

Article 6: Human Development and Medical Issues

Human development comprises biological, psychological, and social changes across the lifespan that can substantially impact medical outcomes. Particularly, aspects of human development such as **early life circumstances** (CDC, 2024; Gilbert et al., 2015), and **social determinants of health** (Cockerham et al., 2017; Marmot & Bell, 2019; NASEM, 2021) have been associated with a higher risk of **chronic diseases and wellbeing disparities**.

Early-life Circumstances and Medical Issues

Adverse early-life circumstances (particularly, those experienced in childhood and teenage years) have been associated with a wide range of chronic diseases and health disparities in adulthood (CDC, 2024; Gilbert et al., 2015),

According to the CDC, childhood experiences involving neglect, abuse, household dysfunction, and other adversities are associated with an increased risk of chronic diseases in adulthood, such as heart disease and depression. Stats looking at this phenomenon showed that 64% of adults in the United States reported experiencing at least one type of adverse circumstance in early life, ranging from emotional and physical abuse, to poor mental health or substance abuse in the household. Thus, estimates showed that up to 1.9 million heart disease cases and 21 million depression cases could have been potentially avoided by preventing adverse childhood experiences. Moreover, preventions could have helped reduced suicide attempts among high school students by as much as 89%, prescription pain medication misuse by as much as 84%, and persistent feelings of sadness or hopelessness by as much as 66%. Thus, the CDC stated that preventing adverse early-life circumstances could potentially reduce many health conditions in the United States, and vulnerable populations may be more at risk of experiencing such adversities due to historical, social, and economic disparities (CDC, 2024).

On that same note, a study examined whether adverse childhood experiences—such as abuse, household dysfunction, and neglect—were associated with a wide range of chronic diseases and disabilities in adulthood. Following that lead, researchers conducted a cross-sectional analysis using data from the 2010 Behavioral Risk Factor Surveillance System (BRFSS) survey administered by the CDC in 10 U.S. states, plus Washington, D.C. (Gilbert et al., 2015).

The pool of participants comprised over 50,000 adults and researchers assessed up to 9 types of adverse experiences, including physical or emotional abuse, family substance abuse, and parental separation, among others. Furthermore, adults reported whether they were dealing with conditions like cardiovascular disease (heart attack, coronary heart disease, and stroke), diabetes, asthma, disability, and overall poor health. Statistical models with adjusted odd ratios were computed to compare adults with exposure to adverse childhood experiences to health and disease-related risks (Gilbert et al., 2015).

Findings showed the following key points:

- High exposure to adverse childhood experiences was common (around 60% of participants reported going through at least one adverse childhood experience).

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- Even one single adverse childhood experience increased the likelihood of poor health, asthma, heart attack, and disability in adulthood.
- Dealing with 3 to 6 adverse childhood experiences was linked to significantly higher odds of diabetes.
- Dealing with 4 to 9 adverse childhood experiences was associated with increased risk of stroke and coronary heart disease.

Hence, researchers concluded that childhood adversities significantly raise the risk of multiple chronic diseases and disability later in life. Furthermore, the findings reinforce the importance of preventing childhood and teenage trauma as a public health strategy to reduce long-term disease burdens (Gilbert et al., 2015).

Social Determinants of Health and Medical Issues

Social determinants of health have been examined in relation to chronic disease and wellbeing disparities across the lifespan (Cockerham et al., 2017; Marmot & Bell, 2019),

For instance, a study examined how social and structural factors—such as education, income, neighborhood, discrimination, and social support—play a foundational role in causing and shaping chronic diseases like heart disease, diabetes, and obesity. For this purpose, researchers conducted a narrative review synthesizing key theoretical perspectives and research findings across multiple academic journals, health surveys, and meta-analyses. Moreover, they reviewed empirical studies within a conceptual framework, emphasizing four major theories in social epidemiology:

- Life Course Theory – Evaluates how early life conditions influence adult health.
- Fundamental Cause Theory – Examines how persistent socioeconomic inequalities translate into health disparities, even when medical treatments evolve.
- Social Capital Theory – Studies how ties and networks support health through shared resources and social cohesion.
- Health Lifestyle Theory – Considers how social context influences health behaviors like diet, exercise, and smoking.

Findings revealed the following insights:

- Lower socioeconomic status was consistently linked to higher smoking rates and greater mortality.
- Several theoretical connections were supported:
 - *Life Course*: Early adversity and low educational opportunities predisposed individuals to long-term health issues.

- *Fundamental Cause:* Even while experiencing health complications, wealthier groups were able to access treatment innovations faster, widening disease gaps.
 - *Social Capital:* Better-connected individuals and communities showed improved disease self-management and outcomes.
 - *Health Lifestyles:* Cultural values and group norms strongly influenced health behaviors.
- Neighborhood quality, discrimination, and social networks were key components shaping chronic disease patterns beyond individual risk factors.

Ultimately, researchers concluded that socioeconomic disadvantages compromise health through limited access, stress, unhealthy norms, and constrained resources. Furthermore, they stated that effective disease prevention must address the social factors at hand as much as clinical concerns (Cockerham et al., 2017).

Income as a social determinant of health also has had a profound impact on human development. Particularly, low-income individuals often face barriers to access quality healthcare, including health insurance coverage, preventive care, and chronic disease management, which often leads to health inequities and a higher prevalence of chronic conditions amongst vulnerable populations (NASEM, 2021).

For instance, a study looked at the relationship between non-communicable diseases—like heart disease, diabetes, obesity, and cancers—and social factors, such as education, income, housing, and early-life conditions (Marmot & Bell, 2019). Following that lead, researchers discussed analytical perspectives drawing on findings from the WHO Commission on Social Determinants of Health survey and peer-reviewed research, including data on social gradients and disease-related trends.

The following key findings were observed:

- **Social factors and risks to health:** People with lower socioeconomic status consistently had higher rates of unhealthy behaviors (poor diet, smoking, inactivity) and related conditions like obesity and diabetes.
- **Early life impact:** Adverse social conditions before and soon after birth often impaired cognitive development, affecting lifelong health, and self-regulation influencing lifestyle choices.
- **Access to care and health disparities:** Social determinants not only affected disease onset but also influenced the ability to access diagnosis, treatment, and effective disease management.

Hence, researchers argued that interventions must address these social constraints and span throughout several developmental stages in order to truly reduce disease-related burdens (Marmot & Bell, 2019).

References

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