization's first testimonies, stopping in the Andean region for its importance as the main source of gold for the

Spanish Crown (Gruzinski: 2002). Among many testimonies that narrate changes between the native and Western way of life, two of them are especially significant for their quality: those written by Inca Garcilaso de la Vega (12 April 1539 – 23 April 1616) and Felipe Guamán Poma de Ayala (ca. 1535– after 1616). Both are considered to be the most popular authors of their time, and their chronicles are complex texts that narrate the end of a world and its entire complex society. I want to share with you here few pieces of their writings, and drawings.

First, Inca Garcilaso de la Vega, an American prince, published his *Comentarios “Reales de los Incas”* in Lisbon, in 1609. He is well-known as the first “mestizo” writer; however, his work has been cataloged as Eurocentric. His last name, Garcilaso de la Vega, is that of a significant literary Spanish family. His mother was an Incan princess, so he lived a life of recognition in both cultures. *Comentarios* gives us an extraordinary corpus of information about childbearing patterns, which is not common in any other Spanish literature.

If Inca Garcilaso is associated with the European point of view over America, on the contrary, we find Felipe Guamán Poma de Ayala, who devoted his life to fighting against the Spaniards and injustice. His chronicle, “*Nueva coronica y buen gobierno*”, is considered to be a significant contribution to our understanding of Peruvian history, and the pre-Columbian past which he describes in detail, and the colonial society which he harshly analyzes. “The First New Chronicle and Good Government”, by Felipe Guamán Poma de Ayala, his handmade manuscript was found in Denmark in 1909, but it was finished in 1605 (Pease: 1980, IX). The obsession of Guamán Poma's Chronicle is the decline of the population caused by viruses, forced work, the exploitation of nature, and the persecution of the native way of life. Therefore, the maternal body is one of his main concerns. To him, the profanation of the native female role denied the legitimacy of the Spanish Empire over the Andean territory. In addition to his writing, his manuscript is full of his own drawings and paintings. Which has been considered the most crucial visual testimony of the conquest (Silverblatt, 1987: XXIV).

Now, let's take a look at how each author portrays indigenous mothers. Starting with Garcilaso, it is surprising that even though he dedicates many pages to their maternal practices, he always argued against them marking them as simply savages. His writings are full of "matriphobia" (hate towards mother figures). For example: “Los hijos criavan estrañamente, assí los Incas como la gente común, ricos y pobres, sin distinción alguna, con el menor regalo que les podían dar” (Book IV, chapter XII). In his work, scenes of the "unnatural mother" are repeated to justify the need for the imposition of Spanish culture over those unfit mothers.

However, he was still able to realize the autonomy and self-empowerment of these women (Ruth: 1991). In the next paragraph, he described how women diagnose and heal their children of different diseases with their "secretos naturales"/natural secrets. They also gave birth and took control of their pregnancy, and managed their own lactation. These mothers had enough access to medicine for diagnosing and curing infants of any disease. They did it through techniques that sound as novel today as the preservation of the umbilical cord and other "secrets", as the author called them:

Cuando al nacer de los niños les cortavan el ombligo, dexavan la tripilla larga como un dedo, la cual, después que se le caía, guardavan con grandissimo cuidado y se la davan a chupar al niño en cualquiera indisposición que le sentían. Y para certificarse de la indisposición, le miraban la pala de la lengua, y, si la veían desblanquecida, dezían que estava enfermo y entonces le davan la tripilla para que la chupasse (...) Los secretos naturales destas cosas ni me las dixerón ni yo las pregunté, más de que las ví hazer. (Book 1, Chapter XXIV).

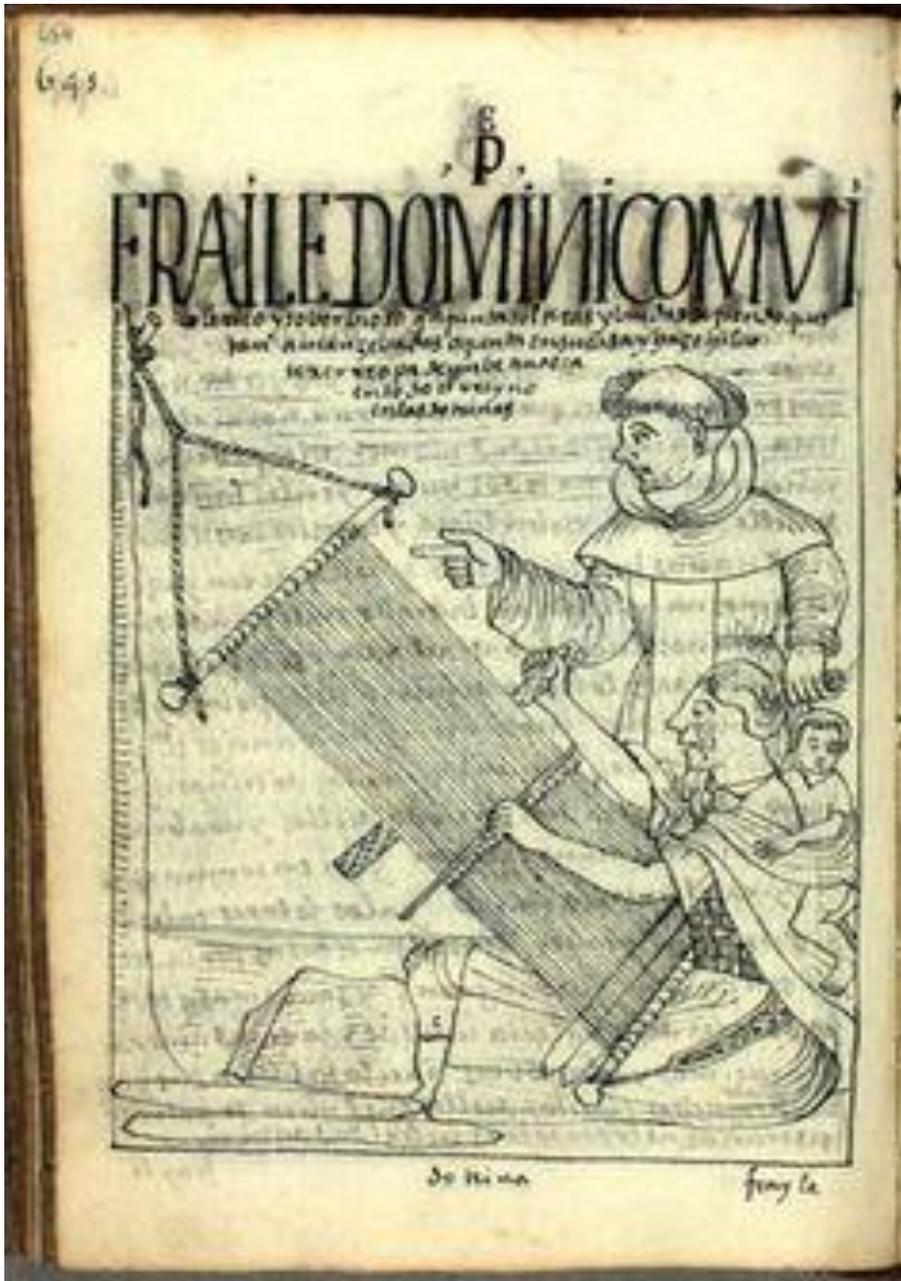
Garcilaso also described how midwives (called "oclo") were considered sacred. Mothers could live an independent life from their husbands for the first two or two and a half years after giving birth, avoiding a new pregnancy. Women of *Comentarios reales* had access to medical knowledge and practiced herbology, soothing techniques, and lactation expertise. They ultimately challenged Early Modern concepts of technology, reason, and truth.

Una Palla de la sangre real conocí que por necesidad dió a criar una hija suya. La ama devió de hazer traición o se empreñó, que la niña se encanijó y se puso como ética, que no tenía sino los huessos y el pellejo. La madre, viendo a su hija ayusca (al cabo de ocho meses que se había enxugado la leche), la bolvió a llamar a los pechos con cercenadas y emplastos de yervas que se puso a las espaldas, y bolvió a criar su hija y la convalesció y libró de muerte. No quiso dársela a otra ama, porque dixo que la leche de la madre era la que le aprovechaba. (Book IV, chapter XII).

Contrary to the empowered mother of the Inca, Felipe Guamán Poma gave us a portrait of the woman's body as the central resource of exploitation from the Americas. In his view, it was not the gold that the Spaniards were exploiting but the women's bodies. *Coronica* placed in the Andes after the Spanish crown took control over the territory. Spaniards sexually abused and enslaved women into domestic tasks such as cooking, preparing fabrics, kneading, and distilling. The indigenous world ended native rights, native traditional women's roles, and its cosmovision of gender parallelism.

In the following drawing, Guamán Poma portrays an Andean woman carrying her son on her back while working on textiles for a friar. This man is attacking her by pulling her hair. The friar is, presumably, the child's

biological father since Guamán Poma dedicated many pages to denounce rapes committed by clerks. The image illustrates the colonial civilizations' transformation from their maternal practices to one forceful incarnation. If we look a little more carefully, we see that the infant's expression doesn't relate to or doesn't seem to fit with what is happening in the rest of the scene. The child, the dependent being, has been set aside in pursuit of the physical exploitation of his mother's body and the making of textile goods as an exchange value. This child is the "mestizo", son of a native woman, and a white Spaniard. The baby is growing up separated from his ancestors tradition. Before the conquest, kids were taken care of by their free mothers with the help of the community, at least up until two or two years and a half. She, the mother, like the majority of native women, is now living in the new Spanish metropolis. The author characterized her as a victim of labor and sexual exploitation: crying, working, and raising a child.



*Corónica. Padres/ 646 [646]*

Domestic work in the colonial Andes was at that time mostly carried out by the indigenous women who were forced to migrate by the masses to the cities to be part of the new domestic trade. Meanwhile, the men, who did not go to the mines remained in rural areas, dividing the native community into two geographically and separate halves. "Indian men and women lived

in two separate worlds that, while interconnected with each other in many areas, were nevertheless remarkably isolated. Social networks were overwhelmingly forged along sex lines". (Burkett, 1978:120). That is Guaman Poma's central pain: it was impossible for traditional native communities to survive in terms of human reproduction since young women and men were separated during infancy.

In these chronicles, we have many other examples of how colonization transformed seemingly well-balanced maternal practices into domestic service. Here, I've just offered a few of them, but both chronicles are full of many more examples. Surprisingly, scholars have rarely noticed the main role mothers occupied in these author's testimonies. Luckily we have Professor Irene Silverblatt's work, a monograph about native Andean communities, Incas before colonization. In *Moon, Sun, Witches* (1987) Silverblatt describes a society ruled by what she called "gender parallelism," which was opposed to the European gender binarism. In brief, Silverblatt's investigations talked about a gender division, but not about binary thinking. "Ayllu" is the native name for the community. In the land of the different "ayllus", work was organized and divided based on age and gender. Andean norms defined certain tasks as appropriate for men and others for women. Nevertheless, the division of labor was never so strict as to prohibit one sex from doing the other's task, if the need ever arose. Andean gender ideologies recognized that women's work and men's work complemented each other. Their interplay was essential for Andean life to continue (1987:9). However, Western binarism, implies the predominance of one sex over the other, as it happens in other pairs like nature/culture or body/mind. If we take a look at non-western societies, like the Andean one, we do not find binarism thinking in a Western way. Inca Garcilaso's mothers perform the reproductive work necessary for the sustainability of life while also producing and reproducing medical and scientific knowledge. They were entitled to exercise care independently. The knowledge that came from mothers was not considered superstitious in the pre-colonial Andean world.

Whereas, colonization authorities founded Modern institutions like Universities and 'Protomedicato' (medical school); however, women were not allowed to access them for reasons of gender, race, and economic status. Colonial society did not consider mothers as a relevant social component and saw motherhood as an act of empty social value. Moreover, indigenous women had no access to knowledge and no access to the land for material resources under colonization. Guamán Poma told us about women inheriting land from other women without the interference of their fathers, husband, brother or landlord: *Teniendo de derecho de sangre y linaje y ley, no se le puede quitar por Dios y de su justicia, aunque sea mujer como tenga derecho. Bven gobierno, 454 [456].*

Spaniards misunderstood the occupation of women over their own resources, roles and obligations as a proof of submission to their husband. They were unable to perceive that these women's work involved caring for and transmitting their own heritage. "Women's work in the ayllu -from weaving, cooking, and sowing to child care-was never considered a private service for husbands" (Silverblatt,1987:9). This mentality denotes that the androcentric sphere of work was already completely perpetuated by the conquerors.

In Garcilaso's chronicle, we read about sacred caretakers, venerated women whose recognition was not to be with their husband, but to their commitment to the health and well-being of their people. These women's social significance was built upon their work, not over their role as men's wives. Quite a world away from the European model of the good wife, the submissive role is here substituted by the empowerment of its functions as caretakers and their attachment to a more extended community of care, ruled by themselves. They shaped a self-supportive community of cooperation and autonomy.

(...) no dexavan de salir a visitar las parientas más cercanas en sus enfermedades y partos, y cuando tresquilavan y ponían el nombre a sus primogénitos. Estas eran tenidas en grandíssima veneración por su castidad y limpieza, y por excelencia y deidad las llamavan Ocllo (...) Yo alcancé a conocer una déstas (...) Teníanla en la veneración que hemos dicho, porque dondequiera le davan el primer lugar, y soy testigo que mi madre lo hazía assí con ella, tanto por ser tía como por su edad y honestidad. (Book VII. Chapter. VII).

Meanwhile, Colonial authorities settled the first Protomedicato in Lima, 1570; many "women's manuals" were published in the Metropoli Spain: such as Juan Luis Vives' *De Institutione foeminae christianae* (1524) and *De officio mariti* (1528) or Fray Luis de León's *La perfecta casada* (1584). Concerning a Christian woman as a wife, mother, and recipient of the lineage's honor, multiple treatises described how the mother should act, feel, conceive her body, and how to physically care for her child. The new legislation imposed by the Council of Trent (1545-1563) helped to limit women's access to knowledge, their movement, and agency (Ortega López, 1977: 250-268). Many ideas around fertility and maternity are products of these times and still exist in today's societies. Meanwhile, in the Andes, the notion of the community remained after colonization as long as it could.

## Conclusion

Thanks to these two author's Chronicles, native Andean mothers are described as empowered, self-managed, respected, and valued members of their community, mothers who could make decisions about how to raise their children and what was in their best interest. Apart from that, they also narrated how those mothers were transformed into poor and marginalized domestic workers by Spaniards.

The modern project institutes the idea of "nature" as a hierarchy that allows white men to dominate the world, using the world's resources, non-whites, women, and animals. That is the true colonization. Colonization is not just about the imposition of some territories over others. It is the imposition of some bodies over others. Colonial and modern societies started to see motherhood as passive, irrelevant, invisible, and undervalued work. Mothers, as the primary source of care, were the first ones to educate the young under these white patriarchal patterns.

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# **Investigating Household Factors and Child Physiognomies as Predisposing Dynamics to Optimal Breastfeeding among Fertile Mothers in West Africa: A Multilevel Study**

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## **Abstract**

### **Background**

In many West African countries, the vulnerability of infants and under-five children to life threatening infections, poor physiological development, cognitive impairments and mortality, due to their weak immune system has been extensively related to the non-adherence of mothers to optimal breastfeeding. Earlier studies had inspected and explored the conceivable predictors of the non-conformity of mothers in the region to the recommended breastfeeding practices by UNICEF/WHO. However, these empirical studies had neither investigated the joint effect of household factors and child physiognomies nor adopted the multilevel method across countries in West Africa. The study addresses this limitation by investigating the identified explanatory variables as predisposing dynamics to optimal breastfeeding among fertile mothers in three selected West African countries

### **Method**

This study was a cross-sectional multilevel survey. It analysed secondary quantitative data extracted from the Demographic Health Surveys conducted in Guinea (2012 GDHS), Nigeria (2013 NDHS) and Sierra Leone (2013 SLDHS). Information was sourced from a weighted sample size of 12,180 (NDHS), 5,008 (SLDHS), and 3,082 (GDHS) for fertile mothers aged 20-49 years old, who have had at least a birth prior the surveys. The response variable was optimal breastfeeding practice. It was captured by adherence and non-adherence to it thus, it was dichotomised into “1” if adhered to by fertile mothers and “0” if otherwise. The explanatory variables were household factors and child physiognomies and were measured at individual and community levels.

The fixed and random effect logistic regression was carried out using Stata 14.

### **Results**

Results showed that < 10% of fertile mothers practiced optimal breastfeeding in Guinea (5.3%), and Nigeria (8.6%), while only 14% of fertile mothers in Sierra Leone adhered to the practice. The fixed effect results showed that household factors, child physiognomies, and maternal factors at community level were significantly associated with optimal breastfeeding ( $p < 0.05$ ). The random effect results showed that household factors at community level accounted for 29.0%, 23.6% and 23.3% variation in adherence to optimal breastfeeding in Guinea, Nigeria, and Sierra Leone respectively. Results showed that child characteristics, at community level contributed 36.3%, 20.6% and 18.7% variation in adherence to optimal breastfeeding by fertile mothers in Guinea, Nigeria, and Sierra Leone respectively. Results, further showed that household factors and child physiognomies, at the community level jointly accounted for 20.4%, 21.5%, and 19.85 variation in adherence to optimal breastfeeding by fertile mothers in Guinea, Nigeria, and Sierra Leone respectively.

### **Conclusion**

The study concluded that adherence of fertile mothers to optimal breastfeeding is fundamental to reducing the vulnerability of infants and young children to life threatening infections, poor physiological and cognitive impairments, and early childhood death to the lowest in Guinea, Nigeria, Sierra Leone, and the sub-region of West Africa as a whole.

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**Keywords:** Optimal breastfeeding, predisposing dynamics, physiognomies, fertile mother.

### **Introduction**

The definition of breastfeeding is relative. It is defined based on its categorization and the person defining it. Breastfeeding is the process or act of feeding the child with breast milk directly from the mother's breast or wet nurse or expressed with breastmilk, solid or semi-solid foods and also requires the feeding of an infant with non-human milk (UNICEF, 2016). Adequate and appropriate breastfeeding protects infants and young growing children against allergies and it as well boosts intimacy between mother and her infant. Breastfeeding contains healthier nutrients compared to formulas and promotes infant's immunity, growth and development. Breastfeeding promotes mothers' health and contributes cost-effective benefits to the household, healthcare services and work-plan (Doherty, Horwood, Heskins, Magasan, et al., 2019; Derso, Biks, Tariku, et al., 2017).

Recent facts linking growing children health to breastfeeding revealed that about 43% of early childhood deaths arising majorly from respiratory infections and sudden infant-death were largely attributed to non-compliance of mothers to optimal breastfeeding practices (UNICEF, 2017). Feeding new-borns with colostrum, and breastfeeding infants, at least exclusively for six months safeguard them against deadly early childhood infections that are peculiar to infants and growing children. Across communities in many West African countries and the sub-Saharan region in totality, the predominance of household poverty, poor socioeconomic conditions of many mothers were identified as some of the leading threats that had restrained these women from adhering to optimal breastfeeding (Doherty, *et al.*, 2019; Horii, *et al.*, 2017; Mogre, Dery and Gaa, 2016; Tamara, *et al.*, 2015; Ekanem, *et al.*, 2012).

In fact, Rutstein and Rebecca (2014) observed most women in West Africa had a good knowledge of the health implications of optimal breastfeeding, yet a larger proportion of these women were not fully adhering to this recommended breastfeeding practice, majorly due to their poor nutritional status. Evidences from contemporary studies have clearly revealed that young children that were neither exclusively breastfed for a period of six months nor put to breast milk within an hour after birth were more susceptible to chronic and deadly infections than those that were optimally breastfed (Bankole, Solanke and Bisiriyu, 2020; Ahmed and Salih, 2019; Sholaye, Badejo and Jeminusi, 2014; Doherty, Sanders, Jackson, Lombard *et al.*, 2012).

Hence, life-long physical and cognitive impairments that are relatively higher among infants and young children born in the region have been extensively linked to improper and suboptimal breastfeeding practices among women (Grummer-Strawn, Holiday, Jungo, *et al.*, 2019; Victora, Bahl, Barros and França, 2016; Ghwass and Ahmed, 2011). Nearly, 25 million infants and young children in the world were not exclusively breastfed (UNICEF, 2014). Malnourished infants and young children, particularly those that were not exclusively breastfed in their first three months and three weeks of life accounted more for the approximated 2.6 million deaths of infants every year (UNICEF, 2017).

In spite of the severe implications that ensue from non-adherence of mothers to optimal breastfeeding as recommended by UNICEF and World Health Organisation, there is a dearth of studies that have addressed the subject matter beyond the conventional methodological approach. Also, contemporary works on breastfeeding practices in the sub-region of West Africa had limited their study area to a specific nation at a time (Cresswell *et al.*, 2019; Kambale, *et al.*, 2018; Ndirangu *et al.*, 2018; Genetu *et al.*, 2017; Asfaw *et al.*, 2015; Ugboaja *et al.*, 2013). Hence, the study addresses this

gap in literature by employing a multilevel methodological approach to investigating household factors and child physiognomies as predictors of breastfeeding practices among fertile mothers in West Africa. Nigeria, Guinea and Sierra Leone were specifically selected as studied countries because mothers in these countries least adhered optimal breastfeeding as indicated in the recently conducted Demographic Heath Surveys and Multiple Indicator Cluster Surveys

### **Literature Review**

Documented empirical findings from earlier studies revealed that about one million sub-optimally breastfed infants died globally of chronic but preventable early childhood infections as a result of the poor infant and young child feeding in the year ending 2011 (Grummer-Strawn, Holiday, Jungo, et al., 2019; Ahmed and Salih, 2019; Ajibade et al., 2015; UNICEF 2013). Taking a critical look at the patterns of breastfeeding across the various regions in the world in last few decades, it was observed that the attitude and perception of women towards breastfeeding practices in most scenario were significantly influenced by how much understanding these women had on the negative implications of non-adherence to optimal breastfeeding (Doherty et al., 2019; Cresswell et al., 2019; Hashim et al., 2017; Rutstein and Rebecca, 2014).

Contemporary studies have evidently and consistently revealed that adequate, thorough and proper breastfeeding has numerous benefits for both lactating mothers and their new-borns, the non-adherence of most mothers to optimal breastfeeding were clearly explained by way of life, quality of life and socioeconomic factors that most of these mothers were exposed in their various communities (Grummer-Strawn, Holiday, Jungo, et al., 2019; Hashim et al., 2017; WHO, 2017; Fjeld, et al., 2008; Doherty et al., 2012). The implications were more severely expressed in the developing regions. This is obvious, largely due to the high prevalence of poverty in the sub-Saharan African region, as well as sociocultural practices in relation to the act of breastfeeding. Consequently, babies born in the developed regions of the world were relatively exposed to lower life-threatening infections compared to those that were born in the underdeveloped or developing regions of sub-Saharan Africa, Latin America and Southeast Asia (WHO, 2017; Mogre, Dery and Gaa, 2016; Rutstein and Rebecca, 2014).

According to Victora *et al.* (2016), a significant proportion of women in the developed countries were finding it extremely difficult as a result of their tight work schedule to have their babies exclusively breastfed for six months before the introduction of formula-feeding. In line with this assertion, Arora, *et al.* (2017) observed that most mothers in the developed regions of the world were rest assured that their babies would grow healthier

and survive with the availability of adequate healthcare services delivery within their reach. Extracts from empirical studies further showed that while only 3 in every 20 infants were exclusively breastfed for the first six months in the United States, Sweden, Norway, Italy, Finland, Canada and Australia; while just 1 in every 100 young children were exclusively breastfed in the United Kingdom and Belgium. On the average, more than half of babies born in the developed countries were not exclusively breastfed in their first six months of life (Victora *et al*, 2016; PRB, 2018).

Consistently, the patterns of breastfeeding practices across regions of the world were found to differ significantly through race, culture, literacy and wealth status while non-adherence to exclusive breastfeeding was observed to higher be among women of lower socioeconomic status (Bankole, Solanke and Bisiriyu, 2020; UNICEF, 2017; WHO, 2017; Ajibade, Olakunlade, Makinde *et al.*, 2015). In a recent study carried out by Rollins, Bhandari, Hajebehoy & Horton (2016) on breastfeeding practices across regions of the world, they discovered that about two-thirds of gainfully employed mothers with at least a bachelor's degree in South Asia did not exclusively breastfeed their infants (Rollins *et al*, 2016). Equally, black mothers of 30 years and above in the United Kingdom were found to be twice more likely to exclusively breastfeed their babies compared to younger mothers (Rollins *et al*, 2016).

A varying number of dynamic factors have been identified as the key threats that have been preventing mothers from adhering to exclusive breastfeeding, among which were mothers' socioeconomic characteristics and the extent of knowledge on the importance of exclusive breastfeeding to the survival and healthy growth of their infants (Doherty *et al.*, 2019; Victora *et al*, 2016; Haroon, Salam, Imdad and Bhutta, 2013). Cresswell *et al.* (2019) and Salmon (2015), argued that mothers who were determined to exclusively breastfeed their babies would do just that regardless of the shortcomings on their way. Furthermore, studies have revealed that maintained that women were most often faced with challenges arising from cultural precision, traditional fallacies and economic weaknesses in their attempts to have their babies optimally breastfed (Berde and Yelcin, 2016; Ugboaja, Bertrand, Igwegbe, *et al*, 2013). Therefore, the length at which any mother may go in her willingness to adhere to optimal breastfeeding was perhaps measurable by how much such mother understanding of the health benefits that come with the practice irrespective of her community of residence (WHO, 2017; Meedya, Fahy and Kable, 2010; Haroon *et al.* 2013).

Studies by Rollins *et al* (2019) and Doherty, *et al.* (2019) "on why mothers stop breastfeeding in their first year" buttressed the argument that mothers putting to bed for the first time were often faced with challenges that came with breastfeeding; hence, these mothers in most cases saw the act of

exclusive breastfeeding as one of such practices that were rather harmful to their own health wellbeing. Rollins et al, (2019), Hashim et al. (2017) and Senbanjo et al. (2013) observed this laidback view by mothers as one of the key factors that hindering them from having their babies adequately and optimally breastfed as contained in the Innocenti Declaration (1990) In WHO. (2012). Thus, the absence of appropriate encouragement, neglects by some of the healthcare providers as well as distribution of free formula kits was some of the noticeable factors that have been influencing breastfeeding choices among women across regions of the world negatively (Rollins et al, 2019; Victora et al. 2016; Qureshi et al. 2011).

Retrospectively, in many sub-Saharan African countries, mothers, infants and young children were more vulnerable to protracted and deadly infections than any countries in other region of the world (Horwood, *et al.*, 2018; Fagbamigbe and Idemudia, 2015; Lawoyin and Olawuyi, 2001; Mututho, 2012). The vulnerability of mothers and their babies to protracted infections, cognitive and physiological impairments in many of the countries in sub-Saharan Africa has been largely attributed to mothers' poor nutritional status arising from their inadequate and improper feeding habits (Horwood, *et al.*, 2018; Fatoumata, *et al.*, 2009).

According to Horii et al., (2017), Ekanem, et al. (2012) and Agbo, Dibley, Odiase, et al. (2011) mothers' adherence rate to optimal breastfeeding in the West African sub-region had been poor despite the positive health benefits that have been associated with the recommended breastfeeding practice. The choice of breastfeeding among mothers seemed almost the same across countries in West Africa, with most of these mothers yet to fully adhere to the recommended practice by WHO/UNICEF (Bankole et al., 2020). According to the UNICEF (2016) reports on infant and young children extracted data for the region showed that the compliance rates to exclusive breastfeeding was lowest in Chad and highest in Cape Verde at 0.3% and 59.6% respectively.

The reports further revealed that exclusive breastfeeding was merely practiced by 12.1%, 17.4%, 20.5%, 23.3%, 26.9%, 32% and 33.3% women of reproductive age in Cote D'Ivoire, Nigeria, Guinea, Niger, Mauritania, Sierra Leone and Senegal respectively (UNICEF, 2016). On the contrary, the outcomes of the survey showed that one in every two women approximately breastfed her infant child exclusively in Burkina Faso (50.1%), Ghana (52.3%), Liberia (55.2%), Guinea Bissau (52.5%) over the same period of time (UNICEF, 2016).

Ajibade, Olakunlade, Makinde, et al., (2015), Bankole (2014) and Agbo, Dibley, Odiase, et al., (2011) maintained the major underlying factors that deterred mothers from adhering to exclusive breastfeeding in Nigeria was lack of financial commitment by the government to meet-up with the

healthcare needs of the people, and influence of cultural and traditional norms and values on breastfeeding practices. Bankole et al. (2020), Ekanem, et al. (2012) and Ogunlesi (2010) posited that mothers' non-adherence to exclusive breastfeeding in the country was largely due to the gap in knowledge regards what they and their babies stand to fully benefits from having their babies optimally breastfed.

Bankole, *et al.* (2020) further maintained that the socioeconomic and demographic characteristics of mothers, particularly of the urban working-class mothers had significance influence on the exclusive breastfeeding of their babies in their first-six months of life. Also, the socio-demographic characteristics of mothers were similarly identified by Berde and Yelcin (2016) and Ogunlesi (2010) as the major predictors of timing of breastfeeding initiation and exclusive breastfeeding in a semi-urban settlement of Nigeria. According to Berde and Yelcin (2016), the extent to which breastfeeding mothers willingly submitted to exclusive breastfeeding practices were discouraging.

According to a contemporary study conducted by Kambale, Buliga, Isia, *et al.*, (2018) in eastern Democratic Republic Congo, it was discovered that sociocultural influence played a significantly role in the timing of first breastfeeding initiation among women of reproductive age in Bukavu, South Kivu communities. In a similar study carried out by Ndirangu, Gatimu, Mwinyi, *et al.*, (2018), results showed that the timing of breastfeeding initiation among women in Namibia was also due to their conformity to some sociocultural practices that negated early breastfeeding initiation. In a related study conducted earlier among Hindus in India, Laroia and Sharma (2006), cultural influence, especially religiosity was established as the major predictors of the extent that mothers in the community were willing and ready to adhere to optimal breastfeeding as recommended by Bankole et al. (2020). Also, socio-demographic characteristics of mothers were similarly identified by Berde and Yelcin (2016) and Ogunlesi (2010) as the major predictors of timing of breastfeeding initiation and exclusive breastfeeding in a semi-urban settlement of Nigeria. According to Berde and Yelcin (2016), the extent to which breastfeeding mothers willingly submitted to exclusive breastfeeding practices were discouraging.

The outcomes of a qualitative study with a focus on the promotion of exclusive breastfeeding by Abba, De Koninck and Hamelin, (2010), the refusal of one in every three in mothers in Niamey, Niger, to adhere to exclusive breastfeeding for six months could be attributed to the failure of the country's government to fully implement the UNICEF and WHO recommended breastfeeding practices. The study was in consensus with Ogunlesi (2010) and Abba, De Koninck and Hamelin (2010) who maintained that poor socioeconomic status of mothers and cruel cultural beliefs did not

only hinder mothers from practicing exclusive breastfeeding but also deterred them from feeding their babies with colostrum as recommended.

Rees, Hawkesworth, Moore, Dondeh, and Unger (2016) posited that inaccessibility of women to primary healthcare facilities in Gambia has done worse than could be imagined when related to women's awareness on the reason for the proper and adequate breastfeeding of their infants and young children. It also perceived that delayed in the time of initiation of breastfeeding by most mothers in Gambia were avoidable if these women had had their babies in public health facilities (Rees et al, 2016).

Accordingly, the reviewed literature on the patterns of breastfeeding practices vividly showed that sub-optimal rather than optimal breastfeeding was predominantly practised among mothers in West Africa. Notable identified correlates of non-adherence of mothers to optimal breastfeeding practice among mothers in West Africa were poor nutritional status of mothers, lack of family supports, weak financial commitment to maternal and child healthcare by the government, poor utilisation of healthcare facilities, mother age at birth, household poverty, poor knowledge of mothers on the reasons for optimal breastfeeding of their babies, and ignorance, ranging from their wrong belief that the size of babies at birth should determine how much and long an infant be fed.

### **Theoretical Focus: *Socio-Ecological Theory***

Mothers' disposition, and the extent to optimal breastfeeding is practiced in a given community is largely predisposed by the influence of socio-ecological factors, prevailing socio-cultural factors, and individual characteristics (UNICEF, 2014). In recent time, attitude or perception of mothers in many West African countries to child and young child nutrition take a nearly similar pattern. Nevertheless, a possible divergent in approach to breastfeeding is imminent. This could be attributed to not just shared attitude to health-related factors but also due to government approach and dire willingness to implementing the recommendations of the WHO and UNICEF on the infant and young child feeding (UNICEF, 2014).

The socioecological theory by McLeroy et al. (1988) is a comprehensive approach to the behavioural deed, which is customarily predisposed by multiple levels of predictors. According to McLeroy et al. (1988) human behaviour is controlled by some multidimensional factors such as environmental and social problems, which have the tendency to change over time. Hence, the socioecological theory underpins the study since it links, and sufficiently clarifies household factors and child physiognomies as a predisposing factor to optimal breastfeeding among fertile mothers in Nigeria, Sierra Leone and Guinea. Congruently, outcomes

of the study are in line with the socio-ecological theory as posited by McLeroy et al (1988).

## **Methods**

### ***Research Design, Data Sources and Sample Size***

The study adopted cross-sectional descriptive research design. Secondary data were mined from the Nigeria Demographic and Health Survey (NDHS), the 2013 and the 2012 Guinea Demographic and Health Survey (GDHS) and 2013 Sierra Leone Demographic and Health Survey (SLDHS). The study analysed information from 5,008 (Sierra Leone), 12,180 (Nigeria), and 3,082 (Guinea) fertile mothers of aged 20-49 years who had at least a live birth in the preceding five years before the surveys. Fertile mothers who were currently pregnant, and those who gave birth at least two months preceding the surveys were not included in the study. The study was aimed to investigate the random and fixed effect of household factors and child physiognomies on adherence of fertile mothers to optimal breastfeeding in Nigeria, Sierra Leone and Guinea.

### ***Research Variables***

The response variable of the study is adherence to optimal breastfeeding. Optimal breastfeeding was captured by adherence and non-adherence to it. Optimal breastfeeding was measured by the all-inclusive adherence of fertile mothers to six months of exclusive breastfeeding, time of breastfeeding initiation, and duration of breastfeeding before a child was weaned. The indicator of breastfeeding duration of was categorised into “1” if less than 6 months, “2” if greater than 6 months but less than 24 months (the recommended minimum duration of breastfeeding by UNICEF/WHO) and “3” if is equal to or greater than 24 months (the recommended acceptable duration of breastfeeding by UNICEF/WHO). We generated exclusive breastfeeding by collapsing of timing of introduction of pre-lacteal diets immediately a baby was born, and the number of months that a mother fed her child exclusively with breast milk. A fertile mother who exclusively breastfed her infant for 6 months, put her baby to breastmilk (colostrum) within an hour after birth, and breastfed such children within the minimum breastfeeding duration was considered to practice optimal breastfeeding, and it was categorised as “1” or “0” otherwise.

The key explanatory variables for the study are household factors, child physiognomies and community level variables. References were made to evident important features at each level of classifications. The household factors are household headship, marriage type, spouse’s level of education and household wealth index. The child physiognomies were birth interval,

birth type, mode of child delivery, birth size and place of delivery. All community level of the study was generated from selected individual (maternal) level factors, household factors and child physiognomies. The selected community level variables of the study are community poverty level, community level of hospital delivery, community level of antenatal care visit, community type, media saturation in the community and community level of education. Community levels Child physiognomies, and household variables were aggregated at the level of primary sampling unit to create the community-level variables of importance. Our decision to generate the community level variables of importance in the study was based on the practical arguments from literature that breastfeeding is a cultural practice that is community specific and has been established to have homogeneity influence on child bearing matters (Horii et al., 2017; Sika-Bright, 2010). Our choice of all incorporated explanatory variables in the study was steered by reviewed literature and the socio-ecological theory.

### **Data Analysis**

All statistical analyses were carried out using Stata version 14. Multilevel mixed-logistic regression was engaged to investigate the factors (household factors, child physiognomies and community factors) at twofold level to the outcome variable. Thus, two effects were calculated for. The fixed effect, where the “ordinal ratio of binary logistic regression was generated, and “random effect” where the intra-class correlation coefficients (ICC) , and the log-likelihood tests were generated. All indicators of importance in the study were appropriately captured by the Demographic Health Survey datasets used in the study. The justification for the adoption of multilevel analysis was the basic to account for clustering in the sample design. A twofold model is specified as follows:

$$y_{ij} = \beta_0 X_{0ij} + \beta_1 X_{1ij} + U_j X_{0ij} + \xi_{ij}$$

Where

$y_{ij}$  was breastfeeding practice of  $i$ th woman in the  $j$ th community

$\beta_0, \beta_1$  were the fixed effects;  $U_j, \xi_{ij}$  were the random effects

Five models were fitted employing the Stata `xtmelogit` command (StataCorp 2015). Three models were fitted to generate the fixed-effects, and these comprised Models 1, 2 and 3. On the other hand, two models were also fitted in view to establishing the random effects of the study. These included Models 4 and 5. Model 1 was fitted based on household factors, while child physiognomies and community characteristics were controlled for. Model 2 was fitted based on child physiognomies, while household factors and community level characteristics were controlled for. Model 3 was fitted for community level characteristics, while household factors and child physiognomies were controlled for.

In order to derive for mixed effects logistic regression, a void model was fitted to explain the extent of variation in the outcome variable (optimal breastfeeding), thereby dropping the covariates. Subsequent with the addition of the explanatory variables were then fitted Hence, Models 4 and 5 were fitted. Model 4 was fitted based on household factors and child characteristics, while community level characteristic was controlled for. Model 5 (full model) was fitted on the household factors, child characteristics and community level characteristics. The Variance Inflation Factor (VIF) was also carried out to check the magnitude of multi-collinearity of each of explanatory variables. Variables with VIF > 10 were not included in multivariate models. Our exclusive decision was based on the postulation that variables with VIF > 10 were considered as such with a severe or high level of multi-collinearity (O'brien, 2007; Akinwande, Dikko, & Samson, 2015). Correspondingly, the ICC was derived as follows:

$$\frac{\sigma_{ui}^2}{\sigma_{ui}^2 + [n^2/3]}$$

Where  $\sigma_{ui}^2$  was the variance at the community level (Merlo *et al.* 2016).

## Results

Table 1 presents the results of the respondents according to household factors and child physiognomies. The results showed that that seven in each 10 of the respondents' spouses from Guinea (70.1%) and Sierra Leone (70%) had no formal education while nearly 30% of the respondents' spouses from Nigeria had high school education. The results showed that about two-thirds of the respondents from Nigeria (66.7%) and Sierra Leone (64.2%) were in a monogamous marriage while nearly half (48.7%) of the respondents from Guinea were in a polygamous marriage. Results by household head showed that majority of the respondents from Guinea (86.2%), Nigeria (88.5%) and Sierra Leone (74.9%) were from households headed by men.

Results by child birth interval showed that except for respondents from Guinea (50.6%), less than half of the respondents from Nigeria (38.1%) and Sierra Leone (46%) stayed less than 36 months before giving birth their current child. The results by child sex showed that 1.4% of and 50.3% of mothers from Guinea and Nigeria had the male child in their last birth while less than half of mothers from Sierra Leone (48.2%) gave birth to male birth. Also, results by birth type showed that almost all respondents from Guinea (97.3%), Nigeria (97.8%) and Sierra Leone (97.4%) had no multiple births in during their last child delivery.

Results by place of delivery showed that about three-third of mothers from Nigeria (60.3%) and Guinea (58.6%) had their last birth at home while 56.3% of mothers from Sierra Leone had their babies in health facilities.

Results further showed that at least two in each five of mothers from Guinea (48.3%), Nigeria (43.8%) and Sierra Leone (43.7%) gave birth to babies that were larger than average; while nearly all the mothers from Guinea (97.2%), Nigeria (97.3%) and Sierra Leone (95.9%) had their last birth through vaginal delivery.

Table 2 presents the results of odds ratio for fixed effects in relation to optimal breastfeeding. In Model 1, we fitted in household factors and controlled for child physiognomies and community level factors respectively. In Model 2, we fitted in child physiognomies and controlled for household and community level factors respectively. Our results showed in Guinea showed that fertile mothers whose partners had post-secondary education were 19.8% less likely to practice optimal breastfeeding than those whose spouses had no formal education (OR = 0.80). Results by household wealth showed that fertile mothers from the richer household were 14.1% less likely to practise optimal breastfeeding than those from the poorest household. Results by child sex showed that the likelihood of mothers' adherence to optimal breastfeeding was 14.9% less likely among fertile mothers who had female babies to breastfeed than those with male babies (OR = 0.85). Similarly, fertile mothers who had multiple births were 82.1% less likely to adhere to optimal breastfeeding than those with single births (OR = 0.18).

The odds ratio results in Nigeria showed that fertile mothers from richer households were 36.7% more likely to adhere to optimal breastfeeding than those from the poorest households (OR = 1.37). Results by birth type showed that fertile mothers with multiple births were 54.1% less likely to adhere to optimal breastfeeding than those with single birth in the country (OR = 0.46). Results showed that fertile mothers who delivered their babies in health facilities were 19.3% more likely to practice optimal breastfeeding than those who had theirs at home (OR = 1.19). Our results also showed that birth type and child mode of delivery were significantly associated with optimal breastfeeding among fertile mothers in Nigeria ( $p < 0.05$ ).

In Sierra Leone, fertile mothers in polygamous marriage were 4.7% less likely to practice optimal breastfeeding than those in monogamous marriage (OR = 0.95). Results by household wealth for the country showed that fertile mothers from the richest households were 19.3% more likely to practice optimal breastfeeding than those from the poorest households (OR = 1.19). Similarly, our results showed that fertile mothers from the female headed households were 4.7% more likely to practice optimal breastfeeding than mothers from the male headed households (OR = 1.05). Fertile mothers with multiple births in Sierra Leone were 31% less likely to practise optimal breastfeeding than those who had single birth (OR = 0.69); while fertile mothers who had their babies in health facilities were found to be 3.7% less

likely to adhere to optimal breastfeeding than those who had their babies at home (OR = 0.96). More so, fertile mothers who had their babies through caesarean were found to be 19.3% more likely to adhere to optimal breastfeeding than those who had their babies through vagina delivery (OR = 1.19). Our results further showed that birth interval and household headship significantly influenced fertile mothers' adherence to optimal breastfeeding in Sierra Leone ( $p < 0.05$ ).

Table 3 presents the results of odds ratio for fixed effects in relation to optimal breastfeeding. In Model 3, we fitted in community level factors and controlled for household factors and child physiognomies respectively. Our results showed that in Guinea, rural mothers were 98.7% less likely to adhere to optimal breastfeeding than urban residents fertile mothers (OR = 0.01). Results by community poverty level showed that fertile mothers within the high-class level of poverty were 23.7% less likely to adhere to optimal breastfeeding than those in low poverty class (OR = 0.77). Fertile mothers with high level of education were 15.4% more likely to practice optimal breastfeeding than those with low level of education (OR = 1.15). We also noted that fertile mothers who had visited health facilities for at least four times during pregnancy were 18.4% more likely to adhere to optimal breastfeeding than those who had rarely visited health facilities during the same period (OR = 1.18).

Our odd ratio results showed that in Nigeria, rural fertile mothers were 8.7% less likely to adhere to optimal breastfeeding than those living in urban communities (OR = 0.92). Results by community poverty concentration showed that fertile mothers in high poverty class were 142% more likely to adhere to optimal breastfeeding than those in the low poverty class in the country (OR = 2.14). Similarly, fertile mothers who had fully utilised health facilities during child delivery were found to be 27.3% less likely to adhere to optimal breastfeeding than those who rarely had their babies in health facilities (OR = 0.73). Also, our results showed that fertile mothers who visited health facilities for at least four times during pregnancy in Nigeria were 75.7% more likely to adhere to optimal breastfeeding than those who had visited for more than four times during the same period (OR = 1.76). Our results further showed that adherence to optimal breastfeeding and antenatal care visit were significantly associated among fertile mothers in Nigeria ( $p < 0.05$ ).

In Sierra Leone, we observed that rural fertile mothers were 43.7% more likely to adhere to optimal breastfeeding than fertile mothers living in urban residence. Our results showed that mothers with high level of education were 5.3% less likely to adhere to optimal breastfeeding than those with low level of education (OR = 0.95). Evidence from our study showed fertile mothers who constantly utilised health facilities during child birth

were 43.1% less likely to adhere to optimal breastfeeding than mothers with low-level utilisation of health facilities (OR = 0.57). Our results further showed that there was a significant association between community level of child place of delivery and adherence to optimal breastfeeding among fertile mothers in Sierra Leone ( $p < 0.05$ ). Relatively, we discovered that the adherence of mothers to optimal breastfeeding in Sierra Leone was significantly associated with community level of antenatal care visits and level of mass media exposure ( $p < 0.05$ ).

In Table 4, the values of the log-likelihood tests and ICC outcomes explained the existence of significance association between the explanatory variables, and the response variables, as well as the contribution of the community level characteristics for mothers' adherence to optimal breastfeeding in the studied West African countries. Results of the ICC confirmed two indications. Firstly, it confirmed the existence of rational variation in fertile mothers' adherence to optimal breastfeeding in the absence of the covariates in the three studied countries. Hence, as presented in Table 4, the outcomes in the "empty model" for Guinea, the community level characteristics accounted for 40.4% of the variation in adherence to optimal breastfeeding practice for mothers. Similarly, in the "empty model" for Nigeria and Sierra Leone, the community level characteristics accounted for 20.3% and 21.4% of the variation in the adherence of fertile mothers to optimal breastfeeding respectively. Furthermore, the log-likelihood test with unpredictable values of the chi-square statistic confirmed the goodness of fit for all the fitted models ( $p < 0.05$ ).

The results in Model 4 showed that household factors, and child characteristics at the community level accounted for 40.3%, 22.7% and 20.7% variation in adherence to optimal breastfeeding for fertile mothers in Guinea, Nigeria and Sierra Leone respectively. Also, the log-likelihood test with varying figures of the chi-square statistic established the goodness of fit ( $p < 0.05$ ) of Model 4 in all these three countries. Based on these outcomes, we can conclude that community level household factors, and child characteristics were predictors of fertile mothers' adherence to optimal breastfeeding in Guinea, Nigeria and Sierra Leone respectively.

Similarly, maternal characteristics, at the community level accounted for 36.3%, 20.6% and 18.7% variation in adherence to optimal breastfeeding practice for fertile mothers Guinea, Nigeria and Sierra Leone respectively. Our results further showed that the log-likelihood test with varying figures for the chi-square statistic confirmed the goodness of fit ( $p < 0.05$ ) of Model 5 in all the three studied countries. Based on our findings, we can conclude that maternal characteristics at the community level, and fertile mothers' adherence to optimal breastfeeding in Guinea, Nigeria and Sierra Leone were significantly associated.

Figure 1 presents the results of the adherence of fertile mothers to optimal breastfeeding in the studied countries. Our results showed that only 5.6%, 7.7% and 15.9% of fertile mothers who were living in rural settlements of Guinea, Nigeria and Sierra Leone adhered to optimal breastfeeding as recommended by WHO/UNICEF. Also, we observed that optimal breastfeeding was practiced as little as 4.8%, 10.1% and 9.5% among who were residing in urban settlements of Guinea, Nigeria and Sierra Leone respectively. The totality of fertile mothers who practiced optimal breastfeeding was 5.3%, 8.6% and 14% in Guinea, Nigeria and Sierra Leone respectively. Our results across the three countries showed that optimal breastfeeding was least practiced among fertile mothers in Guinea.

Table 1: Percentage distribution of fertile mothers according to household and child in physiognomies

<b>Variables</b>	<b>Guinea n = 3082</b>	<b>Nigeria n= 12180</b>	<b>Sierra Leone n = 5008</b>
<b>Household Factors</b>	<b>%</b>	<b>%</b>	<b>%</b>
<b>Spouse's education level</b>			
No formal education	70.1	38.9	70.0
Elementary	10.6	18.6	7.9
High School	13.4	29.1	17.3
Tertiary	5.9	13.3	4.9
<b>Marriage type</b>			
Monogamy	51.3	66.7	64.2
Polygamy	48.7	33.3	35.6
<b>Household wealth index</b>			
Poorest	21.0	21.3	21.9
Poorer	20.9	21.4	20.0
Middle	20.6	19.5	20.7
Richer	19.7	18.7	19.8
Richest	17.8	19.2	17.6
<b>Household head</b>			
Male	86.2	88.5	74.9
Female	13.8	11.5	25.1
<b>Child Physiognomies</b>			
<b>Birth interval</b>			
< 24 months	20.4	27.3	24.3
24 – 36 months	28.9	34.7	29.7
> 36 months	50.6	38.1	46.0
<b>Child's sex</b>			
Male	51.4	50.3	48.2

Female	48.6	49.7	51.8
<b>Birth type</b>			
Single birth	97.3	97.8	97.4
Multiple birth	2.7	2.2	2.6
<b>Child's Place of delivery</b>			
Home	58.6	60.4	43.7
Health facilities	41.4	39.6	56.5
<b>Baby's size at birth</b>			
Larger than average/very large	48.3	43.8	43.7
Average	40.1	41.5	38.2
Smaller than average/very small	11.5	14.3	16.0
Not reported	0.1	0.5	2.1
<b>Mode of child delivery</b>			
Vaginal	97.2	97.3	95.9
Caesarean	2.8	2.7	4.1

*Source: Author's work 2020 (Data generated from 2012 GDHS, 2013 NDHS and 2013 SLDHS)*

Table 2: Binary logistic odds ratio for fixed effects related to optimal breastfeeding practices among fertile mothers

Characteristics	Guinea			Nigeria			Sierra Leone		
	OR	p-value	95% CI	OR	p-value	95% CI	OR	p-value	95% CI
<b>Model 1: Household Factors, controlling for Child Physiognomies and Community Level Factors</b>									
<b>Spouse's education level</b>									
No formal education <sup>ref</sup>	<b>1.000</b>			<b>1.000</b>			<b>1.000</b>		
Primary	0.538	0.148	0.233-1.245	1.080	0.597	0.812-1.436	0.922	0.658	0.642-1.324
Secondary	0.781	0.504	0.377-1.614	1.032	0.830	0.772-1.380	0.909	0.517	0.682-1.212
Post-secondary	0.802	0.687	0.274-2.348	1.035	0.855	0.717-1.494	0.652	0.136	0.371-1.144
<b>Marriage type</b>									
Monogamy <sup>ref</sup>	<b>1.000</b>			<b>1.000</b>			<b>1.000</b>		
Polygamy	0.938	0.771	0.608-1.446	1.060	0.580	0.862-1.303	0.953	0.650	0.774-1.173
<b>Household wealth</b>									
Poorest <sup>ref</sup>	<b>1.000</b>			<b>1.000</b>			<b>1.000</b>		
Poorer	0.862	0.653	0.450-1.649	1.138	0.414	0.834-1.552	0.917	0.558	0.685-1.226
Middle	0.719	0.351	0.360-1.437	1.277	0.173	0.899-1.816	0.888	0.439	0.658-1.199
Richer	0.859	0.677	0.420-	1.367	0.108	0.933-	0.703	0.035*	0.506-

			1.757			2.001			0.975
Richest	0.632	0.354	0.240- 1.666	1.014	0.948	0.658- 1.565	0.657	0.053	0.430- 1.006
<b>Household head</b>									
Male <sup>ref</sup>	<b>1.000</b>			<b>1.000</b>				<b>1.000</b>	
Female	0.897	0.772	0.428- 1.876	1.124	0.496	0.803- 1.571	1.047	0.706	0.824- 1.331
<b>Model 2: Child Physiognomies, controlling for Household Factors and Community Level Factors</b>									
<b>Birth interval</b>									
< 24 months <sup>ref</sup>	<b>1.000</b>			<b>1.000</b>				<b>1.000</b>	
24 – 36 months	1.061	0.885	0.475- 2.368	1.295	0.065	0.984- 1.705	1.437	0.044*	1.011- 2.043
> 36 months	1.167	0.693	0.541- 2.516	0.946	0.692	0.717- 1.248	1.386	0.061	0.984- 1.950
<b>Child's sex</b>									
Male <sup>ref</sup>	<b>1.000</b>			<b>1.000</b>				<b>1.000</b>	
Female	0.851	0.450	0.560- 1.293	0.993	0.942	0.826- 1.194	1.019	0.847	0.839- 1.238
<b>Birth type</b>									
Single birth <sup>ref</sup>	<b>1.000</b>			<b>1.000</b>				<b>1.000</b>	
Multiple birth	0.179	0.112	0.021- 1.502	0.459	0.029*	0.228- 0.922	0.690	0.286	0.349- 1.364
<b>Child's place of delivery</b>									
Home <sup>ref</sup>	<b>1.000</b>			<b>1.000</b>				<b>1.000</b>	
Health facilities	1.384	0.213	0.830- 2.306	1.193	0.153	0.937- 1.520	0.963	0.747	0.770- 1.206
<b>Baby's size at birth</b>									
Very large/larger than average <sup>ref</sup>	<b>1.000</b>			<b>1.000</b>				<b>1.000</b>	
Average	1.040	0.867	0.659- 1.644	1.061	0.565	0.867- 1.299	0.925	0.502	0.737- 1.161
Very small/smaller than average	0.779	0.508	0.372- 1.631	0.794	0.137	0.586- 1.076	0.898	0.478	0.666- 1.210
<b>Child Mode of delivery</b>									
Vaginal <sup>ref</sup>				<b>1.000</b>				<b>1.000</b>	
Caesarean	Omitted due to severe collinearity			0.339	0.016*	0.141- 0.816	0.548	0.070	0.286- 1.051

Notes: OR = Odd Ratio; ref (reference category); \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ ,  $p > 0.05$  (not significant).

Table 3: Binary logistic odds ratio for fixed effects related to optimal breastfeeding practices among fertile mothers (Model 3)

Characteristics	Guinea			Nigeria			Sierra Leone		
	OR	p-value	95% CI	OR	p-value	95% CI	OR	p-value	95% CI
<b>Community type</b>									
Urban <sup>ref</sup>	<b>1.000</b>			<b>1.000</b>			<b>1.000</b>		
Rural	0.013	0.764	0.604-2.019	0.913	0.481	0.708-1.176	1.437	0.059	0.987-2.092
<b>Community level of poverty concentration</b>									
Low <sup>ref</sup>	<b>1.000</b>			<b>1.000</b>			<b>1.000</b>		
Medium	0.542	0.153	0.234-1.257	1.469	0.013*	1.083-1.992	1.387	0.086	0.955-2.013
High	0.767	0.669	0.228-2.582	2.142	0.001**	1.389-3.301	1.127	0.683	0.635-2.001
<b>Community level of women education</b>									
Low <sup>ref</sup>	<b>1.000</b>			<b>1.000</b>			<b>1.000</b>		
Medium	1.129	0.785	0.474-2.688	0.950	0.727	0.709-1.270	1.062	0.767	0.714-1.579
High	1.154	0.823	0.328-4.063	0.724	0.120	0.482-1.088	0.947	0.845	0.548-1.638
<b>Community level of child delivered in health facilities</b>									
Low <sup>ref</sup>	<b>1.000</b>			<b>1.000</b>			<b>1.000</b>		
Medium	1.242	0.619	0.529-2.920	0.945	0.729	0.686-1.301	0.516	0.000***	0.374-0.712
High	1.387	0.531	0.499-3.859	0.727	0.102	0.497-1.065	0.569	0.001**	0.407-0.798
<b>Community level of antenatal</b>									

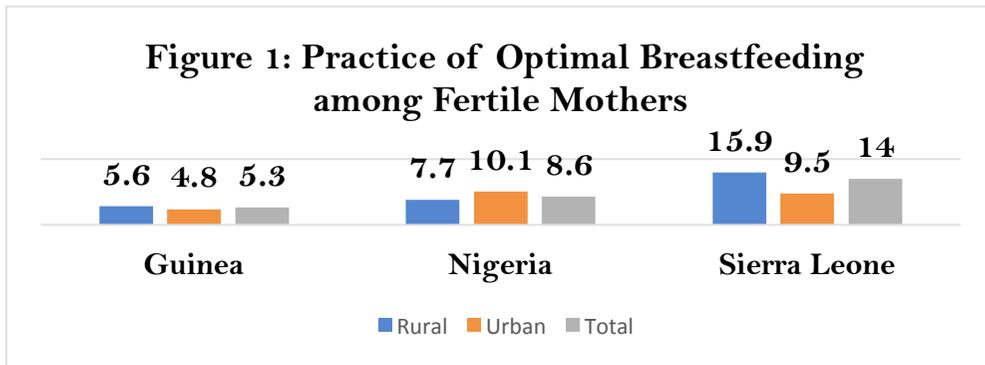
<b>care visit</b>									
Low <sup>ref</sup>	<b>1.000</b>			<b>1.000</b>			<b>1.000</b>		
Medium	1.746	0.198	0.745- 4.078	1.389	0.053	0.996- 1.939	1.776	0.001**	1.254- 2.514
High	1.184	0.745	0.426- 3.279	1.757	0.006**	1.173- 2.633	1.926	0.000***	1.304- 2.844
<b>Community level of media saturation</b>									
Low <sup>ref</sup>	<b>1.000</b>			<b>1.000</b>			<b>1.000</b>		
Medium	1.156	0.698	0.556- 2.401	0.947	0.705	0.711- 1.259	0.688	0.038*	0.483- 0.979
High	1.143	0.735	0.527- 2.478	1.177	0.282	0.875- 1.584	0.690	0.092	0.447- 1.063

Notes: OR = Odd Ratio; ref (reference category); \*p<0.05, \*\*p<0.01, \*\*\*p<0.001, p>0.05 (not significant)

Table 4: Multilevel logistic regression for random effects related to optimal breastfeeding practice for mothers in selected

Parameter	Guinea			Nigeria			Sierra Leone		
	Empty Model	Model 4	Model 5	Empty Model	Model 4	Model 5	Empty Model	Model 4	Model 5
<b>Random Effect</b>									
Community-level variance (SE)	2.234 (.77)	2.217 (.88)	1.876 (.78)	0.836 (.14)	0.967 (.20)	0.853 (.19)	0.897 (.14)	0.861 (.16)	0.756 (.15)
ICC (%)	40.4	40.3	36.3	20.3	22.7	20.6	21.4	20.7	18.7
Log-likelihood	-575.4	-491.3	-484.8	-3398.4	-2825.5	-2813.2	-1958.3	-1546.5	-1534.7
<b>Model Fitness</b>									
Log-likelihood test	55.9***	44.6** *	35.7** *	150.87 ***	127.7* **	105.5** *	157.7** *	95.5***	77.9***
AIC	1156.7	1020.6	1023.7	6802.8	5673.0	5690.4	3922.6	3135.1	3133.4

Note: \*p<0.05, \*\*p<0.01, \*\*\*p<0.001, p>0.05 (not significant)



Source: Author's work 2020 (Data generated from 2012 GDHS, 2013 NDHS and 2013 SLDHS)

## Discussion

This study extensively investigated the association between household factors, child physiognomies and the adherence of fertile mothers to optimal breastfeeding practice in Guinea, Nigeria and Senegal. Evidence from our unadjusted binary logistic regression showed that household wealth index and birth interval were household predictors of optimal breastfeeding among fertile mothers. These factors were found to have positive and significant influence on optimal breastfeeding among fertile mothers in Sierra Leone ( $p < 0.05$ ). Similarly, child physiognomies, such as child mode of delivery, the place of birth delivery were identified as predictors of optimal breastfeeding among mothers in Nigeria ( $p < 0.05$ ). On the other hand, our results showed that the probability that fertile mothers will adhere to optimal breastfeeding in Guinea, Nigeria and Sierra Leone were found to significantly associated with household wealth index, birth interval, household head, birth type, baby's size at birth and child mode of delivery.

Also, evidence from our binary logistic odds for fixed effects related to optimal breastfeeding showed that household factors and child physiognomies played a very significant role on the extent to which optimal breastfeeding was adhered to by fertile mothers in all the three countries. Our findings were consistent with Bankole et al., (2020), Mogre, Dery and Gina (2016) who attributed the choice of breastfeeding patterns to the socioeconomic characteristics of mothers in Nigeria and Ghana respectively. Similarly, our findings corroborated Salmon (2015), Qureshi et al. (2011) and Ogunlesi (2010) who maintained that maternal level of education, house factors such as level of education, house wealth index, age at first birth, place of residence and spouse level of education had significance influence on choice of breastfeeding among mothers in many of sub-Saharan Africa countries.

Our results further showed that community level of poverty, community level education of women, access to education, the uptake of healthcare facilities, and child's delivery all had an influence on the adherence of fertile mothers to optimal breastfeeding practice in Guineas, Nigeria and Sierra Leone respectively ( $p < 0.05$ ). Comparatively, the decision to practice optimal breastfeeding or not at the community level was significantly influenced by how many times mothers attended antenatal care in the country ( $p < 0.05$ ). It is evident from the results of the binary logistic ratio fixed effects that the utilisation of healthcare facilities during the antenatal period had a significant influence on the adherence of fertile mothers to optimal breastfeeding in Nigeria and Sierra Leone respectively ( $p < 0.05$ ). Also, the results showed that the likelihood of adherence of mothers to optimal breastfeeding practice in Sierra Leone was found to be strongly associated with the extent of community level of media saturation ( $p < 0.05$ ).

Our findings corroborated Grummer-Strawn et al., (2020), Horwood (2018), WHO (2017), Victora et al., (2016), and Andy (2015) who maintained that the likelihood or tendency that a community of fertile mothers would adhere to proper and breastfeeding practices was dependent on such factors, extending from socioeconomic factors to access to primary and maternal healthcare system. Similarly, our findings were not totally different from Bankole et al., (2020), Kambale et al., (2018), Sika-Bright (2010) and Laroia and Sharma (2006) who posited that societal norms, and values placed on self, could influence the extent to which mothers of reproductive age would adhere to optimal breastfeeding in West Africa.

Equally, our findings corroborated Doherty et al., (2019), Rees et al (2016) and Haroon et al. (2013) who observed that shortage, and inaccessibility to primary healthcare facilities indirectly influenced the choice of breastfeeding practices among mothers of reproductive age. More so, our findings were in agreement with Tampah-Naah and Kumi-Kyereme (2013) who argued that more than a third of mothers in Ghana had not exclusively breastfed their infants for the recommended six months. They however, claimed that there were discrepancies in mothers' non-adherence to exclusive breastfeeding; and these discrepancies were observed through mother's sociocultural, demographic, economic and accessibility to primary healthcare facilities (Tampah-Naah and Kumi-Kyereme, 2013).

## **Conclusion**

It was evident from our findings that optimal breastfeeding was practiced by an insignificant proportion of fertile mothers in Guinea, Nigeria and Sierra Leone. It was also explicit that household factors and child physiognomies at community level had significance influence on breastfeeding practices among fertile mothers in these three countries covered by the study. For instance, the spread of household poverty, low level of maternal education at the community level, shortage and inaccessibility of primary healthcare facilities by nursing mothers, and during birth were responsible for the poor adherence of fertile mothers to optimal breastfeeding.

Although there were variations in the adherence level of fertile mothers to optimal breastfeeding in the three studied countries, the level of non-adherence was lowest among mothers in Guinea. Unless the aforementioned hindrances to optimal breastfeeding are fully addressed, the burdens and implications of sub-optimal breastfeeding are bound to manifest with time. The study concluded that fertile mothers' adherence to optimal breastfeeding is fundamental to reducing vulnerability to life threatening infections, poor physiological development, cognitive impairments and early childhood death to the lowest possible rates among infants and young children in Guinea, Nigeria, Sierra Leone respectively.

## **Policy Recommendations**

Based on our findings, we are suggesting the following recommendations:

- i. Since, the spread of household poverty is predominantly high in many communities, the governments of these countries need to come to the supports of pregnant and nursing mothers. To start with, there should be a form of social welfare packages for these women during these periods. This will enhance their nutritional status, and also that of their infants. Following behind is the need to invest in the empowerment of the young girls and married women of reproductive age. Therefore, the proposed empowerment schemes must be well spelt-out, codified and fully implement across these three countries.
- ii. Also, there is an urgent need for the government of Guinea, Nigeria and Sierra Leone to invest heavily, and prudently in the establishment of more primary healthcare facilities in both rural and urban settlements across countries. The government should also invest in the training of medical health personnel in order to ease the workload on the few available healthcare personnel in these countries.
- iii. In order to address the influence of child physiognomies in relation to optimal breastfeeding, two measures are imperative. One, there is a need to

provide pregnant women and nursing mothers with firsthand information on the future implications of their non-adherence to optimal breastfeeding on their young children. Child's right awareness programme should be relayed in local languages - major stakeholders in the communities should be carried along and engaged in the programmes. Two, mothers who violate child's rights, especially, if such rights relate to infant and young child nutrition should have their babies taken from them and raise in government established foster homes.

iv. Finally, in order to ease the burdens that come with infant care, especially in the early weeks after child delivery, the governments of Guinea, Nigeria and Sierra Leone should consider extending paternity leave to husbands, at least in the first three weeks after their wives put to bed. Also, maternal leave should be extended to a period of 6 months after child delivery. This extension may encourage exclusive breastfeeding among nursing mothers.

### **Limitations of the Study**

A detailed predictor of optimal breastfeeding practices calls for the availability of intricate and heterogenous variables which are partially available in GDHS, NDHS and SLDHS datasets that were used in our study. Likewise, DHS datasets used did not provide us with adequate sociocultural influences on optimal breastfeeding, through which inferences could be generated for the study population. Moreover, the cross-sectional datasets employed in the study did not well explain the cause-effect association between the outcome and explanatory variables captured in the study. Consequently, significant variation may have occurred in the study outside the existing data. Hence, it is imperative that a further study should employ the mixed-method approach in order to explore cultural norms and values that may influence optimal breastfeeding.

### **Ethics approval and consent to participate**

The custodian of the DHS datasets (MEASURE DHS), authorised access to the data analysed in the study. Analyses of this study are of no threat or imprudence to any individual or organisations since they are in anonymised form. The data analysed are accessible in the public domain.

### **Availability of data and materials**

The dataset supporting the conclusions of this article is available online at <https://dhsprogram.com/data/available-datasets.cfm>

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# **Pharmaceutical Care in The Prevention of Childhood Immunity – The Experience of the Pharmacist in Bulgaria**

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## **Abstract**

The immune system is a collection of many biological structures and processes in the body that protect it from disease. In newborns, infants and young children, the immune system is still immature, leading to frequent illnesses. Practice shows that very often parents seek the advice of pharmacists for prevention or in the initial stages of the disease. This in turn requires pharmaceutical care. A representative, anonymous and voluntary online survey was conducted in the period April 2019 – September 2019. It included 158 people, assistant and master pharmacists. 96% of the attendees agreed that pharmaceutical care gives them professional satisfaction. When it comes to children 93% of the respondents said that pharmaceutical care is their top priority. At the same time 70% of the participants pointed out the lack of sufficient time as the main problem for giving pharmaceutical care.

The study concluded that it would be advisable to develop a model for the application of a comprehensive immunostimulatory program in pre-school and primary school children for prevention.

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**Keywords:** Childhood immunity, Pharmaceutical Care, Bulgaria.

## **Introduction**

The aim of the present study is to follow the opinion of pharmacists in Bulgaria on the topic of immunostimulation in the pediatric population. We also want to assess the level of awareness of pharmacists on the subject and their attitude to the provision of pharmaceutical care to strengthen children's immunity.

The immune system is a collection of many biological structures and processes in the body that protect it from disease. In order to function properly, the immune system must recognize a wide range of agents, called pathogens - from viruses to helminths, and differentiate them from the body's

own healthy tissue. (Ferenčík, et al. 2006) (Foster 1970) (Silverstein 1989) The immune system consists of a complex network of innate and adaptive components, equipped with an exceptional ability to adapt and respond to many diverse challenges. Collectively, this cellular network acts as a huge regulator of the host's homeostasis, allowing it to maintain and restore tissue function in the context of microbial and environmental encounters. (Belkaid & Hand, 2014) The immune system is an integral part of the body's basic physiological processes, such as the development, reproduction, and healing of wounds. The closed circle of interaction between the immune system and other body systems such as metabolism, the central nervous system and the cardiovascular system is also apparent. (Sattler, 2017) The immune system is divided into two types - innate and acquired. The innate immune system provides an early first line of defense against invading pathogens. Participating cells are neutrophils, monocytes, macrophages and dendritic cells that all interact with the adaptive immune system. The acquired immune system develops after a "meeting" of the organism with various pathogens. The acquired immune system recognizes specific microbial antigens through its highly mutated cell surface receptors and, depending on the type of bacteria it encounters, naive T cells can differentiate into either effector T cells to fight the bacteria, or in regulatory T (Treg) cells. Although it takes time for the acquired immune system to differentiate and proliferate to respond to microbial antigens after the first encounter, some of the cells survive long-term and provide a strong and timely response upon recurrence. (Zhao & Elson, 2018) In newborns, infants and young children, the immune system is still immature. This leads to frequent illnesses, which can be chronic, affecting the physical development and emotional state of adolescents. (Haneen, 2018) The immune system matures gradually from 1 to 7 years of age. In cases where the immune system is not functioning properly, different disease states develop. Children attending a day nursery or kindergarten get sick average 8 times in the first year, 5-6 times in the second year and 3-4 times in the third. Often diseases are chronic, affecting the physical development and emotional state of adolescents. (Ugrinova, 2016).

Creating the right hardening regime, nutrition, wakefulness and motor activity combined with regular physical prophylactic procedures are a prerequisite for the development of healthy and harmoniously developed children. (Kasnakova, Tornyova, Mihaylova, & Stankova, 2019)

Some of the most common mild illnesses observed in children include: Pain and fever, colds and coughs, diarrhea and vomiting.

The incidence of pain is common in newborns, infants and children, with approximately 33-82% of hospitalized pediatric patients experiencing moderate to severe pain, especially after surgical or other painful procedures.

(O'Donnell & Rosen, 2014) (Twycross, MacLaren Chorney, McGrath, Finley, & al, 2013)

High fever is one of the most common medical problems experienced by children and is often caused by relatively harmless, self-limiting viral diseases that parents cope with. (Impicciatore, Pandolfini, Casella, & Bonati, 1997) (Casteels-van Daele, 1991)

Chronic cough is a common childhood problem. Viral infections are the most common cause, but other less common disorders should be ruled out when the cough seems unusually severe and / or frequent. Chronic cough - defined as a daily cough for more than 3-4 weeks - is one of the most common symptoms in childhood. While most children with cough do not have a serious illness, coughing can be troublesome and difficult to treat. (Jongste, 2003) Coughing in children can be troublesome and can have a big impact on a child's sleep, school performance, and ability to play. Similarly, it may disrupt the sleep of other family members and interfere with teachers in the normal course of study. (Shields, Bush, Everard, Mckenzie, & Primhak, 2007)

Babies and children suffer from nausea and vomiting. Doctors usually encounter various difficulties in dealing with these problems because of their similarities. (Abu Naser & ELhaleem El-Najjar, 2016) Acute diarrhea accounts for 1.8 million deaths annually in children under the age of 5, or approximately 17% of all pediatric deaths worldwide. Even in developed countries like the US, diarrhea remains a major cause of childhood morbidity, leading to over 1.5 million outpatient visits, 200,000 hospital admissions and 300 deaths each year. (Levine, et al., 2010)

### **Main Text**

Practice shows that very often parents seek the advice of pharmacists for prevention or in the initial stages of the disease. In recent years, more and more parents have been considering the use of herbal medicines for their children for health prophylaxis and for the treatment of latter illnesses. The increased use of herbal medicines and medicinal herbs corresponds to their wide availability in pharmacies, drugstores and other sources. (Petkova, Hadzhieva, & Nedialkov, 2019) This in turn requires pharmaceutical care. In the context of pharmaceutical care, patients are accepted for children in the range of newborns up to 18 years of age. Particular attention should be given to the 0-12 year group, where dosing of medicinal products is specific and often the most critical time providing pharmaceutical care. Children can be classified into the following groups: Newborns - from birth to first month; Babies - children from 1 month to 2 years old; Young children - children aged 2 to 6 years; Children - ages 6 to 12; Adolescents - over 12 years. The pediatric group we are considering is in a period of rapid development,

during which a number of physiological changes occur in the body. The intake of medicines, food supplements and other agents in newborns should be consistent with this fact, as well as the different rate of emptying of the gastrointestinal tract, the degree of drug absorption, renal and hepatic clearance. (Lu and Rosenbaum 2014) This is the cohort that should be handled with care and observation when taking medicines for prophylaxis or treatment. On the part of parents, doctor, pharmacist or other medical professionals. (Georgiev, et al. 2019) Adherence of children to a given therapy or prophylaxis depends on the dosage form, its taste, appearance, type of administration. Of great importance is the experience of parents in understanding the benefit / risk of medicinal products. (Liu, et al. 2014) In pediatrics, medicines are also often used outside the indications described in the summary of product characteristics - the so-called "Off-label" use.

The dosage forms used in pediatrics should be tailored to the needs of children in terms of age, weight, physiological condition and treatment requirements. The right dosage form is key to achieving the right dose and proper dosing, reducing the risk of medication errors, increasing adherence to therapy and leading to good therapeutic results. (Batchelor and Marriot 2013)

### **Features of dosing of medicinal products in children**

The majority of pediatric doses are calculated on the basis of body weight by multiplying the child's weight by the recommended dose (in grams, milligrams, milliliters, etc.) of the respective medicinal product. However, in children whose weight is significantly different from normal body weight - for example, at obesity, the dose is calculated on the basis of ideal weight. Errors when dosing medicines in children are common and usually occur at the time of prescribing or at the time of administration. Due to the need to recalculate the dose, to dissolve it and to prepare the finished dosage form, a significant part of the preventable errors are those associated with ten or ten times the dose deviation. Dosing error can also occur in a home environment. (Yin, et al. 2010) Studies in the United States show that many parents make mistakes when they need to measure or calculate a dose of paracetamol for their children. (Li, Lacher and Crain 2000) Another problem is that household spoons are often used to measure the amount of medicine needed instead of the measuring spoon / cup / syringe, which results in incorrect doses.

### **Pharmaceutical care in some of the most common childhood disorders**

The role of the pharmacist in pharmaceutical care in children with high fever or pain is related to advising parents on the choice of drug, the

correct dosage and the route of administration. Consideration should be given to the means of dispensing the medicines and to recommend the factory-fitted measuring cups, spoons and syringes, not household utensils, as this will lead to inaccuracies and potential harm to the child. (Georgiev, et al., 2019)

### Materials and methods

A representative, anonymous and voluntary online survey was conducted in the period April 2019 – September 2019. It included 158 people, assistant and master pharmacists. The online questionnaire form is made with the help of Google forms. It uses its own tools - a questionnaire consisting of four panels. The first panel consists of questions related to the demographic characteristics of the respondents - gender, age, education, place of residence, medical specialty. The second panel is related to the supply, release and use of immunostimulating products in pharmacies in Bulgaria. The third and fourth panels are from 11 questions each. These panels address attitudes and barriers to pharmaceutical care. For every question is used the 5-point Likert scale.

Statistical data processing was performed using the software product SPSS v.17.

Pharmacists of different ages (Fig. 1) with different professional experience (Fig. 2) were interviewed.

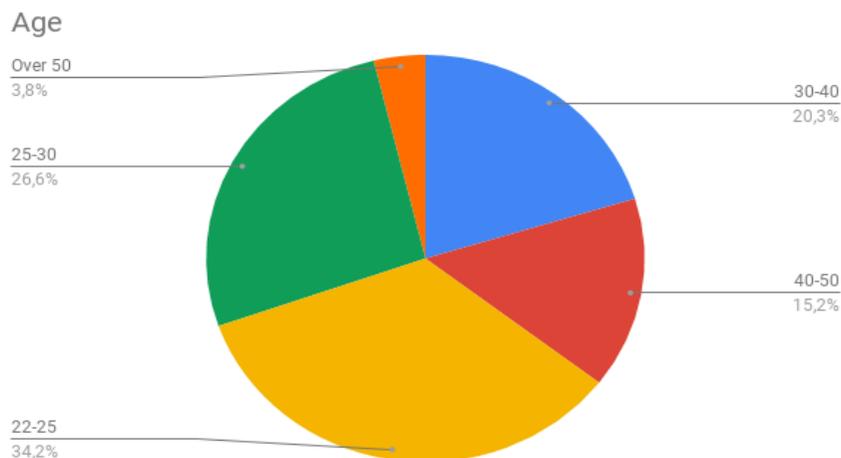
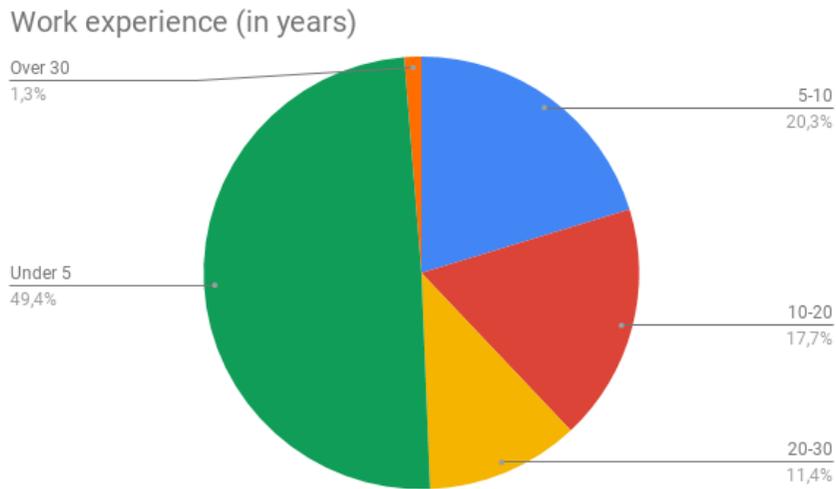


Figure 1



*Figure 2*

Pharmacists from different regions of the country were interviewed. Most of the respondents were from the city of Plovdiv (82 respondents), which is the second largest city in the country. 28 of the respondents are from the capital - Sofia.

Pharmaceutical care is important for many of the surveyed pharmacists. 88 people completely agree with the opinion that the provision of pharmaceutical care brings them professional satisfaction, and 64 agree with this statement - Fig. 3. In Fig. 4 shows that according to 148 respondents one of the pharmacists' main priorities is to provide pharmaceutical care.

### Pharmaceutical care gives me professional satisfaction

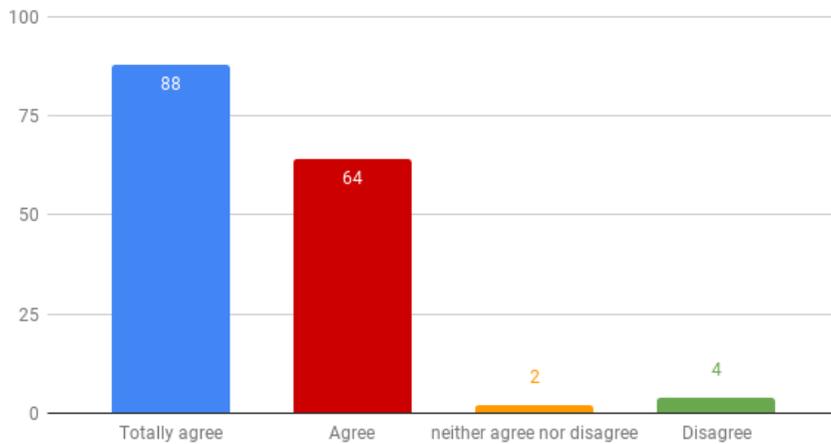


Figure 3

### I think a pharmacist's top priority and responsibility is to provide pharmaceutical care when it comes to children

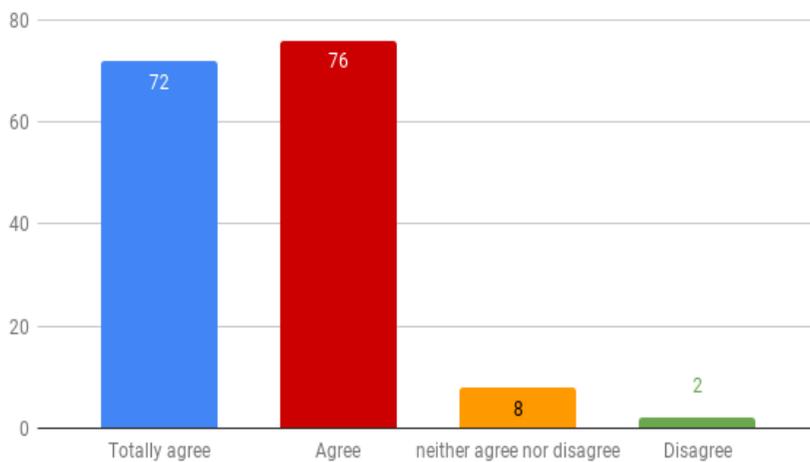


Figure 4

Figures 5 and 6 make it clear that, according to the surveyed pharmacists, the provision of pharmaceutical care will help improve the health of children and their parents' knowledge on the one hand and, on the other, increase parents' confidence in pharmacists.

I think pharmaceutical care will improve the health of children and the awareness of their parents

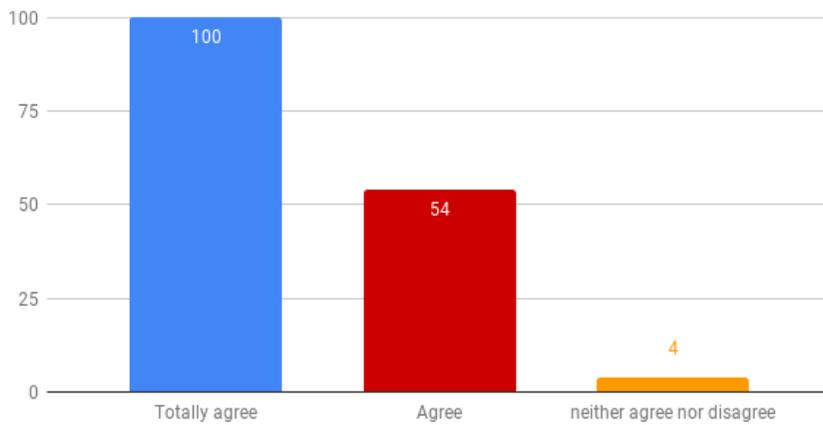


Figure 5

I think that providing pharmaceutical care will increase parents' confidence and appreciation for the pharmacist

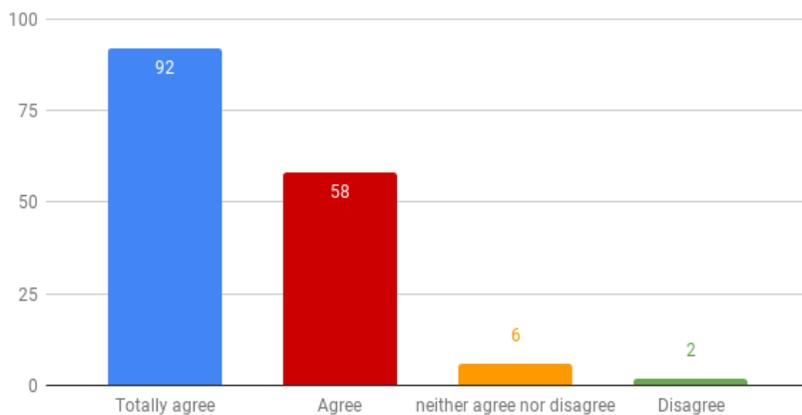
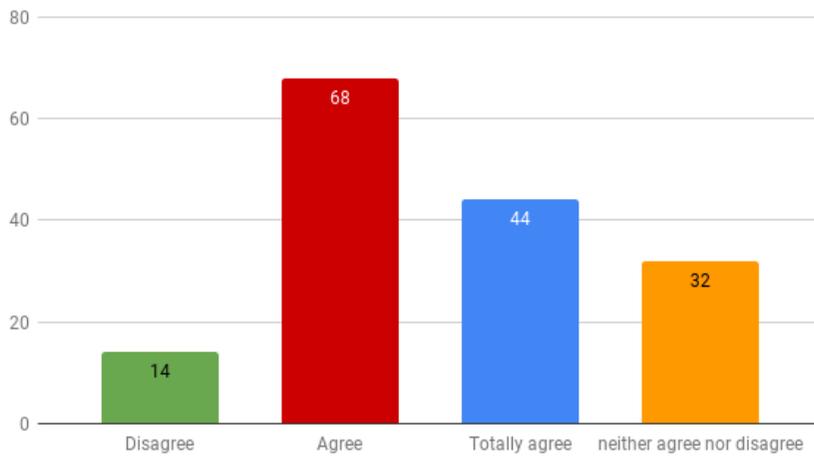


Figure 6

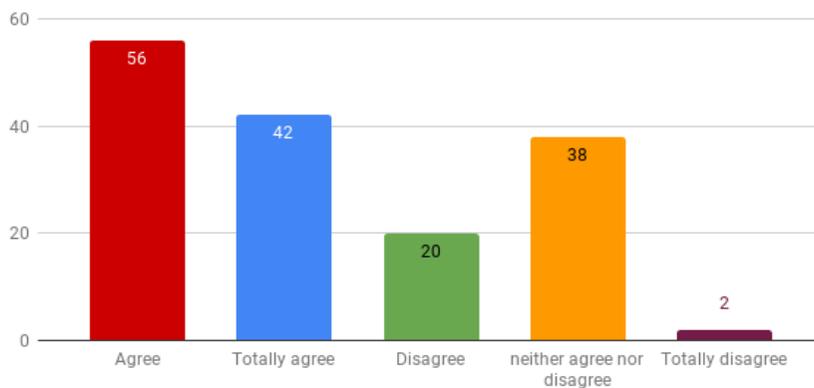
At the same time, pharmacists in Bulgaria are clearly aware of and outline some of the major barriers to pharmaceutical care. According to 112 of the respondents, the main problem is the lack of sufficient time. (Fig. 7), and on the other hand 98 of the respondents cited the lack of a separate place in the pharmacy for providing pharmaceutical care (Fig. 8).

### Lack of time



*Figure 7*

### Lack of a special place in the pharmacy to provide pharmaceutical care



*Figure 8*

Big part of the pharmacists also face difficulties with the parents. Figure 9 and Figure 10 show the results that pharmacists have difficulty communicating with parents, and also a reluctance of parents to listen to the advice of professionals.

### Lack of effective communication between pharmacist and parent

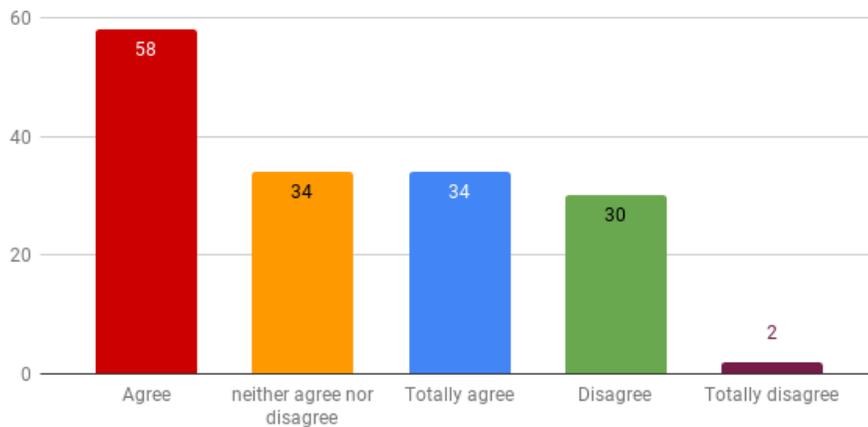


Figure 9

### Reluctance on the part of the parent to accept pharmaceutical care

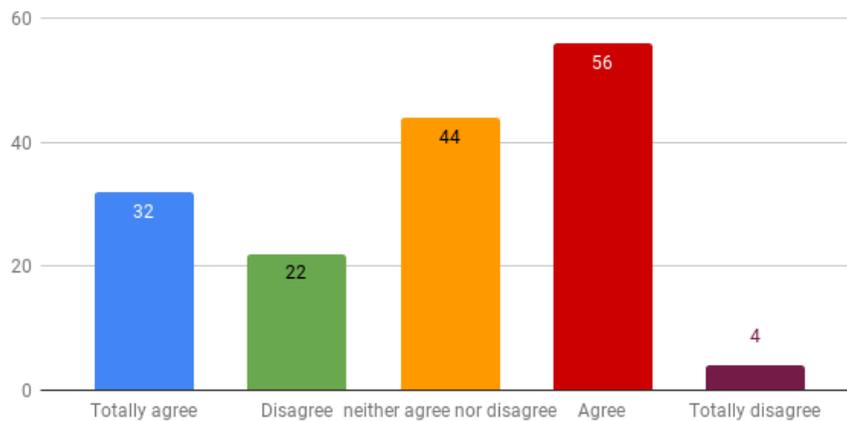


Figure 10

Significant self-criticism was noted among the respondents. More than 35% of respondents were concerned about consulting a risk group of patients, such as pediatric patients. (Fig. 11). In Figure 12 we can see that over 30% of the respondents believe that the current knowledge and skills are not enough to provide quality pharmaceutical care. This is due to the lack of additional training modules to support the professional development of pharmacists (Figure 13).

I am anxious to take risk and responsibility for treatment outcomes in a vulnerable group of patients, such as children.

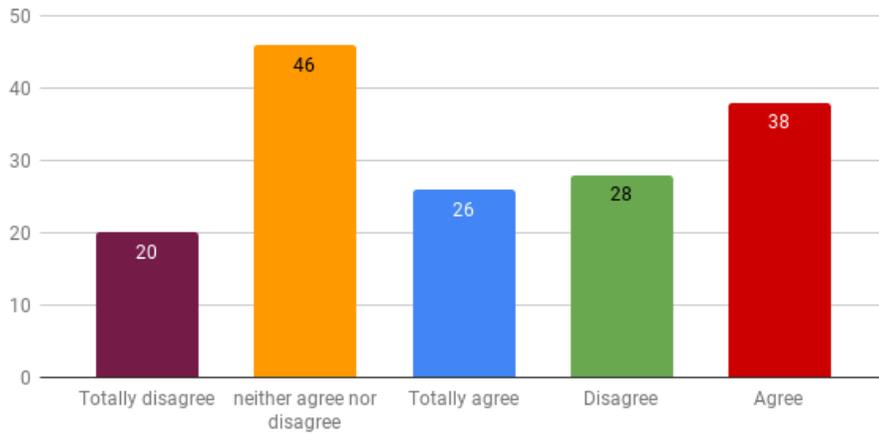


Figure 11

I think that pharmacists' current knowledge and skills are not enough to provide effective pharmaceutical care.

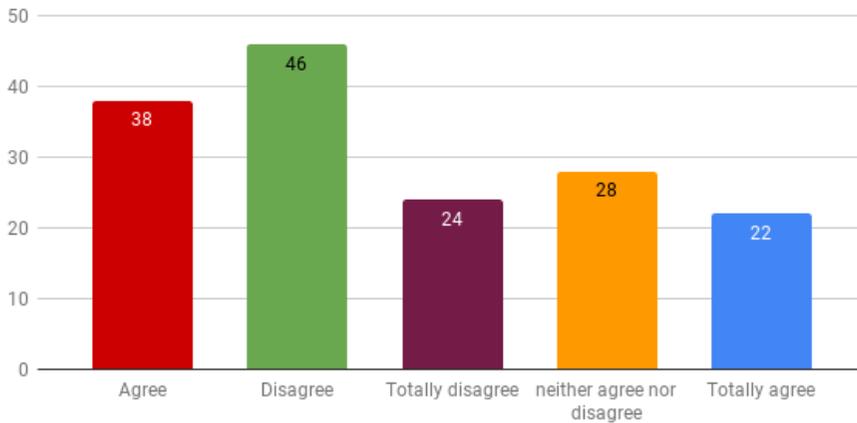
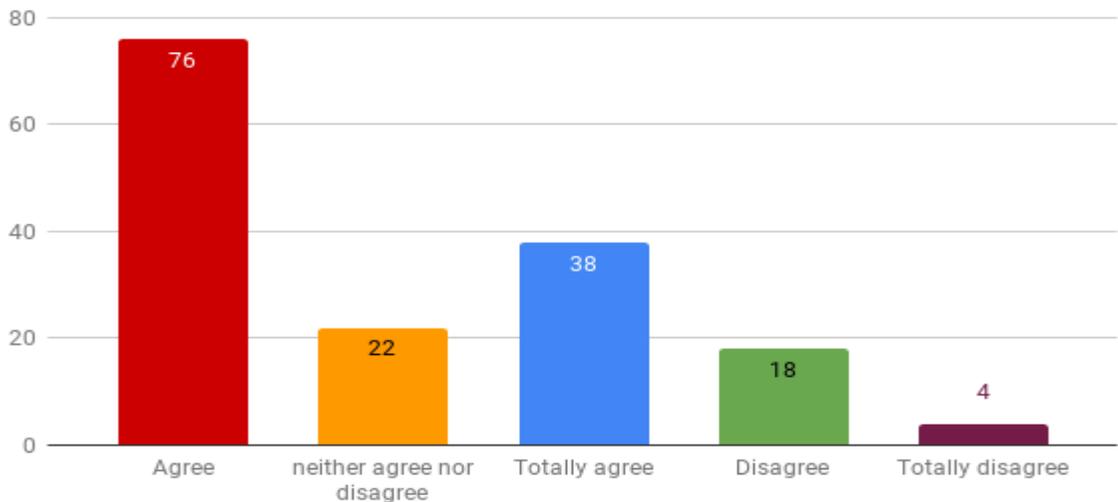


Figure 12

## Lack of further training in pharmaceutical care for children



*Figure 13*

### **Discussion**

The literature review on the topic shows that building children's immunity is a long process. Because the immune system is still immature in childhood, parents often resort to the use of immunostimulants. Pharmacists and the pharmaceutical care they provide play an important role in the selection of immunostimulants. Our research on research on the topic worldwide has made us realize that no such research has been done in Bulgaria. This is the main reason to embark on this project, part of which is the role of the pharmacist in protecting children's immunity. The lack of sufficient data on the topic in our country is both a problem and a challenge for our team. Our idea is to continue working in this direction, to collect new and new data so that we can develop a proposal for a national program for protection and strengthening of children's immunity in Bulgaria.

### **Conclusion and Policy Recommendations:**

According to a study, in most pharmacies, patients have free access to OTC products and supplements. However, the results show that patients' confidence in the pharmacist is increasing. When choosing immunostimulants, parents trust the recommendation as much as the doctor and the pharmacist. This increased confidence, in turn, obligates the pharmacists to be trained in this field. That is why we recommend organizing educational modules for pharmacists to provide pharmaceutical care for the prevention of childhood immunity. We also recommend organizing seminars

for parents to raise their awareness of the benefits and methods of immunostimulation. It would be advisable to develop a model for the application of a comprehensive immunostimulatory program in pre-school and primary school children for prevention.

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# **Effects of The Socio-Educational Environment On the Performance of the Students of the Grammar Schools of Agboville**

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## **Abstract**

This work aims to study the influence of the socio-educational environment on student performance. It seeks to identify the scope of the relationship between variables or dimensions of school climate and academic performance. From 227 students and 36 public and private high school educators and colleges from the city of Agboville, we assessed their perception with the multidimensional assessment scale of student well-being in schools by Guimard et al., (2014). Multivariate regression analysis and cross-tabulations of variables have elucidated the interactions between a person's behaviors, individual characteristics, and the environment in which they evolve. The data collected showed that school performance depends on the feeling of security, the learning conditions, the state of the teacher-student relationship, the overall satisfaction of students and their well-being in the school environment. This study proves that the best academic results of learners are intimately linked to the establishment of a quality socio-educational environment.

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**Keywords:** School environment, well-being, motivation, performance.

## **Introduction**

School climate is the term used today to refer to the quality of life and the daily atmosphere in a school. Studies continue to confirm that it plays an important role in the students' success, and motivation to learn. Thus, they establish a causal chain in which the perceived climate is at the interface of the objective environment and school motivation. Thiébaud (2002) emphasizes that the school climate refers to the quality of life and communication perceived in a school. The school climate is therefore multifactorial and must be seen as the result of a complex process. For Maurice and Montégut (2016), There are several scales that measure the

atmosphere, the ambiance, the climate in a classroom, but it is only the climate in a classroom that plays a very important role in success. Research has shown that the three most important factors for a student to learn are: time spent on task, feedback and retroactive effects received and finally the learning climate.

Indeed, research has made it possible to highlight a strong link between the school climate, the learning quality and academic success. Consequently, positioning oneself in relation to the school climate amounts to addressing fundamental questions linked to “the construction and transmission of knowledge” (Debarbieux et al., 2012). Another aspect of school performance is the ability of a school, not only to achieve but exceed its objectives (Hoy and Miskel, 2001). For Burušić et al. (2016), the main objective of education is to reduce education inequality and achieve equity in education or whether education should target excellence. Thus, it has been shown that the favorable characteristics of schools contribute better to the improvement of disadvantaged students (Kyriakides, 2004), thereby increasing the academic success of all the students in a school. This leads to excellent results and reduces differences between students, which leads to equity in education (Burušić et al., 2016).

Several approaches make it possible to highlight the links between the socio-educational environment and performance. Baker et al. (2003) sought to theorize the impact of the school environment on children development. Inspired by Bronfenbrenner’s ecological approach to development (1979) and self-determination theory by Deci and Ryan (1985). The authors consider that schools function as psychologically positive environments when they respond appropriately to the developmental needs of students. These beliefs, in turn, affect student engagement and participation in school. Finally, drawing on the theory of self-determination which stipulates that individuals have three basic needs - autonomy, competence and social belonging (Deci & Ryan, 1985), the authors consider that schools offering students the opportunity to meet these needs can be considered as psychologically favorable environments.

With socio-constructivism, many pedagogical approaches were born to encompass several parameters that come into play in the learning process, in particular with the work of (Bandura, 1997) and the multivariate approach (Lubart, 2003) that constitute theories which make it possible to envisage learning in a holistic and interdependent approach, where cognitive aspects meet emotional, physiological, environmental ones.... Motivation does not depend on the subject or the situational alone, but it results from their interactions.

### **What is the issue of this work?**

Faced to the great challenge that is to limit failure or dropout as much as possible and to promote quality school, it seems important to look into this subject.

It is vital to dwell on this problem of school performance because it involves the competitiveness of our education system, a guarantee of harmonious development.

The research question is: does the school environment have an influence on student performance?

### **Methodology**

#### **General objective**

The objective of this study is to establish the relationship between the school environment and students' performance.

#### **Specific objectives**

To achieve this main objective, several specific objectives need to be stated. These are:

- determining the acceptable conditions that can improve school performance from the point of view of school actors;
- to study the relationship between the atmosphere of security, collective serenity and the teaching-learning process;
- tell the link between the academic satisfaction of the school actors and students' results.

#### **General hypothesis**

There is a relationship between the components of the school environment and students' performance.

#### **Specific hypotheses**

- The perceived well-being of students promotes their performance.
- Non-violence positively influences the school climate and lead to learners performance.
- Students' satisfaction leads to their motivation, that influences their results.

### **Operationing.**

#### **Independent variables**

First independent variable: learning conditions

The variable "learning condition" refers to the learning atmosphere, the comfort within the school and in the classrooms, lighting level, ventilation and the adequacy of the rooms, the number of students ... It also includes educational and supervision practices.

Second independent variable: relationships of the actors

It is a question of detecting the level of exchanges between students and teachers on one hand, between students and supervisors on the other hand and finally among students.

Third independent variable: feeling of security

The “safety of the actors” is based on the protection of properties and people within the school, the protection of the school environment in relationship with demonstrations during course, disruptions and finally to altercations between students, that can lead to communal conflicts.

Intermediate variable: motivation

It is based in our work on the overall satisfaction perceived by the students.

**Dependent variable: school performance**

The dependent variable is the average at the end of the first term during the school year 2018-2019.

**Population**

The population concerned by our study is made up of the internal actors in the various public and private grammar schools. For this study, students and supervisors will be our target population and our data has been collected from 227 students and 36 supervisors. Table 2 shows the distribution of the students surveyed according to their school, classroom, age and gender. The population surveyed is made up of 227 supervisors, i.e. 126 girls (55.51%) and 101 boys (44.49%) aged 16.13 on average and 36 educators. These students go to public (184 or 81.06%) and private (43 or 18.94%) schools in the city of Agboville. The supervisors, too, are from the city’s public and private grammar schools. The largest number of students are those of form 4 (104 students, or 45.81%) and those of advanced level (64 students, or 28.19%).

**Sampling technique**

The technique of random stratified sampling with one element per stratum was used. The stratified random samples constitutes the final sample which will be used for this study. Sampling in the students population gives a number of 50 students and the educators population remained the same (36).

*Table 1: Distribution of the students surveyed according to their school type, class, age and gender.*

Type d'établissement	1-public	2-privée					
	184	43					
	81,06 %	18,94 %					
classe	1-6e	2-5e	3-4e	4-3e	5-2nde	6-1ère	7-Tle
	17	12	13	104	7	10	64
	7,49 %	5,29 %	5,73 %	45,81 %	3,08 %	4,41 %	28,19 %
âge	-12	12 à 14	14 à 16	16 à 18	18 à 20	20+	
	1	26	72	67	37	24	
	0,44 %	11,45 %	31,72 %	29,52 %	16,30 %	10,57 %	
sexe	1-M	2-F					
	101	126					
	44,49 %	55,51 %					

## Data processing techniques and tools

### Procedure

For the students, we have chosen to classify them according to their level: from form 1 to Advanced level with a stronger emphasis on the students of form 4 and A level. It will therefore be a case of performing a psychometric analysis of the impact of the school climate on students' performance. The Variables related to the socio-economic status of parents and students residential conditions are not used.

### Questionnaire

The tool covers many aspects related to school climate, the problems that may exist and supervision practices. It offers both a detailed analysis and an overall vision of the school.

## Data processing

### Descriptive analysis

The descriptive analysis is done by flat sorting and makes it possible to count the numbers. For each item, the responses are distributed on a 4-points scale and these different intensities will be considered as clues that will count. It will describe the students' responses and identify the elements of satisfaction and dissatisfaction concerning school life.

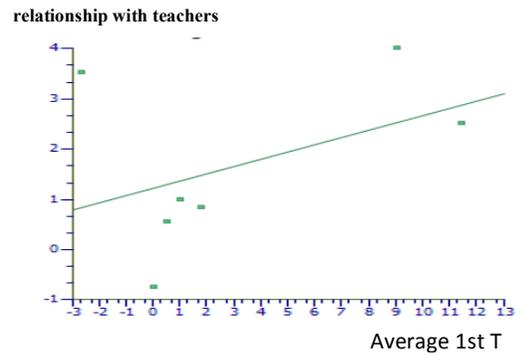
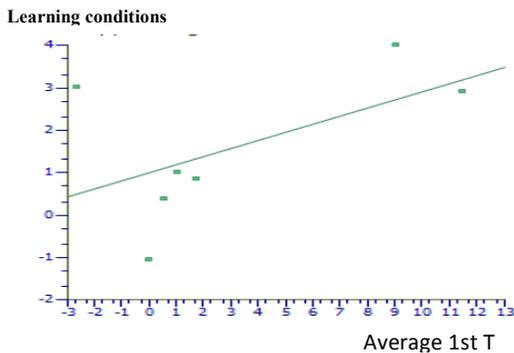
## Multilevel analyzes

In the case of a multivariate relationship, multiple regression is used to determine the value of the different coefficients which give the value of each factor on the dependent variable (academic performance). The data processing required the use of two statistical software: XLSTAT 2019 for sampling and descriptive analysis and SPHINX IQ2 for crossovers between the different dimensions of the variables and multiple linear regression.

## RESULTS

**Hypothesis 1:** *Perceived well-being of students promotes student performance*

The explanatory variables used here are the learning conditions, the relationships with teachers, then the educational practices and supervision.



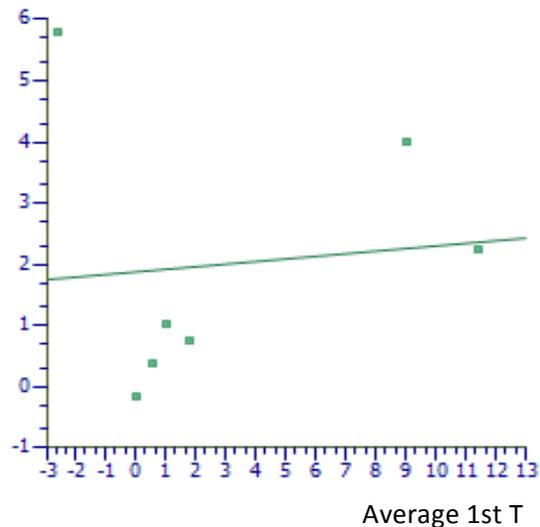
Crossing of "learning conditions" with "Average 1st T"

Crossing of "relationship with teachers" with "Average 1st T"

Correlation = 0,55 (The relationship is not very significant)

Correlation = 0,43 (The relationship is not very significant)

### Educational and coaching practices



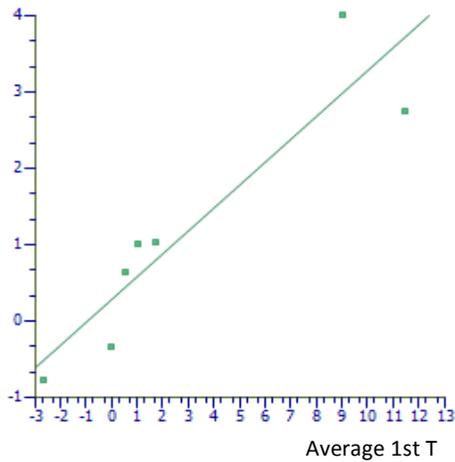
Crossing of "Educational and coaching practices" with "Average 1st T"  
Correlation = 0,10 (The relationship is not significant)

- link of the question "Educational practices and supervision" with the average question 1st T "
- Correlation = 0.10 (The relationship is not significant)
- When crossing with the dependent variable:
  - the variable "learning condition" is weakly correlated with this variable ( $r = 0.43$ ). Its action is insignificant;
  - the variable "relationship with teachers" whose correlation coefficient  $r = 0.28$  has a relationship that is not significant;
  - for "educational and supervisory practices", the correlation coefficient is equal to 0.10 so the relationship is not significant.

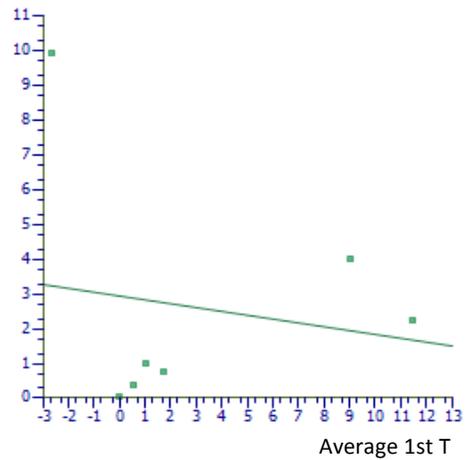
### **Hypothesis 2:** *Non-violence positively influences the school climate and results in learners' performance*

The feeling of security in the school environment is essentially based on the perception of violence by students in their relationship with peers. Other elements that could impact the security climate are also signified by the variable "problem at school".

### Security feeling



### Problem at school



Crossing of "security feeling" with "Average 1st T"

Correlation = 0,92 (The relationship is very significant)

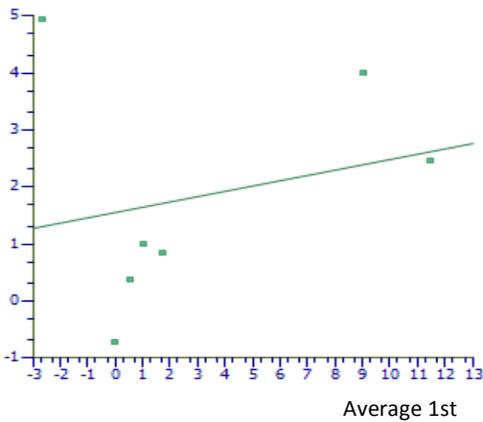
Crossing of "Problem at school" with "Average 1st T"

Correlation = -0,16 (The relationship is not very significant)

The variable “feeling of security” has a very significant correlation with the variable to be explained. The correlation coefficient is equal to 1. As for "problems present at school", there is an insignificant relationship with the dependent variable "mean 1st T", the value of  $r$  being -0.45.

**Hypothesis 3: Student satisfaction brings about their motivation, which have influences**

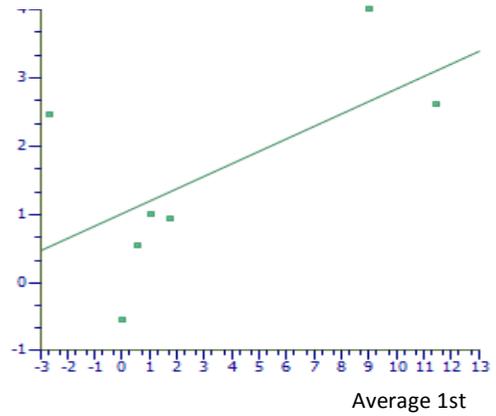
**Class satisfaction**



**Crossing of "Class satisfaction" with "Average 1st T"**

**Correlation = 0,24 (The relationship is not significant)**

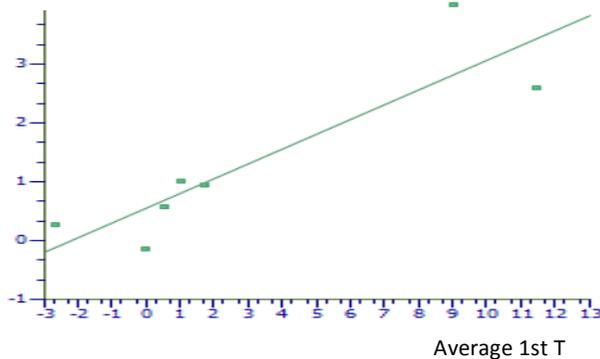
**School activity satisfaction**



**Crossing of "School activity satisfaction" with "Average 1st T"**

**Correlation = 0,62 (The relationship is significant)**

**Exam satisfaction**



**Crossing with "Exam satisfaction" with "Average 1st T"**

**Corrélation = 0,89 (The relationship is very significant)**

**Multivariate analysis**

Among the eight dimensions of the school environment, inserted in our analysis 7 variables have no influence and do not contribute to the explanation (at 5% threshold). These are educational and supervision practices, satisfaction with school activities, learning conditions, class satisfaction, assessment satisfaction and the problems present at school. On the other hand, only one variable contributes to the explanation (at the 5%

threshold). It's the feeling of security. We note that the school performance: the 1<sup>st</sup> term average partly depends on the feeling of security. Average 1st T =  $-0.36 + 2.83 * \text{feeling of security}$

## **Discussion**

### **Validation of hypotheses**

The first hypothesis reads as follows: the perceived well-being of students promotes their performance. The data from our survey confirms this hypothesis because the characteristic items of the dimensions "learning conditions", "relations with teachers" and "educational and supervision practices" have scores that indicate the inadequacies of the school environment.

The second hypothesis stipulates that the valuation of non-violence positively influences the school climate and impact learners' performance. The "feeling of security" is the variable that has a very significant relationship with school performance. We can attest that this hypothesis is also confirmed. Indeed, violence creates a feeling of unease, annoyance and demotivation because fear has become established in the habits of the weakest students. According to the third hypothesis, student satisfaction leads to their motivation which influences their school results. In other words, students school satisfaction is a major factor in motivating students to seek good results.

### **Validation of reference theories**

This discussion will have all its meaning if we compare our results with those of other researchers and show their conformity with the reference theories used.

### **Validation of the socio-constructivist theory**

According to Galand (2011), the quality of the relationships with the educational team and the perception of the school climate could explain the variations in violence at school. The child or adolescent needs the presence of adults to flourish and develop. "The quality of the relationship that the students felt they have with the teachers influences the number of attacks they are victims of, their perception of the level of violence, their beliefs and attitudes towards the use of violence, their asocial behavior and the development of pro social behavior.

### **Validation of the self-determination theory**

This work has shown, particularly in the context of the self-determination theory (Deci and Ryan, 2002) that the value of establishing in the classroom a climate that supports students' competence and their

autonomy promote adaptive behaviors. A teacher who supports his students autonomy, is flexible, offers choices to students, retains and enriches their ideas, encourages their initiatives, uses language that is truly informative for them.

As Laguardia and Ryan (2000) indicate: “A classroom that encourages the exercise of autonomy, the feeling of competence and interpersonal affiliation is a classroom which engages the students more, promotes their success, and increases their psychological well-being”.

## Conclusion

The influence of the classroom, the quality of school life, the students' well-being, the deterioration of school environment, recurring problems in the school environment, the educational and supervision practices impact school results. These have been evaluated through a multivariate analysis based on multiple linear regression and cross-comparison with different variables. It has been established that school performance is mainly influenced by secure school environment with a significant effect on the relationship between actors and learners' overall satisfaction. The results obtained at the end of this research show that there can be no quality academic performance if ideal conditions for learning, well-being and overall student satisfaction are not gathered.

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## **New Notion of « Sustainable Littoral » in Morocco: A Case of the Rabat-Sale-Kenitra Region**

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### **Abstract**

The Moroccan littoral constitutes of a particularly sensitive and complex geographic space, which is undergoing various and increasing pressures. Through its diversity and its ecological potential, it requires more attention in terms of its protection. Due to the significant importance of this space, it is coveted for many activities and forms of development but the process of managing the space remains difficult and calls for question. This paper aims to provide an overview of the degradation of the Moroccan littoral, particularly in the region of Rabat-Sale-Kenitra. It also provides some management measures more suited for the intrinsic characteristics of this space that can be taken into account to guarantee a sustainable littoral.

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**Keywords:** Moroccan littoral, Rabat-Sale-kenitra region, Pressure, Degradation, Sustainable.

### **Introduction**

With a littoral of around 3,500 km, developing on two Atlantic and Mediterranean maritime facades, the Moroccan littoral occupies a very important place at the level of the entire coastline of the African continent (Hannou, 2003). Thus, its importance in our environment and its sensitivity to the various interventions which can take place calls for the need to protect and manage it effectively (Tlili & Ayari, 2006). This is because the hypersensitive coastal environment shelters more than half of the Moroccan population (MEMDD, 2019).

The concept of sustainable development is a widely recognized benchmark today, and Moroccan laws and public policies tend to conform to its principles. The coastal zones are physically and ecologically very sensitive to the various projects, carries a socio-economic stakes, difficult to harmonize, and their development is inspired by a particular concept known as Integrated Coastal Zone Management (ICZM). As a result, Morocco adopted on October 15, 2015, Law No. 81-12 on the littoral, which will help to structure the integrated management of these areas in Morocco. The

purpose of this law is to define the principles and rules for the protection and sustainable development of the littoral (Aouich, 2016).

As in all Mediterranean countries, the Moroccan littoral tends to become an area that is over-occupied and over-used due to urbanization, industries, ports, fishing, and leisure activities. Although it is often excessive, this occupation leads to the degradation of the physical environment and in mortgaging any possibility of better management of coastal and marine space in the future (Laouina, 2006). This is particularly the case for the littoral of the Rabat-Sale-Kenitra region, which is a vulnerable space and leads to significant forms of both natural and anthropogenic pressure.

Hence, this paper aims to provide answers to the following question: What is the sustainability for the littoral of the Rabat-Salé-Kenitra region as a fragile environment intensely occupied by human?

To achieve this objective, it is first necessary to establish a diagnosis of the littoral state of the region of Rabat-Sale-Kenitra through an inventory and an evaluation of the degradation process as well as the damage that it suffered. After then, a management strategy should be drawn up which will be adopted by the actors present. Thus, it is likely to be inserted in an orientation not only ecological but socially sustainable.

### **Study Methodology**

The methodology used in this study is based on documentary bibliography and the "DPSIR" model (Figure 1) which was used to assess the health of this coastal ecosystem.

The DPSIR model, advocated by the Organization for Economic Cooperation and Development (OECD), is one of the frameworks which are based on the concept of causal chains for data synthesis. Thus, it links environmental information using indicators of different categories (driving forces, pressure, state, impacts and responses) (Saddik et al., 2017). Tonneau et al. (2009) opined that one of the greatest advantages of the DPSIR model is that it allows indicators of different kinds to be linked without resorting to an aggregation system or without having perfect knowledge of causalities. The DPSIR model organizes the following sequence: human activities - economic sectors, demography, etc. which constitutes the driving forces of the system represented.

These activities put pressure on the environment in particular, and the state is therefore affected. Impacts are linked to ecosystems and human health due to changes in the state. Putting into consideration the profile of these different categories, particularly impacts, corrective responses from society are developed and implemented. Whether regulatory, economic or voluntary, they in turn influence the configuration of the system.

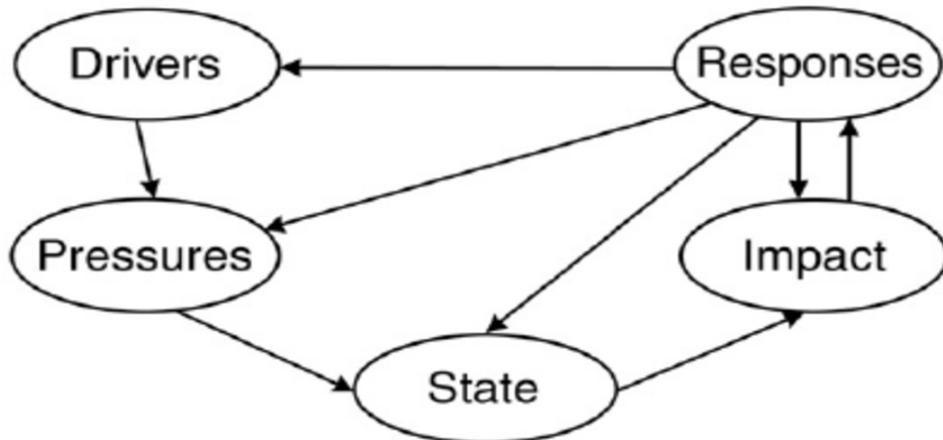


Figure 1. The DSPIR model (Saddik et al., 2017)

### **The Littoral of the Rabat-Salé-Kenitra Region: A Fragile and Threatened Natural Milieu Potential and Strategic Natural Resources**

The littoral of the Rabat-Salé-Kenitra region stretches for about 165 km (Snoussi, 2020). Its geographical position on the North Atlantic littoral of Morocco, its geological and topographic structure, and its water resources, in addition to its favorable regional economic context, represent major strengths and the factor that triggered the lusts and interests of public and private economic actors.

The region's littoral has a Mediterranean climate with a maritime influence. It is mild, moderate, and rainy during the winter, while it is humid and temperate during the summer with Chergui days. However, it is distinguished by an apparent variability (minimum temperature of 4 °C and maximum of 40 °C). As for the annual rainfall, it varies between 900 mm and 300 mm (Snoussi, 2020). The average rainfall in the coastal area (Kenitra) is 537 mm / year (Motib, 2019). Favored by the proximity and the influence of the disturbances of the North Atlantic, this part of the space has enormous underground and surface water resources (El Kehal, 2014).

The littoral conceals an invaluable wealth of natural ecosystems (wetlands, forest ecosystems, littoral cliffs, dune areas, etc.). Furthermore, strong tourist potential and in particular a strong attractiveness of littoral areas can offer a tourist development centered on nature and culture products.

The region's littoral has significant hydraulic potential and significant water mobilization infrastructure, especially dams. It contains two basin agencies: the Sebou Hydraulic Basin Agency and that of Bouregreg and

Chaouia which centralizes the assessment, planning, management, and protection of water resources at the scale of the two basins.

### **A Spatially Limited Mid Generally Experiences a High Usage Pressure A Densely Populated Littoral**

The Rabat-Sale-Kenitra region has become, in the space of a few decades, a territory with strong attraction, especially based on its littoral area. It comprises of majority of the demographic, economic, administrative, and cultural flows of the Kingdom of Morocco. This development is mainly due to the administrative weight of the city of Rabat, as the capital of Morocco, to its university vocation and to its role as a communication node (Matnuhpv, 2019).

The population of the littoral of the region of Rabat -Sale- Kenitra has not ceased increasing ever since the middle of the last century. According to the latest general population census (RGPH, 2014), the Rabat-Sale-Kenitra region has 4,581 million inhabitants, or 13.53% of the country's total population. Hence, this ranks it 2nd place after the Casablanca-Settat region (Boui, 2018). The littoral (Province of Kenitra and Prefectures of Rabat, Salé and Skhirat Témara) alone comprises of 3.2 million inhabitants, which represents 70% of the region's population (HCP, 2016) (Figure 2).

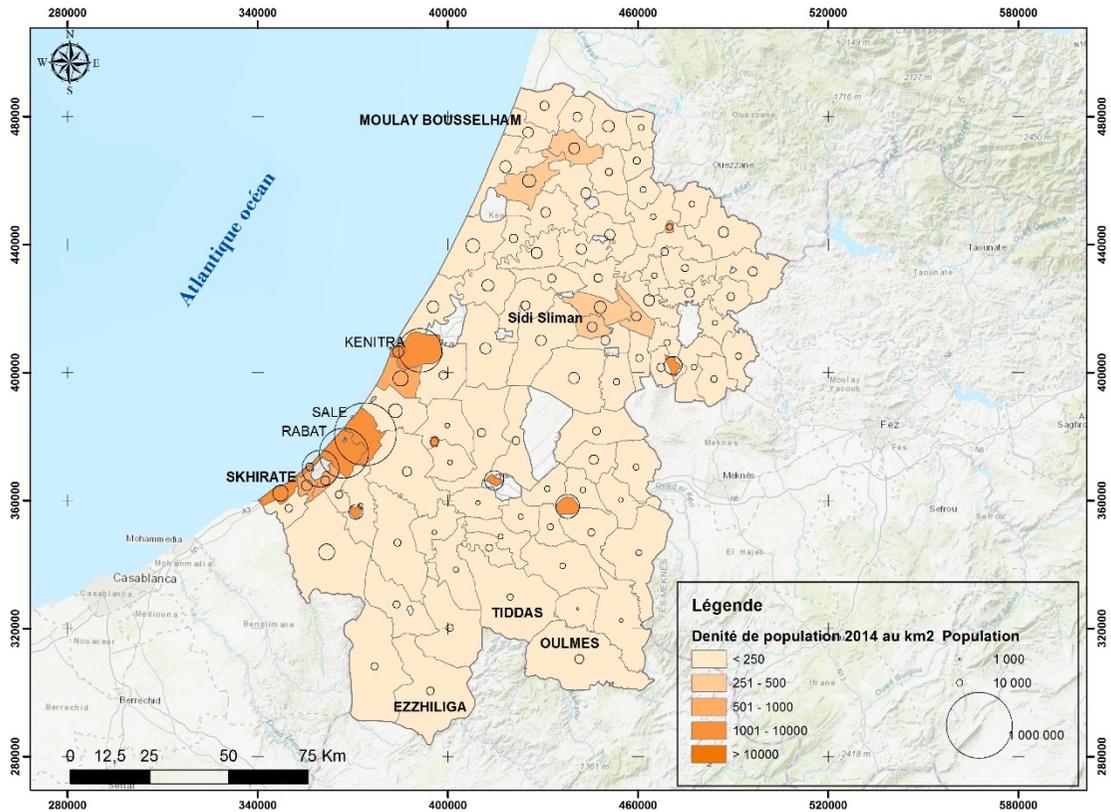


Figure 2. Population by municipality and densities (Source: general population and habitat census 2014, HCP)

The region's average annual growth rate over the 2004-2014 period is 1.31%, which is very close to that recorded at the national level (1.25%). However, this regional average hides quite significant disparities between the provinces and the prefectures of the region, but especially between a highly populated and urbanized coastal strip and a rural and less densely populated hinterland (Snoussi, 2020).

### A Highly Urbanized Littoral which results, in particular, to an Anarchic Urbanization

The Rabat-Sale-Kenitra region is also one of the most urbanized regions in the country with a rate of 73.6% (3rd of the 12 regions) (HCP, 2016). At the littoral level, the urban network is characterized by a large grouping, which largely dominates the urban framework of the region, i.e., the Kenitra-Témara axis which comprises of more than 70% of the urban

population of the region. The municipality of Rabat is fully urbanized, the municipalities of Sale and Skhirate-Témara are also almost entirely urbanized (respectively 93.2% and 93.1%), and the province of Kenitra has experienced a significant increase in its urbanization rate (+8.7 points between 2004 and 2014) to reach 57.2% in 2014 (Figure 3).

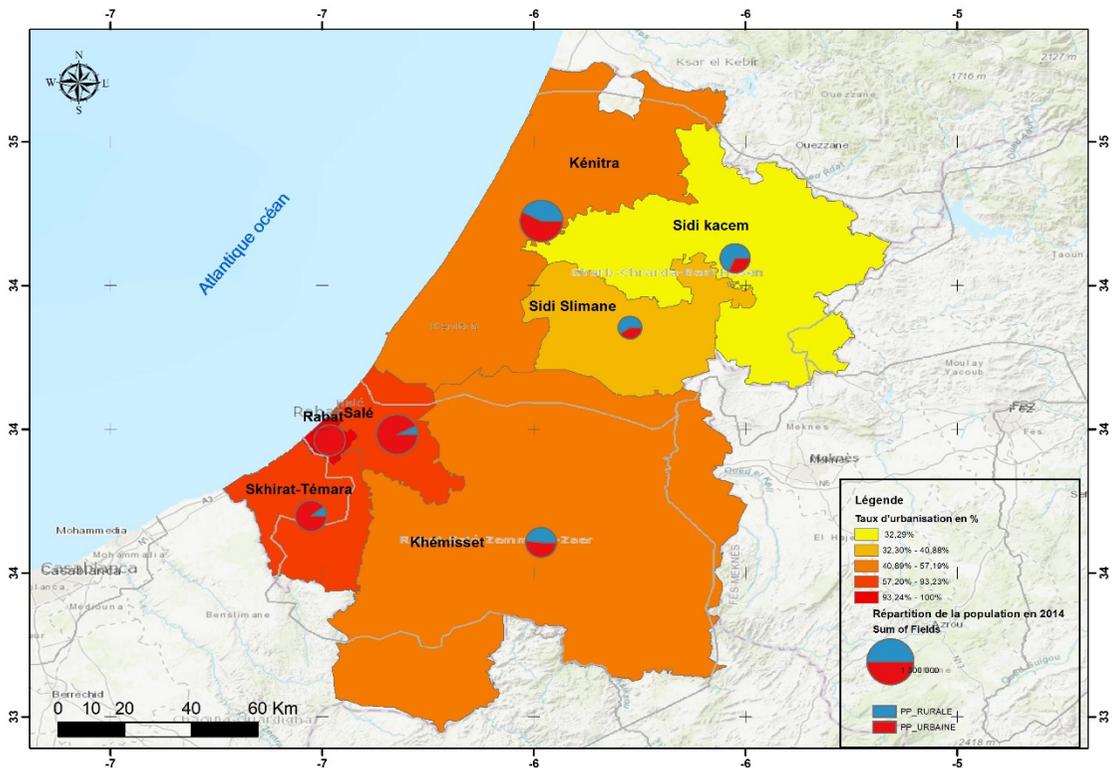


Figure 3. Rate of urbanization in the Rabat-Salé-Kénitra region (Source: General population and habitat census 2014, HCP)

In 2014, the urban population represented 69.8% of the regional population with an average annual growth rate of 2.1% during the intercensal period 2004-2014. This increase occurred at the expense of the rural population, which rose from 11% in 2004 to 10.3% in 2014. In addition to the natural demographic increase, this dynamic is explained by the rural exodus, the creation of new urban centers, and the extension of the urban perimeters of coastal cities.

The main problem posed by the urbanization of the study area concerns the encroachment on sensitive areas, in particular forests, dune areas, areas at risk of flooding and agricultural land, which resulted in the anarchic proliferation of non-regulatory habitat dispersed over all of the region's littoral communities. Thus, this has led to a loss of local potential and consequently the loss of economic value, and it also threatens the security of populations and the balance environment (Motib, 2019).

### **Concentration of Industrial and Tourist Activities**

The littoral constitutes the majority of large-scale industrial and economic activities (Nakkli, 2010). This is particularly the case for the littoral of the Rabat-Sale-Kenitra region which is part of the structuring Atlantic axis of the Moroccan economy. Also, it extends from Kenitra to Safi and includes more than three-quarters of industrial activities and 80% of investments of the sector (such as the food industry, parachemistry, metallurgy, etc.). It should be noted that the region experiences wide disparities between the littoral and the hinterland in terms of industrial activities. Indeed, the world is witnessing a strong polarization of industry along the Skhirate-Témara-Rabat-Sale-Kenitra littoral axis (DGCL, 2015).

Heavy industrial activities are especially linked to the activity of sugar mills, oil mills, paper mills, and cellulose and agro-food units. Most of these industries causes pollution and are preferentially located on the coast itself: either within the ports or in the immediate vicinity of Rabat-Sale-Kenitra. The other components of the industrial fabric are scattered throughout the urban fabric in the littoral zone. Hence, these are units that discharge their pollutants directly into the natural mid (Motib, 2019).

In addition, the region of Rabat-Sale-Kenitra has a very important tourist potential placing it in 6<sup>th</sup> position of Moroccan tourist destination, behind Marrakech, Agadir, Casablanca, Fez, and Tangier. This is with a predominant part of the city of Rabat, which totals almost 80% of the tourist offer in the region (DGCL, 2015).

It is emphasized that the littoral hosts a large mass tourist seaside activity, generally unstructured. The number of summer visitors to beaches in the region is estimated to be at around 618,500 per season with Mehdia, Rabat, Sale, the Nations and Moulay Bouselham having the highest number (Snoussi, 2020).

### **Multiple Environmental Pressures**

The littoral of the Rabat-Sale-Kenitra region has a natural environment and quite exceptional beauty. However, environmental problems linked to population growth, the extension of urban spaces, and the action of man on nature arises acutely and could compromise the sustainable

development of this coastal mid. Indeed, these environmental pressures can lead to disasters endangering collective security and causing direct or indirect damage to populations, property, infrastructure, natural ecosystems, and the economy.

### **The Littoral: A space Threatened by the Uncontrolled Extraction of Coastal Sand**

The littoral of the Rabat-Sale-Kenitra region also suffers from a major problem, which are the degradation of the dunes and the erosion of beaches. Basically, this is mainly due to an ever-increasing demand for construction materials, in particular for sand for the building sector. This increasing demand for sand as a building material has forced users in the construction industry to seek other sources of supply to alleviate the shortage, particularly in the northern part of the country. Subsequently, there has been an improvement from the use of crushing sand to the use of seabed dredging sand (Benmohammadi et al., 2011). Indeed, the high demand, due to the "boom" that construction is experiencing, carries the risk of seriously disrupting littoral ecosystems and those of continental waters.

This demand, estimated at nearly 13 million tonnes, is largely met by levies, often illegal and inexpensive, from beaches and coastal dunes. As a result, many beaches are depleted in sand (Chafik, 2014). For example, the quantity of sand extracted annually in Mehdiya beach (the littoral of kenitra) is approximately 460,000 m<sup>3</sup>. For this reason, Mehdiya Beach has witnessed a decline in the northern littoral between 1997 and 2007 by four meters. The littoral of the Corniche retreated by 0.7 meters, and this decrease corresponds to a sediment deficit of 180,000 cubic meters of sand which is equivalent to 13,000 cubic meters annually (Sogreah, 2011). To take care of the physical stability of the coastline and protect marine ecosystems from the danger of dredging, several precautions should be taken (Hakkou et al., 2016).

Figure 4. Line recoil of coastline (Mehdia-kenitra) (Source: Soghreh (2011))  
Figure 5. Line recoil of coastline (Mehdia-kenitra) (Source: Soghreh (2011))



Figure 4. Line recoil of coastline (Mehdia-kenitra) (Source: Soghreh (2011))

### Pollution and Erosive Phenomena

Environmental pollution has become a legitimate concern in recent years. The littoral fringe undergoes liquid and solid emission of various origins. Domestic pollution constitutes a major problem of the littoral environment. Thus, the territory has shortcomings in terms of connection to the public sewerage network. With the exception of the agglomeration of Rabat Sale and the city of Kenitra where connection rates exceed 90%, the rest of the region has much lower rates. The unconnected centers discharge their wastewater pollutants into the natural environment (Oued Bouregreg, Oued Beht, the coast) (Snoussi, 2020). In particular, the mouth of the Sebou wadi drains all domestic, industrial, and agricultural discharges of the cities of Fez, Meknes, Sidi Kacem, Sidi Slimane, and Kenitra. Oued Sebou and its tributaries are today considered to be among the most polluted wadis in Morocco (Nakhli, 2010).

In addition, agricultural activity, fairly developed in the Gharb plain, induces pollution of groundwater, which manifests itself in particular by the increase in the nitrate content, posing health risks. Hence, the strong agricultural intensification of this plain, based on irrigation and the massive supply of chemical inputs, in particular nitrogen fertilizers, are at the origin of the continuous deterioration of littoral aquifers (Motib, 2019).

The marine environment directly receives industrial liquid discharges and urban domestic discharges from littoral agglomerations. The Kenitra Safi axis comprises of more than 60% of urban discharges and more than 80% of industrial discharges from Morocco (Sofa, 2005). In fact, almost all industries discharge their effluents heavily loaded with polluting products in the open sea without any prior treatment. In the RSK region, discharges of wastewater into Sebou wade pose a threat to the quality of bathing water at Mehdiya beach, located not far from the mouth of Sebou wade. Maritime and in particular port activity also contributes to water pollution (Motib, 2019).

On the other hand, the sandy coasts of the region are highly exposed to erosion. The only studies that have attempted to assess the evolution of the littoral of the region mainly focus on the beaches on either side of the mouth of the Sebou. They showed that between 1963 and 1993, a different development on both sides of the mouth of Oued Sebou was observed. Chlihat beach located north of the mouth showed general accretion while the southern sector, with its two beaches Mehdiya and Sidi Boughaba, were faced with erosion. The importance of the progradation in the North of Sebou and the decline in the South can be explained by the association of many factors, especially the installation of dams on the watershed of Sebou, the extension of the mouth of the Sebou by two dikes to depths of -7m ZH, exploitation dredging works at the mouth of the mouth, and wind transit estimated at 20 m / ml / year which further strengthens the weight loss of Mehdiya beach (Snoussi, 2020).

## **Towards a New Image of a More Sustainable Littoral**



*Picture 1. Sand erosion Mehdia beach 28 February 2018, source : Motib,2019*

The ever-increasing deterioration of the environmental conditions of the littoral is having a hard time being felt. This is not only at the level of ecological balance but, also and above all, at the socio-economic level, particularly on the quality of life of local populations. Sustainability therefore appears to be linked to our ability to manage ecosystems from a long-term perspective. It is necessary, first, to adopt the decree of law relating to the littoral. After then, the region must undertake local actions, which will allow the protection of the coast and the preservation of coastal natural resources. The objectives assigned to this axis of sustainable littoral management are summarized as follows:

### **Reinforcement of Littoral Protection through the Approval of New Law No. 81-12 Relating to Littoral**

The protection of the littoral in Morocco has remained governed by a plurality of fragmentary texts, which is often very old, non-dissuasive, and applied in a non-coordinated manner by the institutions in charge (Menioui, 2007). Faced with these legal insufficiencies, it seems essential for our country to have a legislative text devoted specifically to the littoral. This is with the aim of reconciling the fundamental imperatives of its protection. In a bid to achieve this objective and ensure the sustainable development of the littoral, the kingdom of Morocco adopted Bill 81-12 on the littoral on June 23, 2015 (MEME, 2015).

Consequently, to achieve this objective and ensure the sustainable development of the littoral, the law on the littoral adopts the basic principles

and rules of an integrated management of the coastal zones resulting from international recommendations. Examples include United Nations Conferences on Environment and Development of Rio 1992 and Rio + 20, the 2002 Johannesburg World Summit on Sustainable Development, and regional protocol relating to the Integrated Coastal Zones Management (ICZM) in the Mediterranean, ratified by our country on September 21, 2012. Thus, this entered into force effective October 21, 2012 (MEME, 2015).

In addition, this law which appears among the legislative texts of the legislative program 2012-2016 of the government fits perfectly within the framework of the objectives of the Framework Law on the National Charter for the Environment and Sustainable Development. It sets the fundamental principles of integrated coastal management as a transversal management process involving the simultaneous consideration of different interests in the coast including in particular the systematic consideration of the environment for all decisions affecting this fragile territory. Thus, this law aims to achieve the following objectives:

1. Preserving biological and ecological balances, natural and cultural heritage, historic and archaeological sites, natural landscapes and combating coastal erosion;
2. Preventing the struggle, reducing pollution and degradation of the coastline, and rehabilitation of polluted or deteriorated areas and sites;
3. Planning, in particular, through a national coastal plan and regional coastal plans that are compatible and in perfect harmony with land use planning documents;
4. The involvement of associations, the private sector and the local authorities, concerned in making decisions relating to coastal management;
5. The promotion of a research and innovation policy in order to enhance the coast and its resources

In addition, and in order to achieve the objectives of protection, enhancement and conservation of the coastline to guarantee the balance and sustainability of its multiple functions, the law establishes a national commission and regional commissions with a unifying nature and mobilizer. Thus, this brings together all the national and regional components.

In regard to protection and conservation measures, the law establishes the principle of prohibition to harm the natural state of the seashore. In addition, the law establishes a non-constructible zone, adjacent to the coastline of a width of 100m, calculated from the land limit of this coastline as well as a zone for withdrawal from transport infrastructure with a width of 2000m.

In terms of pollution struggle, the law on the littoral prohibits any discharge causing pollution of the coast and subject to authorization the spill

of liquid discharges, which do not exceed the limit values subject to the payment of a fee. Similarly, the law guarantees free access to the shore by establishing an easement along the shore over 3 m in width, as well as a transverse access easement.

### **National Strategy for Integrated Coastal Zone Management « ICZM » RSK**

Morocco with the support of the World Bank launched the Integrated Coastal Zone Management (ICZM) project to ensure the sustainable and coherent development of the coastline of the Rabat-Sale-Kenitra region (Dref, 2018).

The ICZM RSK project aims to capitalize, consolidate, and pursue the initiatives carried out at the level of this region within the framework of regional planning and integrated management of coastal zones. More particularly, this concerns the project relating to the contribution towards the development of a management plan. Integrated coastal zone, carried out within the framework of the "European Support Mechanism for Integrated and Sustainable Water Management and the Horizon 2020 Initiative (SWIM-H2020)", enables the development of a diagnosis of coastal areas of the region as well as a common vision for the integrated management of its coastal areas. It also helps to ensure sustainable and coherent development of the region's coastline, to integrate the risks of climate change (rising waters, biodiversity and natural environments, natural resources), and to list and sequence the coastline by suitable vocations. In addition, a dozen of sustainable development projects should be integrated into the management of the littoral.

The Rabat-Sale-Kenitra region is home to 10% of sites of biological and environmental interest (SIBE) on a national scale. The territorial planning of the region takes into account the coastal fringe. In fact, the regional development program (RDP) in July 2017 provides for integrated management of the coastal zone, and the amount of resources allocated to the ICZM program is 15 MDH. The PDR also plans other projects which also concern the coast, namely the development of a reference framework for the management and development of major ecological continuities, agricultural land, and forest resources. It also involves the development of a protection plan for the enhancement of sites of biological interest, as well as the promotion and support of exemplary sustainable development projects and finally support for flood protection projects.

## **Planning Tools**

- **The Development of the Bouregreg Valley**

It covers a total area of 6,000 ha from the Bouregreg estuary to the "Sidi Mohammed Ben Abdellah" dam upstream over a length of 17 km. Among its objectives include:

-depollution of the valley and regional planning with a view of making it “a place of prestige and social cohesion, capable of creating wealth and initiating a policy of sustainable development”;

- facilitate trade between Rabat and Sale with two tram lines, a new bridge and a 1.5 km tunnel under the walls of the Oudayas;

- The project called “BabAl Bahr” corresponds to a city of 35 ha comprising residences, hotels, shops, etc. (Bogaert, 2012).

- **Corniche of Rabat: Saphira Project**

This project aims to contribute to the improvement and enhancement of the Atlantic coast of Rabat. Therefore, the expectations of this project can be summed up in contribution to the resorption of unsanitary housing in the Yacoub Al Mansour and Akkariet neighborhoods. This boosts the local economy by generating jobs in the tourism and hotel sectors. Investment on this steep coast is subject to the completion of major work to reinforce the cliff and sanitation of the coast (Mouloudi, 2009).

- **The Kenitra-Atlantic Port and the Kenitra Free Zone**

The port will be located 24 km north of the mouth of Sebou wadi. The traffic forecast for this port project is 6 million tonnes on the horizon 2020 and 7.6 million tonnes in 2030, according to forecasts by the Ministry of Equipment (Snoussi, 2018).

- **Liquid Sanitation**

The region has 10 WWTPs. The connection rate at the end of 2015 was 91%, This is with a depollution rate of 34% with outfall and 8% without outfall. The new wastewater pre-treatment stations are important link in the coastal depollution system. Those carried out by Redala (Rabat and Skrirat or in the process of being carried out (Sale)) will make it possible to eliminate all direct wastewater discharges and thus to depollute the Atlantic coast and the Bouregreg valley for the agglomerations of Rabat, Sale, Témara, and Harhouraet Ain Attiq.

## **Conclusion**

The littoral of the Rabat-Sale-Kenitra region is characterized by a great diversity of environments (beaches, dune, cliffs, lagoons, estuaries, etc.). This environment, which offers many ecosystem services (natural resources, recreation and tourism, climate regulation, protection against storm surges, etc.), is very fragile because it is subject to the impact of human activities which are constantly increasing (urbanization, development,

etc.). It is in fact the subject of strong land speculation and linear and anarchic urbanization, the installation of tourist and industrial infrastructure, and a more traditional function of the coastal domain which relates to the port and fisheries. It is also exposed to the inevitable effects of climate change (rise in sea level, modification of the swell regime, flooding, erosion, intrusion Marine...).

A coveted space, the littoral, is therefore a vulnerable space that experiences significant forms of pressure, both natural and anthropogenic, causing degradation and pollution that reduce its resilience to climate change. This situation requires Morocco to find the conditions for a more "sustainable" development. Therefore, this requires the harmonization of all activities and all uses of the coast in the interest of the environment and the population. As a result, it is necessary to consolidate the participatory approach in order to involve the populations concerned. Also, it is necessary to consolidate scientific research as stipulated in the littoral law and to ensure the application of laws and regulations.

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## **“What! Is Fanny Ill?” - Disease as a Means of Telling the Self in Jane Austen’s Narrative**

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### **Abstract**

The present paper, placing its focus on three of Jane Austen’s canonical texts: *Sense and Sensibility*, *Pride and Prejudice*, and *Emma* is aimed at evaluating the function of disease states inside the narration. Consequently, the disease state highlights characters, relational and linguistic elements that seem to act as a communicative model that leads up to modifying the social relationships themselves and the fate of the characters. This is the area that is explored in the present paper, utilizing a methodology oriented to shed light, by means of text analysis, on the implications located between those places of the text in which the disease state actively enters and becomes part of the narration. The disease state is able to communicate those most authentic and universal feelings that are at the basis of domestic life narrated in the extraordinary Jane Austen’s microcosm, and as the internal uneasiness is dissolved so is the disease.

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**Keywords:** Feminine gender, disease, text analysis, Jane Austen.

### **Introduction**

Disease states are unexpected and silent elements extremely present in Jane Austen’s narrative (Kaplan and Kaplan, 1990). They have a distinctly feminine gender, since they concern men and women to different degrees, and they are transversal factors related to social class and age. So, the disease state represents an important triggering element through which archetypal narratives can be traced with an extremely important symbolic value in the expressive economy of the texts. By virtue of its pervasiveness, the disease state lends itself to assume the communicative burden of a Victorian body that has no voice; it is “absent, suspended, at best relegated to the inferior partner in the dyad of mind and body” (Whiltshire, 1992), and particularly the female body which is the privileged target of the sublimation of desire (Grandi, 2018).

Pervasive and adaptive, the disease state ‘speaks’ thanks to a wide range of registers, from Mrs. Bennet’s comings (Copeland, 2013) up to the tragic words and events linked to the figure of Marianne Dashwood. Through the subtle Jane Austen’s combinatorial art, who paints on ivory, the disease state carries out the important function of fulcrum of the imbalance between body and reason, pain and mockery, representing not only a motivation related to the unwinding of the plot, but a real factor marking the emotional journey of the characters, their personal evolutions and their choices.

The tension between decomposition and re-composition, between the loss and regaining of the balances, between health and illness, revolves around certain elements recurring in Austen’s canon. Thanks to such controversies in combination with the onset, persistence and healing of the disease state, real margins of dialogicality are brought to life, in which the characters can express themselves, change the course of the events, solicit reactions towards that personal relational microcosm that becomes the paradigm of a wider Victorian condition, in which the concept of concealment and transfiguration of the body seems to be essential (Grandi, 2018).

The marital status, the class, the loss and the search for relational support figures and more generally a state of physical and social minority are factors that if *in absentia* remain functional to diegesis, through combining *in presentia* with the disease state of the body become prismatic and diffractive sites of emotions, pains and social aspirations, true expressive traces that are not manifestable otherwise. Therefore, the disease state is not only: “an aid to the effect of domestic realism” (Whiltshire, 1992), but also a suitable tool to develop and illustrate “moral characters as well as to further its plots” (Whiltshire, 1992).

The etymology of the word pathology derives from the Greek *pathos* (πι ἄθος), meaning ‘experiencing’, ‘suffering’ and *-logy* (- λογί alpha), meaning ‘the study of’, and clears the implications running between body and disease. Concurrently, the word disease which derives from old English, is composed by the prefix ‘dis-’ meaning ‘altered’ ‘not normal’ and ‘-ease meaning ‘comfort’ ‘well-being’. Thus, a disease is actually the loss of the state of wellness. The famous metaphor of the ivory (Le Faye et al., 2014) offers a starting point to relate the complex texture of Austen’s narrative, of which the disease state is a structuring element, to the almost evanescent smoothness apparently devoid of own corporality, which is typical of the ivory material. This aesthetic-formal composure could legitimately be understood as coldness. Mark Twain (Auerbach, 2004) defines the characters of Edward Ferrars and Elinor Dashwood as not being very passionate (Auerbach, 1999) and completely disembodied, and accuses them of being mere shadows of themselves. However, in pre-Victorian age in which the

body especially the female one is hidden under heavy drapes of social velvet is unreal and distorted, and it becomes an instrument all the more unexpected as subversive: a “correlative objective of desire” (Grandi, 2018) and of experiential form. Therefore, a representative method is necessarily developed that focuses on both the transfiguration and appearing in a different way, with a surprising trick that does not imply the disappearance of the physical identity, but its dialogic-narrative refraction of which Austen’s texts are entirely studded.

Through emotions, the body is invariably called upon as a primary means of experiencing pain, joy, feelings, even if it is unable to explicitly manifest itself (McCabe, 2008). Referring to the social context and the female condition in the second half of '700, the social female segregation typical of the Regency Age immediately brings to mind the ideal of “the angel of the hearth” (Gilbert and Gubar, 1979), virgin and ethereal, juxtaposed to the diabolical Bronte’s “mad woman in the attic” as previously defined (Gilbert and Gubar, 1979). Such condition never fails to generate a state of dysphoric weakness and is constantly suspended between passion and negation, finding its natural variation in the disease state. The state of being in love, the institution of marriage, the low social status and in particular the sudden lack a supporting reference figure with a surrogate maternal function are all elements that denounce a minority condition competing with the development of a disease. In this way the disease state never fails to fulfill its important communicative function of a deeper state of mind, of an inner unease of the soul that would otherwise remain unexpressed.

The present paper, placing its focus on three of Jane Austen’s canonical texts: *Sense and Sensibility*, *Pride and Prejudice*, and *Emma* is aimed at evaluating the function of disease states inside the narration. Placed in direct correlation with the specific conditions of weakness as previously defined, the symptoms and ailments can assume sign-expressive functions as well as being merely functional to the development of narration. Consequently, the disease state highlights characters, relational and linguistic elements that seem to act as a communicative model that leads up to modifying the social relationships themselves and the fate of the characters. This is the area that is explored in the present paper, utilizing a methodology oriented to shed light, by means of text analysis, on the implications located between those places of the text in which the disease state actively enters and becomes part of the narration.

### **Disease and Destiny**

Marriage represents the crucial moment in the life of Austen’s women (Bertinetti, 1987), it is the ultimate goal to which mothers and

daughters tend and place all aspirations. In *Pride and Prejudice*, Mrs. Bennet represents the incarnation of election of these projects. She even goes so far as to despise any rule of legitimate parental prudence towards her eldest daughter, in order to create a real possibility for her to catch a husband:

“She did at last extort from her father an acknowledgment that the horses were engaged, Jane was therefore obliged to go on horseback, and her mother attended her to the door with many cheerful prognostics of a bad day. Her hopes were answered; Jane had not been gone long before it rained hard. Her sisters were uneasy for her, but her mother was delighted. The rain continued the whole evening without intermission; Jane certainly could not come back. ‘This was a lucky idea of mine, indeed!’ said Mrs. Bennet, more than once, as if the credit of making it rain were all her own. Till the next morning, however, she was not aware of all the felicity of her contrivance. Breakfast was scarcely over when a servant from Netherfield brought the following note for Elizabeth”

“ ‘My dearest Lizzy, I find myself very unwell this morning, which, I suppose, is to be imputed to my getting wet through yesterday. My kind friends will not hear of my returning home till I am better. They insist also on my seeing Mr. Jones—therefore do not be alarmed if you should hear of his having been to me—and excepting a sore-throat and head-ache there is not much the matter with me.’ ”

It is clear that the disease state performs a function directly affecting the fate of Jane Bennet, and the many chances and hopes that the young woman falls victim of an illness and that she is forced to stay at Netherfield Park for the entire duration of the disease constitute the foundation of the devised and executed plan by Mrs. Bennet. The disadvantage of Jane being away from home, and the ‘fortuitous’ opportunity set by Mrs. Bennet ensure a privileged position to the young woman who can enjoy a forced proximity with the excellent party Mr. Bingley who in fact proves to be very considerate towards Jane, despite of her illness. In this way, the developed illness ensures the state of imbalance, which is a prerequisite to the accomplishment of mother’s projects, and even though a quite high price is paid in terms of health, the project is judged appropriate by Mrs. Bennet:

“ ‘Oh! I am not at all afraid of her dying. People do not die of little trifling colds. She will be taken good care of. As long as she stays there, it is all very well. I would go and see her, if I could have the carriage.’ ”

The balance is later restored by both the cares of Mr. Bingley and the loving Elisabeth Bennet who faces, on foot and in adverse weather conditions, a journey more than three miles long to reach her sick sister at Netherfield.

The disease therefore acts as a first and fundamental trigger towards Mrs. Bennet’s canonical goal of marrying both of her daughters, albeit

directly for Jane Bennet, and indirectly for Lizzy. Although Mrs. Bennet's project is undertaken for reasons far from noble but truly maternal, it is however directly related to the sudden onset of the illness that affects Jane Bennet, which in turn unexpected results are generated that cause cascading changes to the social relationships of the young women, guaranteeing Lizzy a new and providential personal position in the eyes of Mr. Darcy, which will bring both sisters to happy marriages:

“ ‘Your picture may be very exact, Louisa,’ said Bingley; ‘but this was all lost upon me. I thought Miss Elizabeth Bennet looked remarkably well, when she came into the room this morning. Her dirty petticoat quite escaped my notice.’ ‘You observed it, Mr. Darcy, I am sure,’ said Miss Bingley ‘and I am inclined to think that you would not wish to see your sister make such an exhibition.’ ‘Certainly not.’ ‘To walk three miles, or four miles, or five miles, or whatever it is, above her ankles in dirt, and alone, quite alone! What could she mean by it? It seems to me to shew an abominable sort of conceited independence, a most country town indifference to decorum.’ ‘It shews an affection for her sister that is very pleasing,’ said Bingley. ‘I am afraid, Mr. Darcy,’ observed Miss Bingley, in a half whisper, ‘that this adventure has rather affected your admiration of her fine eyes.’ ‘Not at all,’ he replied; ‘they were brightened by the exercise.’ ”

Also in *Sense and Sensibility*, the same discriminant function of the disease can be modelled thanks to the passionate Marianne who meets Mr. Willoughby because of her falling down along the slopes of the hill during a thunderstorm. In this case the event is not directly driven by maternal supervision, nor is it the result of a devised premeditation. However, Sir Middleton explicitly, clearly and out of metaphor indicates the instrumental use of ailments, which are widely used by the female gender to seek husbands and more generally to encourage contacts between the two sexes:

“Aye, you will make conquests enough, I dare say, one way or other. Poor Brandon! He is quite smitten already and he is very well worth setting your cap at. I can tell you, in spite of all this tumbling about and spraining of ankles.”

With Marianne Dashwood the connotative power of the disease is probably conveyed most clearly, and from an expressive dialogue element it turns into a real medical condition that can affect the fate of the characters, through the vision that they themselves have of the world surrounding them, as well as through an intimate and personal journey of maturity. Marianne's path moves from an exaggerated, romantic and painful passion capable of personifying natural places that could arouse violent emotions, to a loving utopia embodied in Willoughby, which can only manifest tragically and totally:

“The slightest mention of anything relative to Willoughby overpowered her in an instant; and though her family were most anxiously attentive to her comfort, it was impossible for them, if they spoke at all, to keep clear of every subject which her feelings connected with him. [...] She would have been ashamed to look her family in the face the next morning, had she not risen from her bed in more need of repose than when she lay down in it. But the feelings which made such composure a disgrace, left her in no danger of incurring it. She was awake the whole night, and she wept the greatest part of it. She got up with a headache, was unable to talk, and unwilling to take any nourishment; giving pain every moment to her mother and sisters, and forbidding all attempt at consolation from either. Her sensibility was potent enough!”

The emotional *crescendo* evolves in such a way as to bring Marianne one step away from death, from which she is torn away also thanks to the reunification and proximity of those essential reference figures represented by her mother and her sister Elinor. Mrs. Dashwood, in particular, and no longer Willoughby becomes the object of Marianne’s torment, and she is invoked in a loud voice by her daughter, who is now out of her mind, at the height of the delusion, and under the dismayed eyes of Elinor who assists her helplessly:

“The repose of the latter became more and more disturbed; and her sister, who watched with unremitting attention her continual change of posture, [...] when Marianne, suddenly awakened by some accidental noise in the house, started hastily up, and with feverish wildness, cried out— ‘Is mama coming?’ ‘Not yet,’ replied the other, concealing her terror, and assisting Marianne to lie down again, ‘but she will be here, I hope, before it is long. It is a great way, you know, from hence to Barton.’ ‘But she must not go round by London,’ cried Marianne, in the same hurried manner, ‘I shall never see her, if she goes by London.’ Elinor perceived with alarm that she was not quite herself, and while attempting to soothe her, eagerly felt her pulse. It was lower and quicker than ever! and Marianne, still talking wildly of mama, her alarm increased so rapidly, as to determine her on sending instantly for Mr. Harris, and dispatching a messenger to Barton for her mother.”

At first glance, the experience of disillusioned falling in love lived in such a visceral way is for Marianne the beginning of a journey that leads her to conclude her personal story in the canonical happy ending in the arms of the mature Colonel Brandon. Actually the disease could have represented an authentic trigger of Marianne’s personal maturation processes, making explicit a clear vision of a more moderate and less dionysiac and self-destructive conception of life itself. The illness carries out the task of inducing her to reconsider the persons that are close to her, the same ones

that she previously had the temerity to criticize bitterly, such as Mrs. Jennings, Mrs. Palmer and especially Colonel Brandon, so opening the doors to the expected happy ending:

“Marianne’s illness, though weakening in its kind, had not been long enough to make her recovery slow; and with youth, natural strength, and her mother’s presence in aid, it proceeded so smoothly as to enable her to remove within four days after the arrival of the latter, into Mrs. Palmer’s dressing-room. When there, at her own particular request, for she was impatient to pour forth her thanks to him for fetching her mother, Colonel Brandon was invited to visit her.[...] The day of separation and departure arrived; and Marianne, after taking so particular and lengthened a leave of Mrs. Jennings, one so earnestly grateful, so full of respect and kind wishes as seemed due to her own heart from a secret acknowledgement of past inattention, and bidding Colonel Brandon farewell with the cordiality of a friend...”

Just like in *Pride and Prejudice*, also in *Emma*, the marriage institution represents a real Gordian knot. Jane Fairfax represents the liminal character whose dissimulation ability used for a large part of the text and functional to the development of the text itself acts as a perfect counterpart to the figure of Emma Woodhouse within a deeply unequal cordiality relationship. The dissimulation method of which Jane Fairfax is anything but proud is made necessary by the circumstances and indispensable for the pursuit of her marriage goal, and is also achieved thanks to the marked condition of illness. In the culminating moment in which for Jane Fairfax both the emotional and economic supports from the reference figures identified in the Campbell family are lacking, her marriage project is still stranded among the dry emotions of a young Frank Churchill. He tries to clumsily conceal his own feelings, and in this way Jane Fairfax touches the lowest point of her personal diegetic parable assuming a state of absolute minority and becomes ill. Therefore, the disease takes on the dialogic and communicative functions that are denied to the young woman, finally allowing her to overwhelmingly, suddenly manifest her pain and unbalancing the balance.

“Jane caught a bad cold, poor thing! So long ago as the 7<sup>th</sup> of November, (as I am going to read to you,) and has never been well since. A long time, is not it, for a cold to hang upon her? She never mentioned it before, because she would not alarm us. Just like her! so considerate!—But however, she is so far from well, that her kind friends the Campbells think she had better come home, and try an air that always agrees with her; and they have no doubt that three or four months at Highbury will entirely cure her—and it is certainly a great deal better that she should come here, than go to Ireland, if she is unwell. Nobody could nurse her, as we should do.”

Also in this case the imbalance finds its center of gravity thanks to the providential pass away of Mrs. Churchill, who represents the only real impediment to the accomplishment of the marriage project. The consequent dissolution of the situation in a whirlwind of explanations, amazements, clarifications materializes in an immediate physical and nervous recovery of Jane Fairfax, who after having laboriously conquered the right to express the real nature of her painful condition, rising to the role of girlfriend officially recognized in view of the marriage goal, she can make her version of the facts public. However, emblematically, Jane Fairfax does not speak directly, instead Mrs. Weston reports her words:

“ ‘On the misery of what she had suffered, during the concealment of so many months,’ continued Mrs. Weston, ‘she was energetic’. This was one of her expressions. ‘I will not say, that since I entered into the engagement I have not had some happy moments; but I can say, that I have never known the blessing of one tranquil hour:—and the quivering lip, Emma, which uttered it, was an attestation that I felt at my heart.’ ‘Poor girl!’ said Emma. ‘She thinks herself wrong, then, for having consented to a private engagement?’ ‘Wrong!—No one, I believe, can blame her more than she is disposed to blame herself. The consequence,’ said she, ‘has been a state of perpetual suffering to me; and so it ought. But after all the punishment that misconduct can bring, it is still not less misconduct. Pain is no expiation. I never can be blameless. I have been acting contrary to all my sense of right; and the fortunate turn that everything has taken, and the kindness I am now receiving, is what my conscience tells me ought not to be. Do not imagine, madam,’ she continued, ‘that I was taught wrong. Do not let any reflection fall on the principles or the care of the friends who brought me up. The error has been all my own; and I do assure you that, with all the excuse that present circumstances may appear to give, I shall yet dread making the story known to Colonel Campbell.’ ”

If Jane Fairfax’s condition of social inferiority is directly connected with her possibility - or better to say impossibility - to express her own being, then the development of a disease acts as a communicative surrogate within the dichotomous relationship that links Jane Fairfax to Emma, and the social picture changes completely. Indeed, Jane Fairfax’s silence and illness are accompanied by a vital and assertive Emma who can clearly state how the class and therefore the social and economic conditions are decisive for defining the position of women in the world, also and above all outside the institution of marriage:

“Never mind, Harriet, I shall not be a poor old maid; and it is poverty trees cut back so as to produce a thick, hedge like growth only which makes celibacy contemptible to a generous public! A single woman, with a very narrow income, must be a ridiculous, disagreeable, old maid! The proper

sport of boys and girls; but a single woman, of good fortune, is always respectable, and may be as sensible and pleasant as anybody else.”

### **The Language of Dis-ease**

Dis-ease, meaning altered wellness, is encountered in both parental figures Jane Austen’s narrative, and for the first time illness is not relegated to women. Indeed, if for Mrs. Bennet her daughters’ marriages are desired, searched for and planned, on the other hand, for Mr. Woodhouse they become central in three different occurrences in the text: Isabella’s marriage, Miss Taylor’s marriage, and finally Emma’s marriage. For Mr. Woodhouse his daughters’ marriages represent the cause of the removal, one after the other, of the central supportive reference figures in the life of the elderly widower, and contribute to heightening his intrinsic selfishness and hypochondria, which end up becoming peculiar traits of this character. In the case of Mr. Woodhouse, the age at the registry plays a fundamental role, together with the class and the economic condition. Thanks to the disease, which acts as an expressive trigger, he himself will explicitly claim the condition of invalid, and therefore he becomes in some way legitimized to compromise the life and choices of those around him, openly affirming himself a privileged:

“Well, I believe. If you will excuse me. Mr. Knightley, if you will not consider me as doing a very rude thing [...] We invalids think we are privileged people.”

Mr. Woodhouse’s hypochondria even manages to take on an ironic trait when the interesting exchange of terms that refer to the semantic field of corporality symbolically suggests the close link among disease, body and unexpressed feelings and among disease heart and lungs:

“Poor Mr. Woodhouse little suspected what was plotting against him in the breast of that man whom he was so cordially welcoming, and so anxiously hoping might not have taken cold from his ride.—Could he have seen the heart, he would have cared very little for the lungs; but without the most distant imagination of the impending evil, without the slightest perception of anything extraordinary in the looks or ways of either, he repeated to them very comfortably all the articles of news he had received from Mr. Perry, and talked on with much self-contentment, totally unsuspecting of what they could have told him in return.”

After all, in a completely different context as can be that of the family *menagè* in *Pride and Prejudice*, Mrs. Bennet also uses her nerves as an effective tool to stand in a position of strength and take control of the interactions with her husband, in a sort of a linguistic system that Mr. Bennet shows, however, that he understands perfectly:

“Mr. Bennet, how can you abuse your own children in such a way? You take delight in vexing me. You have no compassion on my poor nerves.” “You mistake me my dear, I have a high respect for your nerves. They are my old friends”

Disease is accorded with a privilege that comes to constitute a dialogic-communicative model within a precise personal relationship based on games of strength and stereotyping. Also for Jane Fairfax in *Emma*, the disease state is a form of dialogue that uses more or less obvious ways of shielding, avoiding and concealing. If for Mr. and Mrs. Bennet the chosen form is that of irony, for Mr. Woodhouse and Isabella is one of apparent civilization of social relationships and roles and the unsuspected composure of the communicative tones that act as screens within that particular linguistic model founded on the disease and its derivatives, such as more valuable treatment methods or trusted doctors to contact. Behind the urbanity of the speeches, the paternal intransigence and the selfish resentment for the transfer of his eldest daughter from Hartfield to South End, after her marriage to Mr. Knightley fear, and Emma strenuously strives to prevent the conflict from escalating, during the articulated confrontation between Isabella and her elderly father:

“While they were thus comfortably occupied, Mr. Woodhouse was enjoying a full flow of happy regrets and fearful affection with his daughter.[...] ‘It was an awkward business, my dear, your spending the autumn at South End instead of coming here. I never had much opinion of the sea air.’ ‘Mr. Wingfield most strenuously recommended it, sir—or we should not have gone. He recommended it for all the children, but particularly for the weakness in little Bella's throat,—both sea air and bathing.’ ‘Ah! My dear, but Perry had many doubts about the sea doing her any good; and as to myself, I have been long perfectly convinced, though perhaps I never told you so before, that the sea is very rarely of use to anybody. I am sure it almost killed me once.’ ‘Come, come,’ cried Emma, feeling this to be an unsafe subject, ‘I must beg you not to talk of the sea.[...]’ ‘Ah! My poor dear child, the truth is, that in London it is always a sickly season. Nobody is healthy in London, nobody can be. It is a dreadful thing to have you forced to live there!—so far off!—and the air so bad!’ ‘No, indeed—we are not at all in a bad air. Our part of London is so very superior to most others! You must not confound us with London in general, my dear sir.’ ‘Ah! My dear, it is not like Hartfield. You make the best of it—but after you have been a week at Hartfield, you are all of you different creatures; you do not look like the same. Now I cannot say, that I think you are any of you looking well at present.’ ”

However, Emma also falls victim of an imbalance that cracks her view of the world. As for Jane Bennet, Marianne and Jane Fairfax, frailty

also manifests itself through the birth and torment of love, so much so that it becomes clear even if not so violent and disruptive as for the others. However, the paths between the lines can be traced, and it is precisely that reference figure so dear to her, Mrs. Weston that once again supports Emma:

“ ‘Are you well, my Emma?’ was Mrs. Weston’s parting question. ‘Oh! Perfectly. I am always well, you know. Be sure to give me intelligence of the letter as soon as possible.’

The marriage epilogue between Emma Woodhouse and Mr. Knightley represents yet another factor of misalignment, which exacerbates Mr. Woodhouse’s disease condition. The communicative model linked to the disease, which in this case is distinctly nervous, is the channel of choice used by the elderly gentleman to modify the social relationships and the decisions taken by the characters;

“When first sounded on the subject, he was so miserable, that they were almost hopeless.—A second allusion, indeed, gave less pain.—He began to think it was to be, and that he could not prevent it—a very promising step of the mind on its way to resignation. Still, however, he was not happy. Nay, he appeared so much otherwise, that his daughter’s courage failed. She could not bear to see him suffering, to know him fancying himself neglected; and though her understanding almost acquiesced in the assurance of both Mr. Knightleys, that when once the event were over, his distress would be soon over too, she hesitated—she could not proceed. In this state of suspense they were befriended, not by any sudden illumination.”

Mr. Knightley himself restores the correct balances providentially agreeing not to take away Emma from her father’s house after the wedding:

“This proposal of his, this plan of marrying and continuing at Hartfield—the more she contemplated it, the more pleasing it became. His evils seemed to lessen, her own advantages to increase, their mutual good to outweigh every drawback. Such a companion for herself in the periods of anxiety and cheerlessness before her!—Such a partner in all those duties and cares to which time must be giving increase of melancholy!”

## **Conclusions**

For Jane Austen’s heroines Jane Bennet, Marianne, Jane Fairfax and Emma, the disease state, which is preceded and followed by reflections in search of a refuge in solitude and nature so to put order among thoughts and find the strength to manifest feelings that go beyond the communicative channel of the body, represents a concrete turning point towards the conquest of the right to self-expression. As the narration continues, the disease states disappear when the soul and mind have found their complete resolution through love. This landing is an integral part of the particular personal maturation process of the characters of which Jane Austen’s literature

speaks, outlining scenes and feelings on ivory with delicate strokes of a very fine paintbrush.

Balance is something precious and ethereal that pervades Jane Austen's writings entirely. Each ingredient is carefully weighed and placed under the right light, in an almost perfect gear. Even the disease state is fully part of the turns of the mechanism, participating in the tension between decomposition and re-composition of the balances. In combination with different elements, which taken individually contribute merely to the development of diegetic realism, the disease state manages to route the text towards new expressive paths, sometimes in a subtle but always decisive way.

Through the social class, age and gender, the disease state is able to modify social relationships, compromising the fate of the characters and encouraging character and personal maturation, taking on itself the honors of rising to a communicative model by means of the body as an instrument of choice and through ironic, tragic, sometimes even comical linguistic registers. The disease state is able to communicate those most authentic and universal feelings that are at the basis of domestic life narrated in the extraordinary Jane Austen's microcosm, which has contributed so much to characterize the development of the figure of the woman through the last centuries, and which continues to enrich itself with new visions, through infinite re-readings, over the course of time.

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