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Obesity in Migrant Populations: Epidemiology, Determinants, and Public Health Implications

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ABSTRACT

Obesity among migrant populations represents a growing public health concern globally, shaped by complex interactions between biological, social, environmental, and cultural determinants. Migrants experience unique health challenges related to acculturation, socioeconomic status, dietary changes, physical activity patterns, psychosocial stress, discrimination, and limited access to healthcare services. Evidence indicates that migrant groups often exhibit lower obesity prevalence upon arrival in host countries but experience accelerated weight gain and a higher risk of overweight and obesity over time. These changes are further influenced by generational shifts, maternal and child health factors, and exposure to obesogenic environments. Understanding the epidemiology, determinants, and health consequences of obesity in migrants is essential for designing culturally tailored, equitable, and effective public health interventions. Addressing these challenges requires integration of community engagement, culturally adapted lifestyle programs, preventive healthcare, policy measures, and consideration of social determinants to reduce obesity-related morbidity and enhance overall well-being among migrant populations.

Keywords: Migrant health, Obesity epidemiology, Acculturation, Social determinants of health, and Public health interventions.

INTRODUCTION

Migration is recognized as an important determinant of health and essential in understanding the epidemiology of obesity among migrant populations [1-4]. Migrants are exposed and vulnerable to physical and mental burdens not encountered in their country of origin, and significant differences exist between migrant and non-migrant populations with respect to health, risk factors, and access to health services [5-9]. In comparison with host populations, international migrants are at greater risk of certain health threats, such as communicable diseases, occupational hazards, unmet mental health needs, diabetes mellitus, and perinatal morbidity. On the other hand, they generally enjoy a mortality advantage, with life expectancy at birth greater in each World Health Organization region than for non-migrants [10-16]. However, migrants have less access to healthcare services and preventative measures, and they often face additional challenges when seeking care. Obesity risk following migration may evolve over time in the destination country. Oxygen and carbon dioxide exchanges in fat tissues occur constantly before, during, and after migration, contributing not only to population health but also to understanding how obesity risk changes at different life stages [17-23]. Furthermore, early and prolonged exposure to socio-ecological determinants of obesity following arrival is typically associated with quicker and greater increases in weight gain. International migrants exhibit a higher risk of becoming overweight and obese soon after they migrate and a greater risk of obesity and severe obesity more than a year later than the host country's residents. Both migrant and non-migrant populations may be subjected to the same risk factors; nevertheless, exposure to these factors may vary between groups and change over time. Immediately before and just after migration, some risk factors may even disappear. Pre-mixture and post-mixture period risk factor exposure is thus a promising arena for exploring global risk factor exposure differences. Migration can either

diminish or augment the determinants of obesity, and understanding these changes is essential for discerning the causes and determinants of the condition, particularly in the host population [24-26].

Epidemiology of Obesity among Migrants

The epidemiology of obesity in migrant populations has received increasing attention in recent years. Pooled analyses find consistent patterns across sex and migrant group but not region of origin or destination [27-30]. Migrant groups typically have a lower prevalence of overweight and obesity than the general population in the region of destination, but become more obese across the life course. However, temporal trends may differ in different locations [31-37]. In some countries and among some groups of migrants, incidence has been stabilizing or even decreasing in recent years [38-43]. Tailoring effective obesity prevention and treatment programs to the specific needs of each migrant group requires a fine-grained understanding of the epidemiology of obesity in migrants. In many high-income countries, most obesity-related health risks among migrants stem from metabolic syndrome. Compared to the native population, some groups exhibit higher prevalence of high fasting plasma glucose, high triglycerides, and elevated blood pressure; others show lower fasting insulin concentrations and diminished insulin resistance. A recent analysis in Australian-born adults found an inverse association between levels of income and body mass index and waist circumference in Chinese-born but not in other groups. Migrant families are at greater risk of gestational weight gain above the recommended range, and children in these families are more likely to be overweight or obese than those in non-migrant families [44-50].

Determinants and Mechanisms

An overview of the social determinants of a health risk is usually based on the association between income and obesity risk across populations, with detailed consideration of both risk and preventive factors [51-55]. This perspective is valuable but somewhat simpler than a comprehensive analysis that takes into account education, housing, neighborhood quality, the local food environment, and types of employment in the labor market, all of which shape the social risk of chronic illness [56-60]. In migrants, social determinants of obesity risk combine with acculturation into the receiving culture, the degree of dietary change following migration, changes in physical exercise during the acculturation process, chronic psychosocial stress, discrimination, and access to health care services capable of delaying or preventing obesity [3]. The degree of adaptation to the culture of the host country can be viewed as an index of the impetus towards a 'more Western' mode of life. Many studies suggest that advanced acculturation to a more Western culture is accompanied by an increase in Western eating patterns, especially greater consumption of a high-fat diet and a marked decline in physical activity. Often, this trend contributes to increased weight and obesity rates in the diaspora. Indeed, these changes are generally regarded as a strong stimulus for obesity [61-62].

Socioeconomic and environmental factors

Obesity in migrant populations is influenced by a set of socioeconomic factors that are shaped by the migration process itself [5]. The prevalence of overweight and obesity is known to correlate with education and personal income level, with individuals in more affluent circumstances being less likely to be affected [1]. The situation in high-income countries is somewhat more complicated. The least disadvantaged groups are less likely to be obese in such environments, whereas higher socioeconomic attainment is associated with increased obesity risk in low-income countries [4]. Migrants tend to settle first in neighbourhoods that offer affordable housing rather than those that provide opportunities for social advancement. The migrant population often gets employed in less prestigious jobs, experiencing higher job insecurity coupled with stressful working conditions. Over successive generations, migrants generally acquire increased education, better jobs, and greater social mobility, although certain groups become marginalised and do not unlock these opportunities [4]. A number of studies have demonstrated that deprivation has a negative impact on physical activity among minority ethnic groups, yet the differences observed in children's obesogenic lifestyles cannot be fully explained by deprivation [5]. Migration status has produced mixed findings; in a handful of cases, residence in supportive neighbourhoods attenuates weight gain for particular migrant groups. Stress that is related to the migration experience, such as social isolation, language barriers, lack of access to healthcare, job marginalisation, or potential for racism, affects the drive to seek support from others, which in turn contributes to obesity [4]. Chronic stress is linked to heightened food intake and engenders metabolic responses that are conducive to obesity. The migration experience, including perceived racism, has been shown to exert a significant influence on health status and outcomes [6].

Acculturation, dietary change, and physical activity

Migration leads to changes in environment, social networking, lifestyle, and behavior, causing acculturation evidenced through language, social participation, culture, and dietary patterns. Changes may be undesirable, given that acculturation and educational and economic integration follow distinctly different paths [2]. As migrants adjust to a new country and adopt some of its customs, their dietary patterns change in various ways: the sources of food change, the frequency of common foods changes, new eating habits develop, and the regard for some foods and food types changes [5]. Hypertension, obesity, and diabetes have gained widespread acceptance among

several migrant populations; unfavorable associations with pre-migration diets, demographics, and socioeconomics are reported. Nutritional transition also occurs among Iranian immigrants in Australia; however, the specific role of acculturation and the interaction between dietary habits and acculturation have not been adequately investigated [1]. Acculturation results in an increase in overweight and obesity. The prevalence of overweight and obesity is on the rise internationally as people migrate from low to high-income countries; nevertheless, the situation is reversed among particular groups, such as Meskhetian Turk immigrants, for whom the association with high acculturation remains positive. When esthetically concerned, the adjusted overweight and obesity prevalence is even higher in low-acculturated Meskhetian Turks than in high-acculturated ones [3].

Psychosocial stress, discrimination, and health behaviors

Psychosocial processes such as chronic stress and perceived discrimination shape health behaviours, impacting obesity risk [1]. Stressful life experiences can produce behavioural and biological changes that promote weight gain, including increased food intake, sleep disturbances, and decreased physical activity [5]. Migration-related stressors, including housing instability, unemployment or underemployment, adjustment difficulties, social isolation, loss of social status, excessive workload, exposure to racism, and discrimination, frequently motivate unhealthy coping behaviours, such as increased food consumption, sedentary conduct, and substance use. Individuals who perceive high levels of discrimination exhibit greater vulnerability to weight gain than those experiencing less discrimination [3]. Perceived discrimination is a common phenomenon among expatriates, and chronic exposure carries considerable health risks, including the risk of overweight or obesity. The relationships between perceived discrimination, stress, and weight change have been documented among African American and Meskhetian Turk (Ahiska) immigrant groups [4]. Meskhetian Turks view the loss of social status and economic hardship associated with migration as the most challenging aspect of their adjustment, a viewpoint that may also characterise other migrant populations.

Access to healthcare and preventive services

Little is known about obesity management among migrants. Health service utilization is often insufficient, especially for preventive screenings, and non-utilizers tend to be at higher risk of being overweight or obese [3]. Language barriers limit effective communication with healthcare providers, impairing patient-provider trust and the ability to follow treatment advice [5]. Moreover, patients with limited language proficiency are less likely to receive preventive services, which may contribute to worse obesity-related health. In some groups, having a usual source of care may mitigate the adverse impact of language discordance, highlighting the importance of continuity in care. For cases of severe obesity, participants also express interest in bariatric surgery, and adequate referral pathways are needed for a safe intervention [4]. Refugees require specific attention, as they often have a different experience of migration compared with economic migrants and may be at risk for inadequate healthcare access and continuity. Addressing these barriers requires an intersectoral approach, enhancing the provision of preventive services and risk communication among migrants and refugees, lowering language barriers through the training of health personnel, and ensuring continuity of care through the integration of low-threshold and language-concordant services into the primary care system[6].

Health Consequences and Comorbidity

Obesity prevalence is related to cardiometabolic risk factors and comorbidities that generate high societal costs for the healthcare system [2]. Cardiovascular disease, including coronary heart disease, congestive heart failure, hypertension, stroke, as well as type 2 diabetes, metabolic syndrome, some forms of cancer, gallbladder disease, and osteoarthritis, is related to obesity and is among the leading causes of death [4]. Recent studies show that some migrant populations are at increased risk of certain diseases, such as diabetes, cardiovascular diseases, and obesity. The evidence shows alteration of blood pressure, lipid profile, glucose metabolism, or body composition, which increases the likelihood of diabetes and cardiovascular disease, among some migrant populations AFTER migration [3]. Pre-migration profiles are needed to understand the health impacts of migration. With a higher prevalence of overweight and obesity in migrant populations than in the host population, there are still no data on the use of physical activity in migrant populations [5]. Widespread distribution of unhealthy foods among the migrant population is also a concern that needs attention. Obesity affects individuals' psychological health, including psychological distress, self-esteem, depression, and anxiety, and worsens because they receive stigma and discrimination associated with their obesity. Adolescents perceive the stigma caused by obesity more than adults, and migrant families may be at higher risk [6]. Migrants with obesity are more subject to weight stigma than non-migrants. Increased obesity prevalence among migrants raises concerns for maternal and child health. Obesity during pregnancy is linked to gestational weight gain, gestational diabetes, hypertensive disorders of pregnancy, type 2 diabetes, and miscarriage. Unfavorable birth outcomes, such as low birth weight, preterm birth, and stillbirth, have been associated with higher weight gain during pregnancy. Pediatric obesity remains a concern with increased prevalence among migrants [4]. Children from migrant backgrounds demonstrate distinct dietary

patterns, and these patterns may change with acculturation. The prevalence of excessive weight gain among children from migrant families 1 is higher than in the general population [5].

Cardiometabolic risk and metabolic syndrome

In Canada, Asian-Canadian males, Indigenous Canadians, Filipino, South Asian, and Arab immigrant females exhibit higher blood pressure compared to their non-immigrant counterparts [1]. In the United States, Hispanic immigrants experience lower rates of abnormal glucose tolerance when compared to all US immigrants; however, there is no difference in type 2 diabetes prevalence, and the prevalence of glucose intolerance is higher among black immigrant males compared to US-born black individuals [4]. The hypertension levels among Caribbean and Asian immigrant males originating from Trinidad and Jamaica and the Middle East countries, respectively, are also notably higher as compared to the prevailing statistics among their overseas-born groups in the United States [3].

Mental health comorbidity and quality of life

Obesity is associated with poor mental health outcomes and diminished psychosocial quality of life across most regions of the world, and evidence suggests that the extent of the association may be greater in migrant than in non-migrant populations [3]. Yet research on the relationship between body weight, obesity stigma, and mental health outcomes in migrants is still limited [4]. Depression and anxiety are the most frequently studied mental disorders, and perceived discrimination is often examined. Several lifestyle-related characteristics, including smoking, physical activity, sleep deprivation, and unhealthy eating behaviors, emerge as important pathways linking chronic stress to obesity development in migrants [5]. Coping strategies also appear to shape body weight in migrants, with problem-oriented coping helping to buffer against weight gain and emotion-oriented coping contributing to it. Women typically report poorer quality of life than men, but obesity is associated with reduced health-related quality of life for men and women [6]. Explanatory factors include increased weight-related stigma and greater bodily self-image concerns among women, alongside sex differences in the psychological and emotional consequences of being overweight. Evidence from Canada points to significant and consistent negative associations between body weight and quality of life; the observed association may reflect the combined effects of stigma, personal inferiority, and discrimination surrounding body weight, with these variables worsening physical and mental well-being[2].

Maternal and child health implications

Migrant families may be at increased risk for adverse maternal and infant health outcomes. Maternal obesity during pregnancy has been linked to gestational diabetes mellitus, hypertensive disorders of pregnancy, cesarean delivery, and postpartum weight retention [5]. Excess gestational weight gain is similarly associated with increased risk of these morbidities and with preterm birth and excessive neonatal weight [4]. Furthermore, newly arrived migrant women exhibit a high prevalence of inadequate gestational weight gain and, as a result, nonoptimal birth weight [1]. Maternal obesity and excessive gestational weight gain are also associated with increased risk of pediatric obesity. Periods of rapid growth following delivery and during early childhood are critical windows of opportunity when the risk of the child later becoming overweight or obese can be reduced. Expatriate and refugee families with a migrant or global background may experience a food transition and dietary change upon arrival in a host country, characterized by increased intake of available energy-dense foods, which may further increase their high risk of obesity and overweight [3]. In addition to maternal obesity, health behaviors of the parents or caregivers and other sociocultural factors contribute to the risk of obesity in early childhood [5]. Exposure to obesogenic environments associated with the often lower socioeconomic status of migrant families in the host country may compound the problem. Early intervention measures are recommended for these families to address changes in eating and physical activity behavior in the context of education and social integration [3].

Methodological Considerations in Migrant Obesity Research

Numerous methodological considerations can affect the rigour of obesity research among migrants. These include definitions of migrant status and obesity, selection of data sources, and choice of analytical strategies. The most pressing concerns are the lack of a standardized definition of migrant status and inadequately documented definitions of both obesity and migrant status [3]. With respect to migrant status, duration since migration, and country of origin are particularly relevant when assessing health risks. Data sources include surveys, administrative data, and longitudinal cohort studies; each has advantages and disadvantages related to representativeness, harmonization across population groups, sample size, and measurement bias. Finally, research on the causal determinants of obesity among migrants faces potential selection, information, and residual confounding [5]. The word migrant broadly refers to a person who moves from one location to another, either nationally or internationally, for a range of reasons [1]. By contrast, a formalized definition of migrant is seldom specified in surveys or epidemiological studies. In much of the applicable literature, migration is often interpreted according to the context of the country. Accordingly, it is essential to document country-level definitions of

migration, as well as migrant classification and duration since migration, in order to correctly understand the study results [4]. The World Health Organization Consulting Group on Obesity has defined overweight and obesity in adolescents as a sex-specific BMI-for-age greater than the 85th and 95th percentiles, respectively; they further provide detailed tables of age- and sex-specific BMI cut-off points for different age groups and populations (World Health Organization, 2008)[4]. Unlike the limit used in adults, the definition in children depends on the sex and age of the individual. In addition to this, the research on obesity among migrants is rarely assisted by direct information about economic, cultural, and social capital [5].

Definitions of Migrant Status and Obesity

Migration is a key determinant of health, introducing economic, physical, and psychosocial burdens with serious ramifications [3]. Obesity is a prime area of concern, as its prevalence and distribution often diverge between migrants and non-migrants. This can be due to genetic backgrounds, lifestyle behaviors, educational level, occupation, and time spent in the host country [4]. Consequently, research often centres on cross-sectional comparisons of migrant and non-migrant obesity rates, along with the factors and mechanisms that affect obesity risk [1].

Data Sources and Measurement Challenges

Following the analysis of definitions and operationalization, this section considers the data sources and measurement challenges of obesity among migrants [4]. Five types of studies are commonly cited in the literature: cross-sectional surveys, cohort studies, administrative data, longitudinal population-based studies, and qualitative studies [4]. Cross-sectional surveys and cohort studies aim to characterize general population health or associated risk factors; administrative data typically focus on specific health conditions; longitudinal population-based surveys monitor trends across a wide range of health aspects; and qualitative studies explore key issues, contexts, and determinants [1]. The different sources and foci of available studies may complicate the search for migrant obesity evidence. Harmonization is often hindered by institutional, legal, political, and cultural divergences among countries [5]. Even when migrant obesity data are available, studies may apply different definitions of migration or obesity. Administrative databases may contain indirect measures of adiposity, which cannot be easily compared and may represent inaccurate proxies [3].

Biases, Confounding, and Causal Inference

Selection bias, information bias, confounding bias, and residual confounding may affect studies that analyze the association between migrant status and obesity or its consequences [3]. Selection bias can occur when migrant populations are underrepresented in cross-sectional studies carried out in the host country. This is frequent in surveys that use a specific quota sampling strategy (e.g., by age and sex) and exclude other aspects of the sample, such as familial situation, income, housing, and work conditions. Cohort studies are less sensitive to selection bias, yet samples of outgoing and incoming migrants tend to be small [5]. Selection bias also arises when major health events or significant changes in health status lead to migration or when migration facilitates the alleviation of underlying health problems. Information bias can occur when migrant groups have greater difficulties in understanding questions or when health information obtained from the receiving country is erroneous or incomplete (e.g., hospital records). With administrative data, it is vital to guarantee that the definition of immigrant is specified and consistently adopted [5]. Residual confounding remains an issue even when detailed information about the social determinants of health is included in analyses. Varying definitions of obesity across studies make direct comparisons complex [3]. Consensus on which anthropometric measure should serve as the primary outcome is still lacking; waist circumference and waist-to-height ratio are increasingly advocated as alternative measures that better capture health risk. In addition, adiposity is often assessed indirectly through the use of surrogates [2].

Interventions and Public Health Strategies

Migrant populations disengaged from obesity research are at risk of being overlooked in public health initiatives, reducing equity in health and wellness [5]. To create suitable interventions and programs, even a moderate incidence of key risk factors or conditions should alert public health concerns. For migrant groups, the transference of sociocultural stigma, such as undesirable or intolerable, from origin to settlement also raises ethical considerations about the designation of vulnerable target groups, compounding the need for vigilance regarding migrant issues, including migrant obesity and healthy development [1]. The public health community has responded with migrant-specific policies, programs, and initiatives in some high-income countries. Initiatives founded on cultural sensitivity are aimed at conveying general health promotion or simple health education to migrant populations dangling on the perimeter of currently accepted migrant health issues and risks. These programs often target sectors with mental or behavioural health requirements [4]. Knowing the strategy associated with migrant obesity may help predict converging public health attention to reduce the risk to health status [2].

Culturally Tailored Lifestyle Interventions

Culturally tailored lifestyle interventions can foster improved diet and physical activity among migrant populations affected by obesity [5]. Culturally adapted strategies are proven to make interventions more effective in promoting healthy eating and increasing physical activity levels among diverse groups. Comprehensive systematic reviews emphasize that cultural sensitivity and explicit understanding of community characteristics enhance participation and outcomes in minority groups [4]. Several initiatives, including the PODOSA trial addressing type 2 diabetes and obesity risk among South Asians in the UK, underscore the importance of cultural adaptation in health promotion strategies [2]. These principles remain applicable across various health challenges, including adolescent sexual and reproductive health, tobacco cessation, and weight management. In Australia, West African women indicated that maintaining culturally relevant food options and dietary acculturation were critical for healthy eating, and the absence of culturally appropriate food was an important barrier to healthy eating. Intergenerational differences were observed in interpretations of culturally appropriate food, physical activity, and body image [3]. Cultural competence in obesity prevention programs was a priority among Sudanese refugees in Australia. Culturally relevant foods also featured prominently in the descriptions of optimal weight-loss interventions among Ghanaian German migrants, while acknowledgement of pre- and post-migration dietary habits was emphasized as an intervention prerequisite. Acculturation, barriers to healthcare access, and perceptions of care-seeking relevance also emerged as key determinants affecting dietary practices and intervention needs [3].

Policy and Environmental Approaches

An effective public health response to migrant obesity requires comprehensive policy measures addressing the underlying determinants of the epidemic. Two critical levers are policy and environmental approaches. Recent policy-oriented frameworks have suggested four categories of intervention to ensure healthy, sustainable, and equitable food environments: food availability, affordability, promotion, and information [1]. These categories are relevant to migrants, who commonly experience a double burden of undernutrition and obesity due to limited access to affordable, nutritious food [2]. Migrant women in particular face limited availability of healthy food options in both formal and informal city markets. Elements from multiple frameworks, including urban planning, food policy, food production and value chains, and multi-component community-based initiatives, can help mitigate the drivers and consequences of migrant obesity. The following are the four policy recommendations proposed by Delavari et al., each evaluated for applicability to migrant communities [6]. Urban planning approaches can promote spatial equity in urban environments by implementing measures such as health impact assessments of zoning and master plans, adequate public transport, safer routes to schools, and modification of market regulations that restrict access to healthy foods in informal markets [5]. Food policy provides tools to tackle the high prevalence of overweight and obesity among children of migrants. Regulations can control the placement and accessibility of unhealthy food options and reduce the marketing of energy-dense, nutrient-poor foods at public schools, particularly in deprived neighborhoods. Selective food taxes and environmental modifications can contribute to the same objective. As cities are important nodes for migrant integration, incorporating attention to food-choice equity in food policy can further contribute to these efforts [4].

Healthcare Access and Preventive Care Optimization

Migrant populations face substantial barriers in accessing preventive healthcare services. Low uptake of health checks has been noted among migrants in some countries, with language differences exacerbating the challenge [1]. Further, important screening and treatment opportunities for obesity remain missed [4]. Incorporating preventive care for obesity into existing checkups using culturally concordant pathways and easy-to-follow referral systems is essential. Migrants benefit from follow-up care when transitioning to general practice after an initial pre-migration consultation. Minimizing disruption in general practice continuity during pre-existing high-risk transition periods enhances health management [5].

Equity, Ethics, and Social Determinants

Migration-related determinants of health equity. Whenever trauma, war, persecution, or inequality force people to leave their homes, they suffer health and social disadvantages [6]. These disadvantaged conditions can affect the development of obesity. Distinct aspects of socioeconomics, environments, and cultures, including income, education, housing conditions, neighbourhood context, food environment, and access to physical activity, work conditions, and working hours, play a role in the obesity epidemic [5]. Vulnerable communities can be more prone to unhealthy eating patterns, inadequate exercise, and stress. Despite cultural differences related to lifestyle and obesity behaviours, decisions about lifestyle and food choice made by individuals and families depend on the options within these determinants [6]. Almost any negative stimulus can act as a driver of weight gain in any migrant population. The overall migratory process modifies the social determinants of health equity. Some might become more exposed to negative health determinants, others less exposed, and some even experience a beneficial shift. Whenever acculturation modifies a lifestyle towards physical inactivity and high unhealthy caloric intake,

overweight, obesity, and related chronic diseases can appear or increase [5]. Therefore, when considering the determinants of obesity in specific migrant groups, it is equally important to clarify whether these groups have increased, reduced, or maintained vulnerability. At an epidemiological level, migrant obesity research should provide a continuum to the assessment of health determinants [6]. Ethical considerations in research and program design. Informed consent must be sought from individuals before data is collected from them for health research; however, health systems or communities hosting migrant communities may wish to use these data for other purposes, including returning benefits to the host community. The conventional meaning of informed consent may be inadequate when conducting research in remote populations, whether in Maine or Malaysia; it may be important to ensure both that the value of the research is equivalent to the burden of the participants and that the whole community, not only individuals, receives potential benefits[5]. With these considerations in mind, many now advocate establishing formal ethical guidelines for research among people of various ethnic backgrounds, including Larsons' "seven conditions" the rights of each research participant must be protected, informed consent obtained, potential benefits returned to the community, customary taboos observed, the local community made a partner in the research, sensitive issues treated with care, and remove a researcher's power to identify an individual's answers. Whenever possible, the community involved should be the owner of the research data [1].

Migration-Related Determinants of Health Equity

Research on migration and health equity has focused on differential exposure and increased vulnerability to obesity-related illnesses, but the underlying reasons for such disparities and the development of targeted interventions remain largely unexplored [6]. Migrant populations in high-income countries face a greater burden of obesity and its comorbidities than the non-migrant population, but there is considerable variation across ethnic groups. Several factors mitigate the increased prevalence of these diseases, including income, education, and integration into the host country, and the degree of acculturation [6]. Nevertheless, as the length of stay increases, the risk of developing obesity-associated diseases in some migrant groups also increases, suggesting that many migrants in high-income countries tend to adopt a lifestyle characterized by a more sedentary way of life and consumption of energy-dense and nutrient-poor foods. This exposure-related increase in risk is also paralleled by a greater vulnerability in some groups that manifests in greater disease severity and earlier onset of disease than in non-migrants [5]. Disparities in the food environment, the housing and employment situation, and psychosocial stress factors such as perceived discrimination or concern about family members left behind add to the overall increased risk in specific migrant groups and deserve further attention in the context of health promotion and disease prevention [5]. Despite the observed differences in risk, few obesity prevention programs have been culturally tailored, and even fewer studies have evaluated potentially effective interventions [8-10]. Failure to consider differences within and between migrant groups has limited the effectiveness, scalability, and equity of action plans in high-income countries. Furthermore, health promotion and preventive strategies have rarely taken population migration into account. Increasing the number of prevention programs adapted for specific immigrant groups and overcoming the barriers preventing access to the healthcare system are key steps for addressing health equity [6].

Ethical Considerations in Research and Program Design

Research on ethical considerations emphasizes the importance of careful study design, especially concerning migrant groups [2]. A lack of evidence exists on migrant or generation status related to ethnic differences in health. When considered, amalgamations make it difficult to distinguish effects for specific migrant groups [3]. The topic is complex, involving factors like duration in the new country, country of origin, religion, ethnicity, socio-economic status, and environmental changes over time[6]. Patterns of health among migrant groups are dynamic and context-dependent, implying findings from one setting may not be applicable to others [11-15].

Community Engagement and Empowerment

Promoting community engagement and empowerment through participatory approaches and collaboration with stakeholders is essential when designing and implementing interventions to address obesity among migrants [6]. Participatory decision-making ensures that strategies are culturally appropriate, acceptable, sustainable, and equitable [6]. Co-development of programs, materials, and solutions with affected populations fosters ownership, resilience, and sustainability, maximizing long-term benefits. Empowering communities leads to knowledge and skills transfer for continued supporting activities in the future [6]. Capacity-building interventions create supportive environments for healthy behaviors through the transfer of knowledge and skills to specific groups, helping to maintain cultural and ethnic identities [5]. Recognizing the diversity among migrants, the community and social networks should be involved in intervention and evaluation processes. The degree of involvement and consultation may vary according to the migrant group. It is important to consider both formal and informal networks of workers, businesses, resident organizations, and local authorities in order to reach the target population and promote the initiative effectively [5].

CONCLUSION

Obesity in migrant populations is a multifactorial condition influenced by pre- and post-migration exposures, lifestyle changes, socioeconomic circumstances, and psychosocial stressors. Migrants are particularly vulnerable to obesity due to altered dietary patterns, reduced physical activity, and limited access to preventive healthcare services. Maternal and child health outcomes further exacerbate long-term obesity risk. Culturally tailored interventions, equitable policy measures, and community-based participatory approaches are critical for mitigating obesity risk and its associated comorbidities. Effective public health strategies must account for the heterogeneity of migrant populations, address social determinants, and foster empowerment through community engagement to promote sustainable health outcomes. Future research should prioritize longitudinal studies, standardized definitions of migrant status and obesity, and evaluation of intervention effectiveness to inform targeted policies and improve health equity.

REFERENCES

1. Murphy M, Robertson W, Oyebode O. Obesity in international migrant populations. Current obesity reports. 2017 Sep;6(3):314-23.
2. Ugwu OP, Ogenyi FC, Ugwu CN, Basajja M, Okon MB. Mitochondrial stress bridge: Could muscle-derived extracellular vesicles be the missing link between sarcopenia, insulin resistance, and chemotherapy-induced cardiotoxicity?. Biomedicine & Pharmacotherapy. 2025 Dec 1;193:118814.
3. Carrillo-Larco RM, Bernabé-Ortiz A, Pillay TD, Gilman RH, Sanchez JF, Poterico JA, Quispe R, Smeeth L, Miranda JJ. Obesity risk in rural, urban, and rural-to-urban migrants: prospective results of the PERU MIGRANT study. International journal of obesity. 2016 Jan;40(1):181-5.
4. Paul-Chima UO, Nneoma UC, Bulhan S. Metabolic immunobridge: Could adipose-derived extracellular vesicles be the missing link between obesity, autoimmunity, and drug-induced hepatotoxicity?. Medical Hypotheses. 2025 Sep 28:111776.
5. Choi JY. Prevalence of overweight and obesity among US immigrants: results of the 2003 New Immigrant Survey. Journal of immigrant and minority health. 2012 Dec;14(6):1112-8.
6. Delavari M, Sønderlund AL, Mellor D, Mohebbi M, Swinburn B. Migration, acculturation and environment: determinants of obesity among Iranian migrants in Australia. International journal of environmental research and public health. 2015 Feb;12(2):1083-98.
7. Paul-Chima UO, Nnaemeka UM, Nneoma UC. Could dysbiosis of urban air microbiota be an overlooked contributor to pediatric asthma and neurodevelopmental disorders?. Medical Hypotheses. 2025 Sep 12:111758.
8. Menigoz K, Nathan A, Turrell G. Ethnic differences in overweight and obesity and the influence of acculturation on immigrant bodyweight: evidence from a national sample of Australian adults. BMC Public Health. 2016 Sep 5;16(1):932.
9. Temircan Z. Predictors of Obesity, Acculturation, and Perceived Stress in Meskhetian Turk (Ahiska) Immigrants in the United States. Walden University; 2017.
10. Ugwu OP, Ogenyi FC, Ugwu CN, Ugwu MN. Gut microbiota-derived metabolites as early biomarkers for childhood obesity: A policy commentary from urban African populations. Obesity Medicine. 2025 Sep 1;57:100641.
11. Temircan Z. Obesity, Acculturation, and Perceived Stress in Meskhetian Turk (Ahiska) Immigrants in the United States. Afyon Kocatepe Üniversitesi Sosyal Bilimler Dergisi. 2022;24(4):1512-25.
12. Dondi A, Piccinno V, Morigi F, Sureshkumar S, Gori D, Lanari M. Food insecurity and major diet-related morbidities in migrating children: a systematic review. Nutrients. 2020 Jan 31;12(2):379.
13. Ugwu CN, Ugwu OP, Alum EU, Eze VH, Basajja M, Ugwu JN, Ogenyi FC, Ejemot-Nwadiaro RI, Okon MB, Egba SI, Uti DE. Sustainable development goals (SDGs) and resilient healthcare systems: Addressing medicine and public health challenges in conflict zones. Medicine. 2025 Feb 14;104(7):e41535.
14. Gee GC, De Castro AB, Crespi CM, Wang MC, Llave K, Brindle E, Lee NR, Kabamalan MM, Hing AK. Health of Philippine Emigrants Study (HoPES): study design and rationale. BMC public health. 2018 Jun 20;18(1):771.
15. Babatunde-Sowole OO, Power T, Davidson P, Ballard C, Jackson D. Exploring the diet and lifestyle changes contributing to weight gain among Australian West African women following migration: A qualitative study. Contemporary nurse. 2018 Mar 4;54(2):150-9.
16. Isaac Edyedu PMA, Ugwu OPC, Ugwu CN, Alum EU, et al. The role of pharmacological interventions in managing urological complications during pregnancy and childbirth: A review. Medicine. 2025;104(7):e41381.
17. Alum EU, Ugwu OPC, Obeagu EI, et al. Nutritional care in diabetes mellitus: A comprehensive guide. Int J Innov Appl Res. 2023;11(12):16-25.

18. Obeagu EI, Ahmed YA, Obeagu GU, Bunu UO, Ugwu OPC, Alum EU. Biomarkers of breast cancer: Overview. Int J Curr Res Biol Med. 2023;1:8-16.
19. Uti DE, Alum EU, Atangwho IJ, Ugwu OPC, et al. Lipid-based nano-carriers for the delivery of anti-obesity natural compounds: Advances in targeted delivery and precision therapeutics. J Nanobiotechnol. 2025;23:336.
20. Ugwu CN, Ugwu OPC, Alum EU, Eze VHU, Basajja M, Ugwu JN, Ogenyi FC, et al. Medical preparedness for bioterrorism and chemical warfare: A public health integration review. Medicine. 2025;104(18):e42289.
21. Obeagu EI, Scott GY, Amekpor F, Ugwu OPC, Alum EU. COVID-19 infection and diabetes: A current issue. Int J Innov Appl Res. 2023;11(1):25-30.
22. Offor CE, Ugwu OPC, Alum EU. Anti-diabetic effect of ethanol leaf extract of *Allium sativum* on albino rats. Int J Pharm Med Sci. 2014;4(1):1-3.
23. Asogwa FC, Okechukwu PCU, Esther UA, Chinedu OE, Nzubechukwu E. Hygienic and sanitary assessment of street food vendors in selected towns of Enugu North District, Nigeria. Am-Eurasian J Sci Res. 2015;10(1):22-26.
24. Alum EU, Uti DE, Agah VM, Orji OU, Nkeiru N, et al. Physico-chemical and bacteriological analysis of water used for drinking and domestic purposes in Amaozara Ozizza, Afikpo North, Nigeria. Niger J Biochem Mol Biol. 2023;38(1):1-8.
25. Ugwu OPC, Alum EU, Okon MB, Obeagu EI. Mechanisms of microbiota modulation: Implications for health, disease, and therapeutic interventions. Medicine. 2024;103(19):e38088.
26. Ezekwe CI, Uzomba CR, Ugwu OPC. Effect of methanol extract of *Talinum triangulare* on hematology and liver parameters in rats. Glob J Biotechnol Biochem. 2013;8(2):51-60.
27. Alum EU, Inya JE, Ugwu OPC, Obeagu EI, Aloke C, Aja PM, Okpata MG, et al. Ethanolic leaf extract of *Datura stramonium* attenuates methotrexate-induced biochemical alterations in Wistar rats. RPS Pharmacol Rep. 2023;2(1):1-6.
28. Ugwu OPC, Erisa K, Inyangat R, Obeagu EI, et al. Indigenous medicinal plants for managing diabetes in Uganda: Ethnobotanical and pharmacotherapeutic insights. INOSR Exp Sci. 2023;12(2):214-224.
29. Alum EU, Aja W, Ugwu OPC. Vitamin composition of ethanol leaf and seed extracts of *Datura stramonium*. Avicenna J Med Biochem. 2023;11(1):92-97.
30. Ezenwaji CO, Alum EU, Ugwu OPC. Digital health in pandemic preparedness and response: Securing global health? Glob Health Action. 2024;17(1):2419694.
31. Adonu CC, Ugwu OP, Bawa A, Ossai EC, Nwaka AC. Intrinsic blood coagulation studies in patients with diabetes and hypertension. Int J Pharm Med Bio Sci. 2013;2(2):36-45.
32. Offor CE, Ugwu PC, Okechukwu PM, Igwenyi IO. Proximate and phytochemical analyses of *Terminalia catappa* leaves. Eur J Appl Sci. 2015;7(1):9-11.
33. Enechi YS, Ugwu OC, Ugwu KK, Ugwu OPC, Omeh N. Evaluation of antinutrient levels of *Ceiba pentandra* leaves. IJRRPAS. 2013;3(3):394-400.
34. Alum EU, Uti DE, Ugwu OPC, Alum BN, Edeh FO, Ainebyoona C. Microbiota in cancer development and treatment. Discov Oncol. 2025;16(1):646.
35. Asogwa FC, Okoye COB, Ugwu OPC, Edwin N, Alum EU, Egwu CO. Phytochemistry and antimicrobial assay of *Jatropha curcas* extracts. Eur J Appl Sci. 2015;7(1):12-16.
36. Enechi OC, Oluka HI, Ugwu PCO. Acute toxicity and ameliorative properties of *Alstonia boonei* leaf extract on diabetic rats. Afr J Biotechnol. 2014;13(5).
37. Alum EU, Obeagu EI, Ugwu OPC. Enhancing water, sanitation, and hygiene for diarrhoea control and SDGs: A review. Medicine. 2024;103(38):e39578.
38. Odo CE, Nwodo OFC, Joshua PE, Ugwu OPC, Okonkwo CC. Anti-diarrhoeal effect of chloroform–methanol extract of *Persea americana* seeds in rats. J Pharm Res. 2013;6(3):331-335.
39. Ugwu OPC, Obeagu EI, Alum EU, Michael M, et al. Effect of ethanol leaf extract of *Chromolaena odorata* on hepatic markers in diabetic rats. IAA J Appl Sci. 2023;9(1):46-56.
40. Ibiam UA, Alum EU, Orji OU, Aja PM, Nwamaka EN, Ugwu OPC, et al. Anti-inflammatory effects of *Buchholzia coriacea* leaf extract in arthritic rats. Indo Am J Pharm Sci. 2018;5(7):6341-6357.
41. Obeagu EI, Obeagu GU, Odo EO, Alum EU. Nutritional approaches for enhancing immune competence in HIV-positive individuals. IDOSR J Appl Sci. 2024;9(1):40-50.
42. Obeagu EI, Alum EU, Ugwu OPC. Hepcidin: Gatekeeper of iron in malaria resistance. Newport Int J Res Med Sci. 2023;4(2):1-8.

43. Nyamboga TO, Ugwu OPC, Ugwu JN, et al. Biotechnological innovations in soil health management: a systematic review of integrating microbiome engineering, bioinformatics, and sustainable practices. Cogent Food Agric. 2025;11(1):2519811.
44. Madu ANB, Alum EU, Aloh HE, Ugwu OPC, Obeagu EI, Uti DE, Egba SI, Ukaidi CUA. The price of progress: Assessing the financial costs of HIV/AIDS management in East Africa. Medicine. 2025;104(18):e42300.
45. Alum EU, Ugwu OPC. Beyond pregnancy: Understanding long-term implications of gestational diabetes mellitus. INOSR Sci Res. 2024;11(1):63-71.
46. Ugwu OPC, Alum EU, Okon MB, Aja PM, Obeagu EI, Onyeneke EC. Anti-nutritional and GC-MS analysis of ethanol root extract and fractions of *Sphenocentrum jollyanum*. RPS Pharmacol Pharm Rep. 2023;2(2):rqad007.
47. Eze VHU, Eze CE, Mbabazi A, Ugwu CN, Ugwu PO, Ogenyi CF, Ugwu JN, et al. Qualities and characteristics of a good scientific research writing: Step-by-step approaches. IAA J Appl Sci. 2023;9(2):71-76.
48. Igwenyi IO, Nchi PO, Okechukwu UPC, Igwenyi IP, Obasi DC, Edwin N. Nutritional potential of *Azadirachta indica* seeds. Indo Am J Pharm Sci. 2017;4(2):477-482.
49. Enechi OC, Oluka IH, Ugwu OPC, Omeh YS. Effect of ethanol leaf extract of *Alstonia boonei* on lipid profile of alloxan-induced diabetic rats. Afr J Biotechnol. 2013;24.
50. Ugwu OPC. Anti-malaria effect of ethanol extract of *Moringa oleifera* leaves on malaria-induced mice. University of Nigeria Nsukka; 2011:39.
51. Alum EU, Ugwu OPC, Obeagu EI. Nutritional interventions for cervical cancer patients: Beyond conventional therapies. J Cancer Res Cell Ther. 2024;8(1):1-6.
52. Obeagu EI, Obeagu GU. Advancements in immune augmentation strategies for HIV patients. IAA J Biol Sci. 2024;11(1):1-11.
53. Okechukwu PU, Nzubechukwu E, Ogbanshi ME, Ezeani N, Nworie MO. Effect of ethanol leaf extract of *Jatropha curcas* on chloroform-induced hepatotoxicity in albino rats. Glob J Biotech Biochem. 2015;10:11-15.
54. Ilozue NM, Ikezu UP, Okechukwu PCU. Antimicrobial and phytochemical screening of *Persea americana* seed extracts. IOSR J Pharm Biol Sci. 2014;9(2):23-25.
55. Onyeze R, Udeh SM, Akachi B, Ugwu OP. Isolation and characterization of fungi associated with spoilage of corn (*Zea mays*). Int J Pharm Med Biol Sci. 2013;2(3):86-91.
56. Obeagu EI, Alum EU, Ugwu OPC. Hepcidin: The gatekeeper of iron in malaria resistance. Newport Int J Res Med Sci. 2023;4:1-8.
57. Obeagu EI, Alum EU, Obeagu GU, Ugwu OPC. Prostate cancer: Review on risk factors. Eurasian Exp J Public Health. 2023;4(1):4-7.
58. Offor CE, Okaka ANC, Ogbugo SO, Egwu CO, Okechukwu PC. Effects of ethanol leaf extract of *Pterocarpus santalinoides* on haemoglobin, packed cell volume and platelets. IOSR J Nurs Health Sci. 2015;4:108-112, 93.
59. Offor C, Aja PC, Ugwu O, Agbafor KN. Effects of ethanol leaf extract of *Gmelina arborea* on serum proteins in albino rats. Glob J Environ Res. 2015;9(1):1-4.
60. Alum EU, Uti DE, Obeagu EI, Ugwu OPC, Alum BN. Cancer's psychosocial aspects: Impact on patient outcomes. Elite J Med. 2024;2(6):32-42.
61. Alum EU, Ugwu OPC, Egba SI, Uti DE, Alum BN. Climate variability and malaria transmission: Unravelling the complex relationship. INOSR Sci Res. 2024;11(2):16-22.
62. Alum EU, Obeagu EI, Ugwu OPC, Egba SI, EjimUti DE, Ukaidi CUA, et al. Confronting dual challenges: Substance abuse and HIV/AIDS. Elite J HIV. 2024;2(5):1-8.

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