

Health Problems Associated With Urbanization And Industrialization

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Abstract: *Industrialization process in Nigeria is a key government response to job creation and the overall development of the country. Specific cities in the country's six geo-political zones have been earmarked as industrial areas with massive investment both by local and international investors. One major side effect of this development however, is the production of waste effluents that are hazardous to human health. Industrialization has developed modern megacities whose way of life is heterogeneous with that in the villages. Rural poverty has pushed villagers to the cities, which were never planned to accommodate immigrants. Public health and social problems have arisen lowering the quality of life. Problems of pollution, crime and chronic morbidity increases. This can be seen as more people migrate from the rural areas to the urban areas. There is increase demand on healthcare as there is limited health care facilities, personnel and services. This can be seen cities like Lagos, Abuja, Port Harcourt just to name but a few. This article is focused on health problems associated with urbanization and industrialization, and it's implications to nursing in Nigeria.*

Keywords: *Urbanization, Industrialisation, Health problems, Implications to Nursing.*

I. INTRODUCTION

The evolution of cities in the 20th century reflects changes in global and domestic political and economic fortunes (Chang, 2016; Mosse, 2018). The health of urban populations has changed as cities have evolved. Although there are few reliable data linking changes in urbanization to the changing health status of populations, health in cities has frequently mirrored the population movement and growth that have shaped the urban landscape (Tong, Hansen, Hanson-Easey, Cameron, Xiang, Liu, & Bi, 2015; Watts, Adger, Agnolucci, Blackstock, Cai, & Cox, 2015; Giles-Corti, Vernez-Moudon, Reis, Turrell, Dannenberg, Badland, & Owen, 2016; Hassell, Begon, Ward, & Fèvre, 2017). In the United States and in many of the world's wealthier countries, cities at the turn of the 20th century were plagued by infectious diseases associated with population crowding (Pullan, Smith, Jasrasaria, & Brooker, 2014; Grossmann & Varnum, 2015; Merler, Ajelli, Fumanelli, Gomes, & Vespignani, 2015; Prüss-Üstün, & Neira, 2016; Wallace &

Wallace, 2016). Epidemics of influenza, typhus, and tuberculosis killed millions of people in cities with poor sanitation and squalid living conditions (Birn, 2016).

After a revival in the middle of the century, the fiscal crises of the 1970s were paralleled by growing disparities in the health of urban residents when compared with suburban and rural populations. Rates of infectious diseases, chronic diseases, and mental health disorders were higher among residents of cities than the general population (Prince, Wu, Guo, Robledo, O'Donnell, & Yusuf, 2015). In addition, the emerging human immunodeficiency virus (HIV) epidemic and the rise of cocaine use in the 1980s exacerbated the problems faced by urban areas and compounded the growing burden of urban disease. A seminal article in the early 1990s found that the mortality rate among males in northern Manhattan, New York City, was higher than the mortality among men in Bangladesh (McCord & Freeman, 1990). Similarly, in less-wealthy countries, infectious diseases (e.g., malaria) were the largest contributors to morbidity and mortality in urban areas throughout the 20th century (Guariguata, Whiting, Hambleton,

Beagley, Linnenkamp, & Shaw, 2014; World Health Organization, 2015). However, at the end of the century, a growing urban middle class in many of these cities was accompanied by a rise in chronic diseases, resulting in a “double burden” of disease affecting many of the world’s most populous cities (Wang & Moriarty, 2018). The role that public health interventions played in the control of urban disease epidemics is well documented. However, research about the features of modern urban areas and the facets of urban living that influence health has been relatively sparse.

During the past several decades, urban health research in North America focused on the burden of disease in inner-city areas (Eggleston, Buckley, Breysse, Wills-Karp, Kleeberger, & Jaakkola, 1999; Eggleston, 2007; Keet, McCormack, Pollack, Peng, McGowan & Matsui, 2015). Different academic disciplines have studied the health of marginalized groups without fully exploring the role that the urban context played both in the marginalization of the groups and in shaping the health status of these populations. For example, a large body of research about the health of drug users, particularly with respect to the spread of HIV and other infectious diseases, has explored individual risk behaviours that are important within this group, often with a limited focus on how living in cities affected these risk behaviors (Clarke, Keenan, Bergin, Lyons, Hopkins, & Mulcahy, 2001; tran Hien, nguyen Binh, Devillé, van Ameijden & Wolffers, 2001). Other work has focused on the health of minority populations, groups that have historically been over-represented in urban areas. For example, there is a growing appreciation of the excess burden of cardiovascular disease and diabetes among urban African American populations in the United States. However, relatively little work has been done that sheds light on the relation of this burden of disease to the concentration of minority groups in urban areas (Yusuf, Reddy, Öunpuu, & Anand, 2001; Kearney, Whelton, Reynolds, Muntner, Whelton, & He, 2005; Agyemang, Meeks, Beune, Owusu-Dabo, Mockenhaupt, Addo & Spranger, 2016). The role that the urban environment plays in shaping health and disease is itself of interest. Understanding urban factors that are health risk or protective factors can capitalize on the positive aspects of health living and lead to the development of appropriate interventions and preventive measures.

II. URBANIZATION

There is no doubt that urbanisation is the increased migration of people into an area. To characterize the unique role cities may play in shaping health. Consideration of the definitions of *urban* is helpful. Although this discussion began with an assumption that readers share a common, clearly defined notion of what constitutes an urban area, there is little consensus among national and international bodies about what may be called urban. The US Bureau of the Census defines an urbanized area in the following way:

An urbanized area comprises a place and the adjacent densely settled surrounding territory that together comprise a minimum population of 50,000 people.

. . . The “densely settled surrounding territory” adjacent to the place consists of territory made up of one or more

contiguous blocks having a population density of at least 1,000 people per square mile (Department of Commerce, Bureau of the Census, 2010).

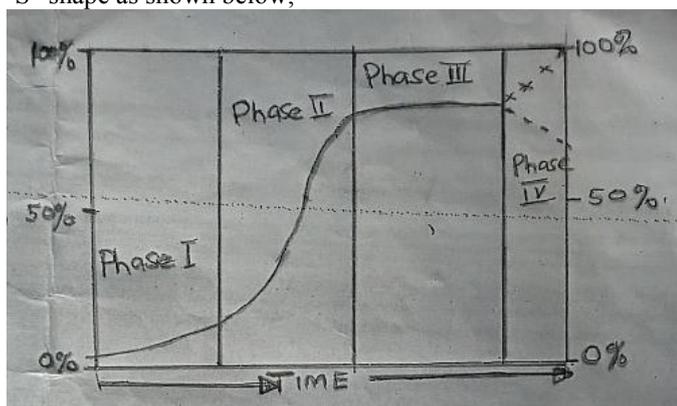
The Census Bureau thus provides a dichotomy by which territory, population, and housing units outside the specific size and density parameters are designated nonurban areas. While the definition provides two useful parameters (size and density), it also raises questions. First, one may consider if urban exists in contrast to rural or simply in contrast to nonurban areas. Although it is tempting to classify urban versus nonurban dichotomously, a more nuanced appreciation of gradations of urbanicity may also be helpful. In the early 21st century, relatively few cities existed in isolation, clearly set apart from other urban areas by vast underpopulated space (e.g., Las Vegas). Most cities (e.g., New York City) are part of a far-reaching densely populated area that continues uninterrupted for miles beyond the city centre. This last, more common, situation is also characterized by the growing convergence of urban and suburban areas in the United States. Over time, there has been expansion of both populations and of features of urban living (and their consequences) in the periurban areas. For example, in many US cities, the late 1990s witnessed an outmigration of the health problems (e.g., HIV, violence, substance use) more typically associated with inner-city areas. Thus, a dichotomous definition of urban fails to recognize the periurban (frequently referred to as suburban or greater metropolitan areas) areas that may share some characteristics of cities and may have “typically urban” health conditions (Wickramage, Siriwardhana, Vidanapathirana, Weerawarna, Jayasekara, & Sumathipala, 2015). A second set of questions that arises from the Census Bureau definition pertains to the absolute size and density parameters. Although a “threshold” population size facilitates demographic analyses, it is conceivable that areas with fewer than 50,000 people, particularly in sparse vast populated areas, may also share many characteristics of cities.

The definition of urban also varies widely among countries. Among 228 countries for which the United Nations has data, about half use administrative definitions of urban (e.g., living in the capital city), 51 use size and density, 39 use functional characteristics (e.g., economic activity), 22 have no definition of urban, and 8 define all (e.g., Singapore) or none (e.g., Polynesian countries) of their population as urban. Official statistics (i.e., all the statistics above) rely on country-specific designations and do not use a uniform definition of urban. In specific instances, definitions of urban in adjacent countries vary tremendously (e.g., Burundi vs. Congo) (WHO, 2000). Thus, global statistics on urbanization depend on international definitional differences that may be as much a function of statistical expediency as of an effort to characterize urban as a distinct construct. Compounding these difficulties, definitions of urban have changed over time in different ways in different countries. Thus, what we may call urban in different settings may have included city centres, peri-urban fringe cities, and densely populated isolated regions. Although this lack of uniform definition may hinder investigation of what is unique in urban versus nonurban living and its relation to health, it also highlights the dynamic nature of urban as a construct and the extent to which the process of urbanization in addition to the condition of being urban are important

considerations. The diverse definitions of urban suggest that a core set of characteristics, driven by (although not exclusively) population size, density, heterogeneity, and distance from other such centres, are common to urban areas and shape the conditions of living within these areas. Both the process of urbanization and the conditions of urbanity need to be understood to study urban conditions and how they affect health and well-being. Thus, a growing number of relatively small cities throughout the world will contain most of the world's population in the 21st century, while a few megacities will undoubtedly face unique challenges. These projections highlight the importance of viewing urban health as an international issue. The urbanization process is due to two main factors or processes such as:

- ✓ Migration into the cities (mainly rural – urban migration)
- ✓ Natural or internal population increase in the cities (this is due to excess number of births over death).

Urbanization is usually explained with a curve with an ‘S’ shape as shown below;



Picture showing urbanization curve

The urbanization process is further divided into four phases as indicated in the picture above;

- ✓ **PHASE 1-** This is the initial stage which is an agricultural /primary production phase
- ✓ **PHASE 2-** Acceleration stage or industrialisation phase. For instance, most third world countries including Nigeria are in this phase and they are characterised by exponential growth of their urban population s growth.
- ✓ **PHASE 3-** The mature stage or post-industrial phase; in this stage, urbanization starts to flatten up and stabilises, however, most North Western European countries, USA, Canada are in this phase.
- ✓ **PHASE 4-** this is the final phase and it is uncertain what will happen in this phase, but two scenarios are likely to happen such as:-
 - Urbanization will continue to increase until the country is 100% urbanised. Japan is one example of such urbanised countries.
 - Large cities will lose their population and may witness decline in urbanization leading to counter-urbanization or de-urbanization. Large Western cities like London, Paris and Amsterdam etc. are witnessing gross decline in their population.

III. INDUSTRIALIZATION

Industrialization refers to a process which has occurred in the history of all economically ‘developed’ nation states and which remains an aspiration for most of the governments of those many populations which remain today relatively undeveloped (Castles, De Haas, & Miller, 2013). Through industrialization the economy of a country is dramatically transformed so that the means whereby it produces material commodities is increasingly mechanized since human or animal labour is increasingly replaced by other, predominantly mineral sources of energy in direct application to the production of useful commodities (Harper, Harper, & Snowden, 2017). Industrialization is a special case of the near-universal phenomenon of human trade and economic change (Ovin, & Gole, 2017). It refers to a period of marked intensification of such activity, which in all known cases has resulted in an irreversible change in a country's economy, after which the production and international trading of commodities remains permanently at a much higher level of intensity. This is largely because the factorial increase in productive capacities made possible by the technological shift in power supply simultaneously entails a wide range of accompanying transformations in the social relations of work, trade, communications, consumption and human settlement patterns and so, inevitably, also implies profound cultural, ideological and political change.

It would be extraordinary if such a thoroughgoing process did not have a range of significant health implications. Two of the oldest, most well-established relationships between economic activity, or trade, and population health are recognized to be mediated through the epidemiological implications of, firstly, regular social interaction between populations previously not exposed to each other's disease ecology, and, secondly, the increasingly dense permanent settlement of populations, which occurs in the form of towns occupying nodal or strategic points in trading networks. Both of these relationships have always been understood to be negative, in terms of the health of the populations exposed (Watts, Adger, Agnolucci, Blackstock, Byass, Cai, & Cox, 2015). It has always been realized that the lure and the material benefits of economic exchange between peoples possessing different resources and producing different commodities carry enhanced risks of the accompanying exchange of potentially fatal diseases. For example, the historical records of the early modern city-states of Italy, for instance, demonstrate their governments' attentions to a range of public health issues to do with the sanitary problems of packed, urban living and the periodic threats of imported epidemics (Rosen, 2015). The gradual expansion of international and intercontinental trade, including of course in persons themselves, throughout the subsequent centuries was characterized by a sequence of extraordinarily lethal epidemics of infectious disease, most tragic of all for the indigenous populations of the Americas.

However, despite these well-understood, long-standing negative health risks associated with urbanization and with trade, by contrast the process of industrialization has in general been considered to have a much more positive relationship with human health. There is of course a very

obvious intuitive reason for this. It is widely understood that industrialization was a necessary initiating historical process experienced by all today's 'successful', high per capita income societies (Coale, & Hoover, 2015). These are generally among the populations with the highest life expectancy at birth in the world today. This has been made possible by the advanced medical technology, better food supply, and increased material living standards as a result of the continuous process of economic growth they have all experienced ever since industrialization. The apparently compelling logical inference is that industrialization has improved human welfare and health (Little, 2018). This conclusion has been repeatedly supported during the course of the 20th century by a succession of research-based interpretations of the relationship between health and the kind of sustained economic growth made possible by industrialization (Marshall, 1927; Griffith, 1967; McKeown, & Brown, 1955; McKinlay, & McKinlay, 1977). The study of British economic history has played a particularly crucial role in informing this generally positive evaluation, partly because it was the first nation-state ever to industrialize but also because of the exceptionally high quality and quantity of its historical medical, epidemiological and demographic as well as economic data. This is due principally to the fact that the British nation-state, as a record-creating and preserving entity, has maintained its integrity throughout many centuries, resulting in the survival of a relative abundance of evidence.

As careful attention to the historical relationship between industrialization and health in the case of Britain and most other countries shows, the direct consequences of rapid economic growth on health are likely to be negative (Coale, & Hoover, 2015), for a set of long-understood epidemiological reasons. In fact the kind of dramatic transformation associated with the industrialization of an economy is especially likely to be negative in its immediate impact on health and welfare because of the profoundly disruptive nature of this change (Fine, 2018). The disruption is simultaneously multi-dimensional: social and familial relations, moral codes, ethical standards of behaviour, the physical and the built environments, forms of government, political ideologies and the law itself are all thrown into flux and tumult when a society experiences industrialization and the consequent population movements that are entailed. Such disruptions tend to cause forms of social deprivation to arise, which can lead to disease and ultimately to death for the most unfortunate and marginalized individuals—often children, migrants or ethnic minorities. These are the 'four Ds' of rapid economic growth: disruption, deprivation, disease and death (Szreter, 2001). They can only be addressed through political mobilization of the society to devise new structures, which can respond to the forces of disruption and remedy their consequences. This typically requires, at a minimum, massive investment in urban preventive health infrastructure, and an accompanying regulatory and inspection system, along with a humane social security system (Heymann, Chen, Takemi, Fidler, Tappero, Thomas, & Kalache, 2015; Reubi, Herrick, & Brown, 2016).

The lessons of history, therefore, are that all economic exchange entails health risks and that industrialization typically results in a particularly concentrated cocktail of such health risks. From a policy point of view, it is particularly

important that currently non-industrialized societies are neither encouraged nor forced to enter the industrialization process without a clear understanding of the difficult prospects which they face for at least a generation while undergoing this profoundly disruptive process. It may well be possible to avoid the undesirable fourth 'D' of death and possibly even the third 'D' of disease, given a sufficiently careful and thoroughgoing effort to manage and respond to the forms of deprivation which rapid economic growth produces as it transforms communities and relationships—something which Sweden may well have achieved during the last quarter of the 19th century (Reubi, Herrick, & Brown, 2016). Like the Swedish case, the British historical case also suggests that extremely committed, well-informed, well-funded, devolved and democratically responsive forms of local government may be more important than the central state in effectively managing the immediate negative health consequences of industrialization. However, ultimately, the redistributive resources and authority of the central state in a democratic society will undoubtedly become important in ensuring that long-term sustained economic growth continues to be a benefit to the health and welfare of the whole population, rather than merely a source of ever-increasing private wealth to a small proportion of individuals favoured by birth and by chance, which is a tendency inherent in the normal working of unregulated, free market capitalism (Coale, & Hoover, 2015).

The apparently intuitively obvious notion that the economic growth of industrialization must be straightforwardly beneficial for health has, thus, been shown to be based on a misleading simplification of economic and demographic history, though one which was apparently supported by now-obsolete historical and epidemiological interpretations of history. It is now increasingly emphasized by historical researchers that politics and government have played an all-important role in ensuring that the wealth accumulated by the socially divisive and competitive processes of market economic growth is recycled and redistributed throughout a society to ensure that it contributes more equitably to the overall population health and welfare of the vast majority of the citizens involved in the process as producers and consumers (Whitehead, Pennington, Orton, Nayak, Petticrew, & White, 2016). Unfortunately there is insufficient sign as yet that this understanding is informing the strategy of the most important international institutions which influence the future course of world development, notably the IMF and the WTO (the World Bank has been notably more ambivalent in its approach since the World Development Report of 1997). Policy prescriptions for the world's poorest countries need to recognize that their state and local government capacity has been dangerously decimated during the last two decades of neo-liberal, free market fundamentalism. Industrialization is a process that has occurred in history of economically development of nation, states and government (Frumkin, 2016). It is a series of radical changes and involvement of economic cultural and scientific overview of a specific place and remains a model to other undeveloped nations for example third world country for looks at the achievement of developed nations like United States and China. Conversely, health is the state of being physical, psychological and social well of an individual.

Industrialization refers to a process which has occurred in the history of all economically 'developed' nation states and which remains an aspiration for most of the governments of those many populations which remain today relatively undeveloped (Beckfield, Bambra, Eikemo, Huijts, McNamara, & Wendt, 2015).

According to Hugo (2017), urbanization is defined as the shift of population from rural to urban areas or a change in the ratio of the total population living in urban areas. Urbanization describes both the increasing footprint of urban areas and the increasing percentage of the urban population; this is closely linked with modernization, industrialization, and the sociological process of rationalization. Through industrialization the economy of a country is dramatically transformed so that the means whereby it produces material commodities is increasingly mechanized since human or animal labour is increasingly replaced by other, predominantly mineral sources of energy in direct application to the production of useful commodities (Tacoli, McGranahan, & Satterthwaite, 2015). Industrialization is a special case of the near-universal phenomenon of human trade and economic change. It refers to a period of marked intensification of such activity, which in all known cases has resulted in an irreversible change in a country's economy, after which the production and international trading of commodities remains permanently at a much higher level of intensity. This is largely because the factorial increase in productive capacities made possible by the technological shift in power supply simultaneously entails a wide range of accompanying transformations in the social relations of work, trade, communications, consumption and human settlement patterns and so, inevitably, also implies profound cultural, ideological and political change.

IV. HEALTH PROBLEMS ASSOCIATED WITH INDUSTRIALIZATION AND URBANIZATION

Not so long globally, the world celebrated World Environmental Day (June 5th, 2018). This year, microplastics were the topic for the celebration. Majority of the plastics end up in the ocean. These plastics are further broken down and eaten by sea creatures. Although some scientist have opined that micro plastics from these sea creatures when eaten by humans causes harm to humans, there is no evidence to support their claim (Law, & Thompson, 2014; Van Cauwenberghe, & Janssen, 2014; Eerkes-Medrano, Thompson, & Aldridge, 2015). Apart from plastics, air pollution due to industrialization and urbanization is one of the important issues in the current century, especially in developing countries (Goudarzi, Geravandi, Vosoughi, javad Mohammadi, & sadat Taghavirad, 2014; Van Cauwenberghe, & Janssen, 2014; Khaniabadi, Rashidi, Godarzi, & Zare, 2017). Air pollution is a serious risk, so much so that even low concentrations of air pollution can be harmful to human health (Kelly, 2003; Hosseini, Maleki, Amini, Mohammadi, Hassanvand, Giah, & Gharibi, 2014; Mohammadi, Godini, Khak, Daryanoosh, Dobaradaran, & Goudarzi, 2015). Epidemiological studies have shown that more than 80% of people age 65 years and over have one or more chronic

diseases, and approximately 50% of them have activity limitations (Zhou, Liu, Wang, Kuang, Xu, & Kan, 2014). Among ambient air pollutants, particulate matter (PM) is the pollutant with the most undesired adverse effects on human health (Mentese, Rad, Arisoy, & Güllü, 2012). Many studies have reported the strong correlation between PM concentrations and hospital admissions due to the chronic or acute respiratory and cardiovascular diseases (Wang, Feng, Zeng, Ma, & Shang, 2009; Taiwo, Harrison, & Shi, 2014; Nourmoradi, Goudarzi, Daryanoosh, Omidi-Khaniabadi, Jourvand, & Omidi-Khaniabadi, 2015).

PM with aerodynamic diameters of less than or equal to 10 μm (PM₁₀) has the greatest adverse impact on human health (Menetrez, Foarde, Esch, Schwartz, Dean, Hays, & Moore, 2009; Nourmoradi, Goudarzi, Daryanoosh, Omidi-Khaniabadi, Jourvand, & Omidi-Khaniabadi, 2015). Epidemiological studies have shown that more than 500,000 Americans die each year due to cardiovascular diseases associated with PM₁₀. Respiratory diseases are also hazardously attributed to PM₁₀ ((Abu-Allaban, & Abu-Qudais, 2011; Mirhosseini, Birjandi, Zare, & Fatehizadeh, 2013). In recent years, because of the Middle Eastern dust (MED) storms, especially from the Arabian Peninsula and Iraq, the areas of south, west and southwestern Iran have been affected by exposure to PM₁₀. MED storms have led to thousands of hospital admissions for cardiovascular and respiratory diseases (Shakour, El-Shahat, El-Taieb, Hassanein, & Mohamed, 2011; Heidari-Farsani, 2013). In china which is the most polluted country in the world, the risk of respiratory cancer is high compared to other countries irrespective of the population.

An example of cities with massive air pollution is Khorramabad is the capital city of the Lorestan province, in southwestern Iran. It has been exposed to large amounts of PM₁₀ as a result of MED events. The air quality health impact assessment (AirQ2.2.3) software is a program that has been applied to assess the health impact of PM₁₀ (Shakour, El-Shahat, El-Taieb, Hassanein, & Mohamed, 2011; Shahsavani, Naddafi, Haghhighifard, Mesdaghinia, Yunesian, & Alimohamadi, 2012; Zallaghi, 2014), and several studies have been carried out to examine the relationship between health impacts and PM₁₀ concentrations. Fattore et al. (2011) showed a relationship between health impacts and air quality using AirQ software in two municipalities in an industrialized area of Northern Italy. Also, Shahsavani et al. (2012) reported that high concentrations of PM due to dust events caused adverse effects to human health during dust storms in Ahvaz, Iran. The longest dust events in their study happened in July, lasted five days, and had a peak PM₁₀ concentration of 2028 $\mu\text{g}/\text{m}^3$. Zhou et al. (2014) showed that there was a significant association between PM₁₀ concentrations and mortality from cardiopulmonary diseases in middle-aged Chinese men. In another study, Zallaghi et al. (2014), demonstrated that cardiovascular and respiratory mortalities, as well as hospital admissions due to such diseases, were increased by exposure to PM in Ahvaz, Iran. Similarly, Jeong (2013), reported the relationship between PM₁₀ concentrations and total mortality, cardiovascular and respiratory mortality, and hospital admissions for cardiovascular and respiratory diseases. Mohammadi et al. (2015) showed that the largest numbers of deaths occurred because of an increase in the number of dusty

days. Also, several similar studies, such as Gharehchahi et al. (2013), Brook et al. (2010), were conducted to assess air quality in terms of PM and its health risks to humans. It is worthy to note that their findings agrees with Mohammadi et al. (2015).

V. POSITIVE EFFECTS OF INDUSTRIALIZATION ON HEALTHCARE DELIVERY

- ✓ Easy access of health services.

Through good infrastructures like roads they provide transportation of individuals to the healthcare facility for example hospital clinics and dispensaries. It has also ensured transportation of healthcare practitioners and their equipment to remote and marginalized communities to provide health (Shi, & Singh, 2014).

- ✓ Industrialization has led to provision of essential machines.

Machine like defibrillators, electrocardiogram and suctioning machines are used in diagnosing of disease and treatment of diseases thus enhancing health and reducing pain and also help the healthcare providers to distinguish between the normal and abnormal body changes and also prevents complication from occurring (Stanhope & Lancaster, 2015).

- ✓ Enhances research and study of different health hazards.

Through industrialization history of diseases are documented and helps in future research on factors affecting health and healthcare deliveries. This study has helped us to know different causes of diseases and their mode of transmission and thus helps us in preventing the disease.

- ✓ Enhancement of better communication.

Through development of industrialization good communication media was developed between healthcare providers and their colleagues and also or other individual in the society thus ensuring effective healthcare providence for example through telephones, internet and mail services patients are able to communicate with their doctors thus facilitating healthcare delivery (Santilli, & Vogenberg, 2015).

VI. NEGATIVE EFFECTS OF INDUSTRIALIZATION ON HEALTH AND HEALTHCARE DELIVERY

- ✓ Although industrialization has got the merits in health and healthcare delivery, it has also got the demerits of which hinder health and healthcare delivery by healthcare providers.

Urbanization. Industrialization led to migration of people from rural areas to urban regions leading to overpopulation and overcrowding thus resulting to poor health practices due to congestion and development of slums. Individuals are more susceptible in contracting diseases which results from overcrowding for example tuberculosis. Overcrowding also lead to easy spread of diseases of individuals in overcrowded area. Urbanization has led to poor healthcare delivery due to increase in number of population more than healthcare practitioners (Eckelman, & Sherman, 2016).

- ✓ Pollution. Due to rapid industrialization and more building of industries pollution in rivers and water bodies and also release of smoke to the atmosphere can lead to diseases for example cancer and respiratory diseases and can also lead to genetic disorders if one is exposed to radioactive chemicals thus leading to deformities of which affect health of an individual (Pillai, Hodgkinson, Kalyanaram, & Nair, 2017).

- ✓ Spread of diseases. Overpopulation in urban areas has led to the spread of diseases for example cholera, tuberculosis and all other diseases of which are spread through contact, airborne or waterborne thus leading to deteriorating of health to individuals. The diseases are not easily controlled due to huge numbers affected (Li, Li, & Zhang, 2018).

- ✓ Industrialization has led to emergence of social class and corruption. This has led unfair distribution of resources among healthcare facilities thus affecting healthcare delivery. Individuals with low status in society are not able access healthcare facilities with well equipped with quality diagnostic equipment thus the provision of care depends on poor health delivery (Gollin, Jedwab, & Vollrath, 2016).

VII. IMPLICATION FOR NURSING

Nurses and the Nursing profession no doubt benefit from industrialization and urbanization. The opportunities and threats industrialization and urbanization poses to health, in particular increasing rates of non-communicable diseases is huge. Nursing is challenged with responding to the changing health needs of the global population that have arisen as a result of industrialization and urbanization. This seminar informs nurses of the alarming environmental effects that the health care industry is faced with and to suggest a clear, direct course of action to improve our environmental impact. Nursing profession and nurses have to be prepared and continuously updated on more health challenges arising from industrialization and urbanization.

VIII. CONCLUSION

Industrialization and urbanization are closely related. Their effect on health greatly affects humans and is responsible of high mortality rate. Understanding the effects is key to preventing and reducing illnesses and deaths. Although most countries especially developing countries are working towards becoming industrialization and having urbanized cities and towns, there is need for such countries to consider the health implication of such development. This is because the harmful effects of industrialization and urbanization are never discussed when issues of industrialization and urbanization are discussed especially politically.

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