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Perspective

Environmental Conditions and Daily Hygiene Practices Influencing the Skin Microbial Community in Low-Income Regions

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DESCRIPTION

Skin Microbiome refers to the diverse community of bacteria, fungi and other microscopic organisms that live on the surface of human skin. These organisms exist naturally and interact continuously with the outer layer of the body. Rather than causing disease in most situations, many of these microbes contribute to skin stability by competing with harmful organisms and supporting natural defense mechanisms. The composition of this microbial community varies between individuals and may change depending on environmental exposure, personal hygiene practices, climate conditions and overall health status. In low-income countries, these factors are strongly influenced by living conditions and access to sanitation resources. In the coastal city of Chittagong in Bangladesh, people experience environmental circumstances that affect both skin health and microbial balance. The region is known for high humidity, warm temperatures and dense population distribution. These conditions influence how microorganisms grow on the skin surface. Sweat production increases in humid climates, creating a moist environment where certain bacteria and fungi can multiply rapidly. When hygiene resources are limited or water supply is irregular, maintaining stable skin conditions becomes more difficult for many households. Human skin acts as a protective layer separating the body from external surroundings. On this surface, microorganisms form small communities that adapt to different areas of the body. Some microbes prefer oily regions such as the forehead or nose, while others survive better in drier areas such as the arms or legs. The balance among these microbial populations helps prevent colonization by harmful pathogens. When this balance shifts due to environmental pressure or personal habits, skin irritation or infection may develop.

In many neighborhoods within Chittagong, families rely on shared water sources for washing and bathing. Limited water availability sometimes leads to infrequent bathing, particularly during periods when municipal supply becomes inconsistent. When skin remains covered with sweat and environmental particles for extended periods, microbial populations may change. Certain organisms increase in number while others decrease, altering the normal balance that supports healthy skin. Occupational exposure also contributes to microbial variation on the skin. Many residents of low-income communities work in fishing, construction, agriculture or street markets. These occupations involve contact with soil, fish products, dust, chemicals and industrial materials. Repeated exposure to these substances may introduce new microorganisms to the skin surface. While some microbes remain harmless, others may cause irritation or mild infection when the skin barrier becomes weakened through repeated contact with irritants. Dietary patterns may indirectly affect the skin microbiome as well. In low-income households where food choices depend on affordability, diets often consist mainly of rice and a limited variety of vegetables or proteins. Nutritional intake influences the condition of the skin and immune activity within the body. When nutrition is limited, the skin barrier may become weaker, making it easier for harmful microbes to grow or cause inflammation. Balanced nutrition contributes to healthy skin structure, which supports stable microbial communities. Children living in crowded housing environments often experience frequent physical contact with family members and peers. This close contact allows microorganisms to transfer easily between individuals. While many of these microbes are harmless, some may cause temporary skin irritation or infection. When hygiene practices such as hand washing or regular bathing are difficult to maintain, microbial exchange becomes more frequent. School environments also contribute to this process because children interact closely during daily activities

CONCLUSION

In conclusion, the human skin microbiome represents an important aspect of dermatological health. These microscopic communities exist naturally and interact with the body in ways that support protection against harmful organisms. In low-income communities, environmental conditions, sanitation

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resources, occupational exposure and nutrition all influence the balance of microorganisms on the skin. Strengthening public health education, improving sanitation systems and encouraging responsible use of medications may help maintain stable microbial communities. Through these efforts, individuals in economically constrained regions may experience improved skin health and reduced risk of infection.