

Quantitative Analysis of Community-Level Epidemiological Transition in Post-Industrial Urban Environments

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Abstract. This study evaluates the epidemiological transition at the community level in urban environments that have undergone post-industrial economic shifts. Using a combination of GIS data, health surveys, and socioeconomic indicators, we identify key shifts in disease prevalence and health outcomes. The analysis reveals a significant correlation between economic restructuring and public health dynamics, particularly in marginalized communities. These findings underscore the necessity for targeted public health interventions to mitigate adverse health impacts during economic transitions.

Keywords: epidemiological transition, post-industrial urban environments, public health dynamics, non-communicable diseases, health inequities, geographic information systems, socioeconomic indicators, economic restructuring

Introduction

In recent decades, the global landscape of public health has experienced a profound transformation, driven by shifting socio-economic paradigms and urbanization. This transition poses complex challenges, particularly in post-industrial urban environments where economic restructuring has outpaced public health infrastructure and policy adaptability. The epidemiological transition theory, which describes the shift from

infectious to chronic diseases as societies develop, provides a critical framework for understanding these dynamic changes at the community level. Urban centers that were once heavily dependent on industrial economies are now facing unique public health challenges as they transition towards service-oriented economies. This shift has resulted in altered healthcare needs, with a notable rise in non-communicable diseases such as diabetes, cardiovascular conditions, and mental health disorders. Furthermore, these changes disproportionately affect marginalized populations, highlighting significant health inequities that necessitate targeted intervention strategies. Our study conducts a quantitative analysis, employing geographic information systems (GIS) and comprehensive health surveys, to map the epidemiological transition within specific urban communities. By integrating socioeconomic indicators, we aim to elucidate the relationship between economic transformations and health outcomes. This paper is structured as follows: Section II provides a detailed review of the literature on epidemiological transitions in urban settings. Section III outlines the methodology, including data sources and analytical techniques employed. Section IV presents the findings, and Section V discusses the implications for public health policy and practice. The conclusion offers strategic recommendations for future research and intervention.

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References

1. Бортный Н.А., Сиротников Е.Л., Бортная Т.Н. Нарушения гемодинамики у пациентов с инфарктом миокарда левого желудочка в разные стадии его ремоделирования по данным лучевых методов исследования // Russian Electronic Journal of Radiology. — 2012. — Том 2. — № 2 (Матер. VI Всерос. Нац. Конгресса лучевых диагностов и терапевтов «Радиология — 2012», 30 мая — 1 июня 2012, г. Москва). — С. 93-94