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Posted Date: 2 August 2024

doi: 10.20944/preprints202408.0043.v1

Keywords: History of Nursing; Public Health; Florence Nightingale



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Article

Florence Nightingale on Rural Health Management: Health Missioners' Development and Its Contribution to Public Health

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Abstract: Background: The Victorian era in Great Britain was a historical period that brought about profound changes for humanity. The confluence of various factors fostered the development of numerous scientific disciplines. In the field of health sciences, Florence Nightingale played a central role. Following her training as a nurse and her role as superintendent during the Crimean War, she made decisive contributions to establishing a public health network. Methods: This is a retrospective historical heuristic and hermeneutic study analyzing documentation of Nightingale's contributions to public health from around 1890 to 1900. The historical method was used to collect, classify, and analyze primary and secondary sources relevant to the study's objectives. Results: Nightingale supported the development of the concept of "health at home" by training women to implement healthy measures that contributed to the well-being of families and communities. Through the training and development of a formal "health missioners program", she provided the necessary guidance to improve the health of rural communities across the English countryside. Conclusion: The role of health missioners has persisted, as health visitors continue to visit homes in the United Kingdom. Therefore, the contribution of Florence Nightingale to public health is unquestionable. This study was not registered.

Keywords: History of Nursing; Public Health; Florence Nightingale

1. Introduction

The Victorian era in the United Kingdom represents a historical period that significantly transformed not only British society but also exerted a profound influence on humanity at large. It coincides with Queen Victoria's reign, which commenced on 20 June 1837 upon her ascension to the throne and extended until her death on the Isle of Wight in 1901 [1]. The Victorian United Kingdom during the Victorian period witnessed unprecedented development that was determined by various factors being the most important the Industrial Revolution.

The term "Industrial Revolution" was coined by economic Historian Arnold Toynbee to describe a period of rapid economic growth driven by the swift social, demographic, and technological changes that begun in the mid-18th century and spanned the entire Victorian era [2]. During this period, traditional artisan techniques were supplanted by machine-based manufacturing tools and equipment. Furthermore, the steam engine gained widespread adoption and coal emerged as the predominant fuel source. The development of the railway system significantly bolstered industrial growth, as it enabled the rapid transportation of goods and people across the entire territory of Great Britain. The expansion of the railway network accelerated from 1856 onwards when Henry Bessemer patented a mass production process for steel [3]. Additionally, advancements in shipbuilding, driven by the adoption of new materials and fuels, facilitated the expansion of the United Kingdom as an empire. The 19th century witnessed the zenith of the British Empire's expansion, which had begun in the 15th century. This period saw the conquest of New Zealand, control over various Pacific islands such as Papua New Guinea and Fiji, the establishment of Crown rule in India following the Indian Mutiny, and dominance over several African nations, including Zambia, Malawi, and Uganda [4].

Furthermore, the Education Act of 1870 mandated compulsory elementary education for children aged 5 to 12 in England [5]. This legislation resulted in the emergence of the first literate generation in history. The reform in educational law was instrumental in advancing literature and the press, facilitating the dissemination of knowledge, and expanding access to higher education. The Victorian United Kingdom was home to several eminent writers, such as Oscar Wilde, the Brontë sisters, Charles Dickens, and Lewis Carroll, who vividly portrayed the customs and concerns of their time in their literary works [6].

From the mid-1800s to 1900, the population of Great Britain tripled, reaching approximately 32 million inhabitants [7]. This period experienced significant internal migration, with rural areas losing over 4 million people who relocated to industrial cities [8]. Although the Industrial Revolution incited rural depopulation as individuals moved to urban areas for factory employment, the rural economy remained predominantly agricultural. Despite the partial mechanization of farming practices, agriculture continued to be largely seasonal and labor-intensive. Rural residents typically lived in simple cottages within villages and small towns, often without access to running water and sanitation, which exacerbated health issues. Urban conditions were comparably harsh; inhabitants frequently resided in overcrowded buildings where the spread of disease was common.

These challenging conditions, coupled with political stability and demographic changes, contributed to the advancement of various scientific disciplines. In November 1859, Charles Darwin published "On the Origin of Species," and his theory of evolution profoundly transformed the field of biology. Darwin's revolutionary interpretation of human origins posited that species evolve over time, give rise to new species, and share a common ancestor through the mechanism of natural selection [9]. Prior to Darwin's publication, most Western scientists believed that all life on Earth was created by God. In the health sciences, significant improvements in quality of life and reductions in mortality rates were achieved through the institutionalization of medical care, the establishment of formal training for doctors and nurses, and the development of new treatments. During the 19th century, the prevailing theory of disease transmission was miasma, which suggested that diseases were spread through the air [10]. As a result, ventilation was often recommended to purify the air of harmful germs, a practice notably advocated by Florence Nightingale.

Florence Nightingale, a contemporary of Queen Victoria, was born in Italy to a wealthy English family. Her parents, William Nightingale (née Shore) and Frances Smith, were traveling across Europe during their honeymoon when they had their two daughters: Partenope, born in Naples in 1819, and Florence, born in Florence on May 12, 1820. William, a landowner who inherited his estate from his uncle, and Frances, a descendant of a merchant family, ensured that upon their return to England, the Nightingale sisters received a comprehensive education from governesses and their father, a highly educated man who instilled in them a love of learning. From adolescence, Florence Nightingale experienced a profound spiritual life. In 1837, she recorded in her notes that she had received a divine calling, and by 1844, she concluded that this calling was to become a nurse and care for the disadvantaged [11].

Nightingale faced opposition from her family in pursuing nursing training, as this vocation was not well-regarded by upper-class families and was often relegated to servants. Additionally, there was a prevalent belief among the upper class that nurses in hospitals were either immoral and drunken or devoutly religious women. Prior to her departure for Crimea in 1854, Nightingale led a lifestyle typical of an unmarried upper-class woman, characterized by frequent visits to relatives and extended travels abroad. However, unlike her peers, who generally traveled for familial visits and tourism, Nightingale persistently sought nursing training opportunities. She undertook two training placements at the Kaiserswerth Deaconess Institution: a brief one in 1850 lasting a few weeks, and another in 1851 extending for approximately three months, from July to October [12]. In 1853, she furthered her education in Paris with the Sisters of Mercy for a short period and visited several hospitals to collect data on nursing practices. Upon returning to England, Nightingale became the superintendent at the Establishment of Gentlewomen during Illness in London, an unpaid position supported by a stipend of 500 pounds per annum from her father. Her efficiency and determination

in this role garnered widespread admiration, particularly during the cholera outbreak in Soho in 1854 [13].

In 1848, while traveling in Italy, Florence Nightingale met Sidney and Elizabeth Herbert, a married couple on their honeymoon [14]. From that point onward, Florence and Sidney maintained a strong friendship and engaged in extensive correspondence. Sidney Herbert, who served as Secretary of War in Lord Aberdeen's government from 1852 to 1854, oversaw the War Office during the Crimean War. In October 1854, he wrote to Nightingale, requesting that she lead a group of nurses to Scutari to serve as superintendent of the English General Military Hospital [11]. Shortly after receiving this letter, Nightingale departed for Turkey with a group of 32 volunteer nurses, arriving a month later. The nurses faced extremely harsh conditions, including inadequate food, blankets, and sanitary supplies. After nearly two years of strenuous work, Nightingale left the Scutari barracks in July 1856, following the conclusion of the Crimean War. Although she returned to England as a heroine, she declined the public reception organized in her honor.

Following her role as a supervisor of nurses during the Crimean War, Nightingale spent nearly her entire adult life as an invalid. From her home in the Mayfair district of London, she wrote thousands of letters, diaries, notes, and other documents. Thus, she was a prolific author with a significant role not only as a nursing theorist in the development of care but also as a reformer in establishing measures to improve public health, primarily for the most disadvantaged classes.

2. Materials and Methods

2.1. Research Design

This study is a retrospective historical heuristic and hermeneutic analysis of documentation concerning Florence Nightingale's contributions to public health, with a particular focus on her role in establishing a network of health missionaries in rural England. The research employed historical methodology to systematically collect, classify, and analyze both primary and secondary sources pertinent to the study's objectives.

2.2. Libraries for Documentary Research

The British Library: Both physical and online locations provided several primary and secondary sources.

Harvard University Library: It was located a digital copy of the main primary source of this paper: Nightingale, F., & Conference of Women Workers. (1894). *Rural Hygiene* [15].

2.3. Additional Research in Databases and Search Engines for Secondary Sources

PubMed®: Approximately 10-15 relevant secondary sources were located and included in the research.

Historical Association (UK): Articles related to the biography of Florence Nightingale were found and added.

Britannica Online: Numerous entries on the Victorian era provided valuable historical context.

Institute of Historical Research, University of London: Articles and other documents clarified aspects of the historical context and Florence Nightingale's biography

3. Results

3.1. Historical Background

Florence Nightingale's concept of "health at home" is thoroughly articulated in her 1859 publication, *Notes on Nursing*. In this work, Nightingale offers a series of recommendations for caregivers of the sick, emphasizing straightforward domestic measures such as ventilating rooms, creating a comfortable environment, and maintaining cleanliness. Notably, the second chapter, titled "Health of Houses," is structured around five pillars essential for a healthy home: clean air, clean water, household cleanliness, effective waste management, and adequate lighting [16]. The term "health at home" or "health in the home" was introduced by Nightingale to Frederick Verney in a letter dated 1891 [11]. Verney, who was Nightingale's nephew by marriage, had a longstanding

relationship with her. In her correspondence, Nightingale underscored the importance of "health at home" for local government officials but expressed disappointment at the lack of significant actions taken on this matter. She also noted that Verney had requested her to encourage educated women to train rural women in healthy practices. Nightingale argued that District Nurses would be inadequate for this task and suggested instead that "Health Missioners" should be trained by qualified men with healthcare expertise.

Florence Nightingale decided to implement the "Health Missioners" project in North Buckinghamshire, identifying Dr. George De'Ath to train women as "Health Missioners" to educate rural women on maintaining healthy habits in their homes. Nightingale had connections to the area, as her sister Parthenope was married to Sir Harry Verney and resided at Claydon House. Dr. De'Ath, a reputed general practitioner, supported Nightingale's project. Since no school existed to facilitate such training, they organized local training for Health Missioners so that these women could be deployed to other areas of England where needed. In November 1892, a report from the North Buckinghamshire Technical Education Committee detailed the advancements in the training of "Health Missioners" up to that point [17]. The document included the curriculum for the program, the assessment system, and several letters from Florence Nightingale offering recommendations for the project's implementation. Nightingale emphasized that Health Missioners required different training than nurses who care for the sick and suggested that it could become a new profession for women.

The training of "Health Missioners" commenced in the spring of 1892. The North Bucks Technical Education Committee employed Dr. De'Ath to deliver 14 lectures on "Health at Home" to several local ladies. The objective of this course was to prepare these women to educate rural women on health practices in country villages. Following the lectures, Dr. Wilson, Medical Officer of Health for Warwick, examined the ladies to assess their knowledge. Six of them passed the examination and received certification as "Health Missioners." Four of these women were employed, receiving a salary and travel expenses to visit and train rural women in the North Bucks area. In a letter written later that year, in November 1892, to Frederick Verney, Florence Nightingale discussed the progress and challenges of the "health at home" project in Buckinghamshire [17]. She expressed satisfaction with the mission's success and highlighted the positive impact of the Health Missioners on the local cottage population. Nightingale emphasized the importance of frequent visits rather than just lectures to effectively teach health and sanitation practices to rural women. She concluded by expressing her deep interest in and support for the mission and its beneficial impact on rural poor women, initiated by the Buckinghamshire County Council.

3.2. Florence Nightingale's Speech in the Leeds Conference of Women Workers

From November 7th to 10th, 1893, the Conference of Women Workers was held at the Albert Hall in Leeds, organized by the Union of Women Workers. The National Union of Women Workers was formally established in 1895, bringing together various women's philanthropic groups and trade unions [18]. The organization emerged in the early 1890s with the aim of creating a supportive alliance of women and their associations. Its mission was to promote sympathy of thought and purpose among the women of Great Britain and Ireland, to enhance the social, civil, moral, and religious welfare of women, to share information beneficial to women workers, and to encourage the federation of women's organizations at both local and national levels. The Union organized annual conferences starting in 1891, with the inaugural conference held in Liverpool, where the Central Council of the Conferences of Women Workers was initiated [19].

Several women were invited to present their ideas at the Leeds conference, including Florence Nightingale. She wrote a speech on rural health, discussing the state of rural hygiene and the progress in establishing a network of "Health Missioners." Her paper was read at the conference by Maude Sarah Verney, the wife of her nephew-by-marriage, Frederick [20].

Florence Nightingale's speech was published in 1894 to make it accessible to the public. Her analysis explored public health conditions in rural Victorian England, noting the establishment of public health authorities under the Public Health Act of 1872 and the Housing of the Working Classes

Act of 1890, which aimed to improve living conditions and address health issues in slums. Nightingale highlighted that the full enforcement of these laws could render some rural areas uninhabitable due to poor sanitary conditions and pointed out that enforcement was often lacking. She critiqued the effectiveness of public health agents and advocated for reforms, including educational initiatives, better waste management, and improved sanitation. Nightingale also emphasized the need for trained nurses and Health Missioners in rural districts to educate communities on health practices. She further discussed the role of women in "health at home," stressing the importance of maternal education, personal hygiene, and proper nutrition, and outlined the training of Health Missioners to improve rural health through effective teaching and supervision.

3.2.1. Situation of Public Health in Rural England

The Public Health Act of 1872 established public health authorities in rural and urban sanitary districts [21]. The first topic of Nightingale's speech at the Leeds conference was an analysis of the public health situation in rural England. The Boards of Guardians, established by the Poor Law Amendment Act of 1834, were the sanitary authorities in the United Kingdom [22]. This Act, known as the "New Poor Law," created around 600 "Poor Law unions" by grouping local parishes, each governed by an elected local Board of Guardians. The primary aim of the Boards of Guardians was to manage the relief of the poor at the local level through measures such as the establishment of workhouses. According to Florence Nightingale, the Boards of Guardians showed minimal dedication to public health, despite its significant impact on the working classes and broader public health.

Another key figure in public health management at the time was the Medical Officer of Health. In 1847, Dr. William Henry Duncan was appointed as the first Medical Officer of Health for the city of Liverpool [23]. His legacy endures as a pioneer in the field of public health, dedicated to reducing the spread of diseases and improving sanitary conditions. During his tenure, he advocated for improved housing and sanitation standards within the city, addressing deplorable living conditions. His efforts were instrumental in laying the groundwork for future public health initiatives. The Public Health Act of 1848, along with the establishment of local boards of health, further solidified the role of Medical Officers of Health across Britain [24].

When examining the contemporary situation of Medical Officers of Health in rural Britain, Nightingale notes that they often need to maintain a private practice to sustain themselves due to inadequate compensation. Consequently, these officers are frequently overworked, balancing a private practice with their public health duties, and their effectiveness is often compromised because they are appointed by the very individuals they are supposed to evaluate.

The Public Health Acts of 1872 and 1875 underscored the need for well-trained sanitary inspectors, who were responsible for overseeing the implementation and enforcement of sanitation regulations, housing conditions, water distribution, sewage management, and waste disposal [25][26]. While the Sanitary Institute and other professional organizations made efforts to enhance the qualifications and reputation of these inspectors, Nightingale, in her speech, criticized their frequent lack of accountability and knowledge, which posed potential risks to public health. She highlighted that sanitary inspectors were often appointed without the necessary qualifications, frequently lacking essential knowledge, and accountability.

Another topic covered by Nightingale in the first part of her speech was the Housing of the Working Classes Act of 1890, which aimed to improve the living conditions of the working class in the United Kingdom. Local authorities were empowered to identify and regulate health conditions in slums and overcrowded areas and to oversee housing development for the displaced rural population [27]. Nightingale asserted that if the law were fully enforced, several rural areas would be deserted, as their hygiene and sanitary conditions did not meet the standards set by the regulation. Additionally, the law was not enforced because the conditions of some small rural businesses did not comply with public health requirements.

3.2.2. Reform Requirements to Enhance Public Health in Rural Districts

In the second part of her work, Florence Nightingale proposed essential reforms to improve public health in rural districts. She believed that the foundation of better sanitation in rural areas lies in education. Nightingale was a steadfast advocate of the idea that the quality of nursing care is contingent upon educating both the public and health professionals. Indeed, she founded the world's first nursing school at St. Thomas's Hospital in London. Concerning rural hygiene, educational reform should commence in schools, encouraging students to commit to health practices. Additionally, awareness campaigns would be necessary to educate rural communities on avoiding health hazards such as contaminated air and water, with a particular emphasis on ventilating bedrooms to ensure optimal health.

Domestic sanitation measures should focus on managing manure by promoting the frequent removal of sewage waste to agricultural land, thereby reducing refuse and enhancing agricultural productivity. The community would bear the cost due to the benefits of improved health and increased food production. Furthermore, the proper utilization of gardens and allotments for waste management is encouraged, with solutions provided for villages with limited garden space by ensuring access to allotments.

Nightingale also outlined the ideal roles and characteristics of sanitary agents:

- **Medical Officer of Health:** The County Council should have the authority to appoint and dismiss the Medical Officer of Health as necessary. These officers would be expected to complete professional training, particularly concerning contagious diseases, and must share relevant information with their district's population.
- **Sanitary Inspector:** The appointment of the district's Sanitary Inspector must be approved by the Medical Officer of Health. These inspectors should be properly trained and qualified through the intended examination, and it must be possible to remove them from their position if they neglect their duties.
- **Nursing Care:** Every rural district should be under the care of a fully trained nurse and a health missionary, who would be responsible for teaching the rural population health and sanitation practices.

3.2.3. The Role of Women in Home Health

The subsequent section of Nightingale's paper on rural hygiene addresses the role of women in "health at home." This discussion examines the roles and influence of Victorian women within the broader context of Victorian society, characterized by rigid social structures and fixed gender expectations. During this era, men and women occupied distinctly separate spheres: women were confined to the private realm of home and family, while men engaged in the public domain of the marketplace, citizenship, and civil society. Consequently, Victorian women were primarily defined by their domestic roles. Queen Victoria epitomized the ideal of femininity, emphasizing motherhood, family, and respectability.

However, noble women, in addition to their domestic duties, also had a public presence through philanthropic and patronage activities. These women were involved in charitable actions and, like Florence Nightingale, cared for the ill and poor, reflecting their sense of social duty and responsibility. Despite the charitable profile of aristocratic women, nurses before Nightingale were predominantly lower-class women without formal training. These nurses endured challenging conditions and were relegated to low status without social recognition.

In her speech, Nightingale highlighted the role of women as mothers due to their importance in the education of children, imparting values such as obedience and gentleness, and their crucial role in maintaining a healthy environment. Personal hygiene and appropriate clothing choices were emphasized as vital aspects of healthy daily living. Maintaining body cleanliness and managing personal care items in good sanitary condition minimizes the risk of spreading germs. Additionally, clothes should be changed regularly to uphold hygiene and comfort standards.

Nightingale's work also emphasized the importance of good eating habits, especially for children, who should receive the necessary nutrients to prevent diseases and enhance their well-

being. Regarding the care of children, Nightingale stressed the importance of recognizing and managing common childhood illnesses and providing a nurturing environment.

3.2.4. Health Missioners and Their Role in Public Health in Rural England

In the subsequent section, Florence Nightingale discusses the implementation and organization of a training program for Health Missioners in rural districts. Within this framework, the Medical Officer of Health, appointed by the appropriate local authority, plays a pivotal role. The Medical Officer of Health would be responsible for the training and supervision of the Health Missioners' activities, ensuring they effectively teach appropriate hygiene practices to the women of the rural community.

The training program would encompass both theoretical and practical components. The theoretical aspect would cover knowledge from various disciplines, such as physiology, while the practical training would involve visits to women living in cottages. Candidates selected for training are expected to possess a "good character" and the ability to establish personal relationships with rural women. This capability is essential for teaching in a simple and engaging manner, fostering participative learning and the sharing of experiences. The concepts taught must be relevant and applicable to the daily lives of village women.

Upon completing their training, Health Missioners would be examined by an independent examiner and the Medical Officer of Health, who would then recommend their employment to the local authorities. The Health Missioners would work under the supervision of the Medical Officer of Health, who would also evaluate the impact of their work. Once a generation of Health Missioners has been established, they could mentor other women, accompanying them on visits to cottages.

3.2.5. Building Trust and Measuring Success: The Role of Health Missioners in Rural Women's Education

In the concluding part of her speech, Florence Nightingale explores the collaboration between rural Health Missioners and the women they mentor. She emphasizes that Health Missioners must be capable of establishing personal relationships with rural women, as this is crucial for building trust. Health Missioners should demonstrate interest and empathy towards rural women to tailor the training to their specific needs and integrate the teachings into their daily routines.

Nightingale asserts that the success of the program should be measured not by the number of classes conducted by the Health Missioners, but by the improvement in the quality of life of the women they mentor. The goal is to secure a long-term commitment from the women, ensuring that visits from the Health Missioners result in sustained enhancements in hygiene and sanitation practices. Achieving this requires the support and dedication of the rural community.

4. Discussion

Florence Nightingale's contributions to the development of specific practices for managing health in rural areas are indisputable. Following the publication of *Notes on Nursing*, in which she outlines and analyzes basic hygiene measures for the domestic environment, Nightingale aimed to implement these practices within English homes. She understood that for rural housewives to adopt these measures effectively, an educational program was essential. This program was designed to train women who could establish personal relationships with rural families and instruct them on how to maintain a healthy home environment. By focusing on education, Nightingale sought to ensure that these hygiene practices would be integrated into the daily lives of rural households, thereby improving overall public health.

The role of Health Missioners, as envisioned by Nightingale, is analogous to that of contemporary health visitors. Health visiting is now a well-established and regulated profession in the United Kingdom and other English-speaking countries. The primary function of health visitors is to provide support and assistance to families within their home environment. Specifically, with the arrival of a new family member, health visitors assist new parents with baby care and offer information on healthy self-care practices and minor health issues. In this context, Florence

Nightingale's "Health at Home" program can be viewed as a significant success and a foundational achievement in public health in the United Kingdom. By pioneering this approach, Nightingale not only addressed immediate health concerns but also laid the groundwork for modern public health practices that continue to benefit communities today.

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