

Exploring the impact of food lifestyle and community health for developing a nutrition and wellness plan

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An open access initiative by Psychreg Ltd
ISSN: 2515-138X



This study investigates the influence of food lifestyle on the health and well-being of residents in SKBB Lower Bicutan, Taguig City in the Philippines. The research employed descriptive-quantitative method to analyse food habits, beverage intake, and nutritional welfare among community members. The sample comprised predominantly of females and adolescents, many living below the poverty line with limited educational attainment. Key findings indicate prevalent health issues such as heart disease and respiratory problems, alongside common use of over-the-counter medications. Smoking and alcohol consumption patterns were also examined. Dietary habits revealed a preference for rice, bread, pasta, and a high consumption of coffee. Despite existing community programmes like feeding programme and “Operation Timbang Plus”, the study underscores the need for more comprehensive and targeted nutrition and wellness initiatives. The research culminates in recommendations for further community engagement and assessment to develop effective nutrition and wellness strategies, enhancing the overall health profile of the community.

Keywords: community health; food habits; health psychology; nutritional welfare

The nexus between food, nutrition, and health is a complex and multifaceted issue that encompasses biological, social, cultural, political, and economic factors (Ashe & Sonnino, 2013; Chen & Antonelli, 2020; Sobal et al., 2014). The World Health Organization (WHO, 2022) underscores that these dimensions collectively shape dietary behaviours and health outcomes. The challenge becomes even more pronounced in the face of rapid urbanisation, a global phenomenon posing unique public health challenges (Keivani, 2009). Cities, especially in developing countries, are experiencing significant shifts in dietary patterns. This transition is often characterised by an increased consumption of processed foods and a decline in traditional, nutrient-rich diets, leading to concerns about nutrition and health (Food and Agriculture Organization of the United Nations, 2017).

Amid this global urbanisation trend, the nature of food consumption and nutrition is undergoing dramatic changes (Fan & Brzeska, 2014). The shift from rural to urban living alters the food supply chain, affecting both the availability and affordability of food (Godde et al., 2021). In urban settings, the convenience of processed and fast foods often overshadows the accessibility of fresh produce and traditional, wholesome diets. This urban dietary shift is not merely a matter of changing food preferences but is deeply rooted in the broader socio-economic landscape. Urban residents, particularly in developing countries, face unique challenges such as higher living costs, time constraints due to fast-paced lifestyles, and limited access to land for growing food (Bautista et al., 2018). These factors collectively contribute to a nutrition transition where diets become dominated by high-calorie, nutrient-poor foods. This transition is particularly concerning in developing countries where the infrastructure and public health systems may be ill-equipped to handle the consequent rise in non-communicable diseases such as obesity, diabetes, and cardiovascular issues (Gagani et al., 2016). The impact of urbanisation on food systems extends beyond individual health, influencing broader environmental and economic aspects of society. The increased demand for processed foods drives changes in food production and supply chains, often at the expense of environmental sustainability and local agriculture (Berti & Mulligan, 2016; Kelly, 2016; Smith, 2008).

Research has shown that urbanisation in developing countries leads to various food system challenges, including food insecurity and under-nutrition, health hazards like low access to healthcare, and poor living environments (Agarwal et al., 2010). Additionally, urbanisation and income growth have led to a global nutrition transition, resulting in obesity and diet-related diseases (Barth-Jaeggi et al., 2023). In developing countries, this transition is marked by increased consumption of energy-dense foods, which puts stress on the environment and threatens food security (Ciuffreda, 2014; Tian et al., 2016; Zhang et al., 2013).

Specifically, as populations shift to urban areas, traditional diets centred around staples like rice, vegetables, and limited meat are being replaced with more processed, high-fat, high-sugar foods (Kyomuhendo & Adeola, 2021). This dietary change happens concurrently with lifestyle shifts that promote more sedentary behaviours (Clemente-Suárez et al., 2023; Katzmarzyk, 2010; Kerr et al., 2017). The combined result is surging rates of obesity, cardiovascular disease, and diabetes in developing world cities (Gersh et al., 2010).

The Philippines, and specifically Taguig City, is a prime example of these global trends. By 2030, over 70% of Filipinos are expected to live in urban areas (Atienza, 2022), where they often rely on inexpensive processed foods high in fat, sugar, and salt. These dietary shifts contribute to malnutrition and diet-related diseases. Socioeconomic disparities further limit access to diverse, nutrient-rich diets, exacerbating health inequities (WHO, 2022).

In the context of the Philippines, the rapid pace of urbanisation has had profound effects on the food landscape and public health, particularly in metropolitan areas like Taguig City. As urban populations swell, traditional food sources and dietary practices are being replaced by more modern, but often less healthy, alternatives. The proliferation of convenience stores, fast food outlets, and processed food options in urban areas like Taguig reflects a global trend towards diets that are high in energy but low in nutritional value. This dietary shift is largely driven by the fast-paced urban lifestyle, economic pressures, and the allure of convenience, which often take precedence over nutritional considerations (Brewis & Jack, 2005; Santos & Relajo-Howell, 2020). The result is an increased prevalence of non-communicable diseases such as obesity, hypertension, and diabetes, which are now becoming major public health concerns in the Philippines. Additionally, the urban food environment in Taguig, characterised by a high density of food retail outlets offering calorie-dense, nutrient-poor foods, further exacerbates the problem by making it more difficult for residents to make healthy food choices. These changes in the urban food landscape underscore the need for comprehensive public health

strategies that not only address the immediate nutritional needs of the urban population but also consider the long-term implications of dietary shifts on the overall health and wellbeing of communities.

Taguig City, with nearly 900,000 residents, is an epitome of the nutrition transition occurring amid urbanisation (National Nutrition Council-Philippines, n.d.). In Barangay Lower Bicutan, a low-income area, many residents face poverty, food insecurity, and limited healthcare access, influencing their diet and well-being (Philippine Statistics Authority, 2023). This study investigates the impact of food lifestyle on community health in this area, aiming to inform localised interventions that address unique public health needs.

By analysing Lower Bicutan's nutritional status, this research intends to contribute to the understanding of how urbanisation affects food systems and nutrition in developing countries. As urbanisation accelerates globally, the findings of this study are not only relevant to Taguig City but also provide broader insights into promoting healthy, resilient urban communities through targeted food system and nutrition policies. It is crucial to understand these global challenges to foster health equity and sustainable wellbeing in urban settings.

METHOD

To achieve these objectives, the study employed a descriptive-quantitative research design. This approach enabled the researchers to collect and analyse data that could reveal patterns, trends, and correlations within the community's food lifestyle. A comprehensive survey questionnaire was used to gather information on various aspects of the residents' diets, health status, and lifestyle choices. The questionnaire covered a range of topics, including food and beverage consumption, medical history, and the use of over-the-counter medications.

The survey was administered to a representative sample of the community, ensuring a diverse cross-section of participants in terms of age, gender, income level, and educational background. This approach provided a holistic view of the community's nutritional and health status, allowing for a more accurate and detailed analysis.

In the following sections, the article will present the key findings of the study, discussing how the dietary habits and lifestyle choices of the residents of SKBB Lower Bicutan impact their health and well-being. Additionally, it will explore the effectiveness of current community health programs and offer recommendations for future initiatives aimed at improving nutrition and wellness in the area.

RESULTS

This study has unveiled a discernible pattern connecting socioeconomic status, particularly low income, and limited educational attainment, to suboptimal dietary habits among the residents of SKBB Lower Bicutan. As detailed in Table 1, the demographic breakdown of the survey respondents shows a majority female participation (40 out of 47), with a wide range of ages from 1 to 70 years. The marital status of participants varied, with single and married respondents being equally represented. The data suggests that lower income levels, specifically those earning less than 10,000 PHP monthly, correlate with lower educational attainment, which predominantly consisted of elementary undergraduate level.

These factors may contribute to the dietary choices that are associated with health concerns observed in the community, such as prevalent heart disease and respiratory issues. Moreover, lifestyle habits such as smoking and alcohol consumption, as reported by the respondents, point to potential areas for public health improvement. Table 1 provides a comprehensive view of the demographic profile of the respondents, including gender, age, civil status, monthly income, and educational attainment – which is crucial for understanding the context of these health-related findings.

Table 1
Demographic profile of respondents

Gender	Age	Civil Status	Monthly Income	Educational Attainment
Female (40)	1–10 (5)	Single (22)	Less than 10,000 PHP	Elementary undergraduate (14)
Male (7)	11–20 (10)	Married (22)	10,001 – 25,000 PHP	Elementary graduate (3)
	21–30 (13)	Widowed (2)	25,001 – 30,000 PHP	High school undergraduate (14)
	31–40 (9)			High school graduate (12)
	41–50 (8)			University undergraduate (3)
	51–60 (1)			University graduate (1)
	61–70 (1)			
	Total = 47			

NB: Numbers in brackets represent the frequency of respondents for that category.

Table 2 provides data on the prevalence of various medical conditions among the study participants. Notably, heart attacks were reported by 4 respondents, asthma or other respiratory problems were reported by 5 respondents, and thyroid conditions were reported by 1 respondent. Though not listed with specific frequencies, other concerning health conditions documented among residents include diabetes, gastrointestinal disorders, kidney disease, liver disease, and cancer. The prevalence of heart disease and respiratory illnesses, compounded by risk factors such as smoking, poor diet, and limited healthcare access, spotlight the need to improve management of non-communicable diseases in the community. With processed foods, sedentary lifestyles, and related health complications on the rise globally, the health profile of SKBB Lower Bicutan reflects broader public health challenges faced by economically disadvantaged urban populations. Comprehensive screening, treatment, and preventative health initiatives tailored to address these specific disease burdens are vital next steps to help residents lead healthier lives (Fulmer et al., 2021).

Table 2
Medical conditions of respondents

Medical Conditions	Frequency
Heart disease	
Heart attack	4
Cardiovascular disease	
Stroke	
Asthma/Respiratory problems	5
Diabetes	
Thyroid condition	1
GI disorders	
Renal disease	
Liver disease	
Cancer	
Others (e.g., gall bladder, UTI, disability)	

The smoking habits of the respondents are summarised in Table 3, with 41 out of 47 being current smokers and just 6 non-smokers. This indicates an alarmingly high smoking rate of over 85% among surveyed residents. Additionally, concerning alcohol consumption patterns are reported, with 31 respondents acknowledging that they currently consume alcohol and 16 abstaining. Taken together, the widespread use of tobacco and prevalence of drinking behaviours represent major risk factors compounding the development of various non-communicable diseases plaguing the community, including cardiovascular conditions, respiratory illnesses, diabetes, and cancer. These modifiable lifestyle behaviours significantly heighten risks of morbidity and mortality. Comprehensive community health initiatives should emphasize smoking cessation programs, alcohol abuse treatment

resources, and awareness campaigns that educate residents on the severe health implications of tobacco use and excessive drinking. Achieving reductions in smoking and alcohol misuse through culturally appropriate, socioeconomically-accessible interventions could yield considerable improvements in long-term public health outcomes.

Table 3**Smoker or non-smoker and frequency**

Behaviour	Yes	No	Total
Smoke	41	6	47
Drink alcohol	31	16	47

Table 4 details the concerning frequency of consumption of various food items among residents. Refined grains like rice, bread, and pasta lacking in nutrients are consumed 2-3 times per day by 42 respondents, indicating a dietary reliance on processed carbohydrates. Conversely, only 15 residents report eating nutritious green leafy vegetables 2-3 times per week. The data reveals an imbalance favouring energy-dense yet nutrient-poor foods over healthier whole food options. This phenomenon extends across food groups, with moderate fruit intake but regular consumption of meat and dairy products high in saturated fats. Though beans, nuts and seeds are eaten occasionally by some, the majority of participants do not meet guidelines for diverse, well-balanced diets. The frequency of added fats/oils and sweets point to excessive sugar, salt and unhealthy fats that promote unfavourable physiological changes increasing obesity, diabetes, hypertension, and hyperlipidaemia risks. Formulating customised interventions like community gardens, nutrition education campaigns, and healthy cooking classes tailored to address the specific dietary inadequacies is paramount to foster meaningful improvements in long-term well-being (Mingay et al., 2022).

Table 4**Food intake by respondents**

Foods	2-3 times/month	2-3 times/week	1 time/week	2-3 times/day	1 time/day	Never
Rice, bread, pasta	3	1	1	42	1	
Green Leafy Vegetables	1	15	7	21	1	1
Fruits		8	8	19	2	
Milk, cheese, and yoghurt	3	9	3	10	5	7
Meats and eggs	1	12	9	13	4	
Beans, nuts, and seeds	4	5	5	10		
Fats and oils	1	6	5	11	5	8
Sugars and sweets		10	8	14	6	6

Table 5 displays the limited participation of residents in various community nutritional programs. Only 20 respondents report involvement in a feeding program, 5 in "Operation Timbang Plus," 4 attended a general nutrition class, and 2 interacted with a "Barangay Nutrition Scholar." While these initiatives indicate positive intentions to enhance health and address undernourishment, participation numbers are concerningly low given the population of Lower Bicutan. Compounding the issue, the programs in their current forms do not appear to be eliciting meaningful improvements in diet or reductions in nutrition-related disease burden as evidenced by the research findings. These initiatives must be amplified in both number and scope, while eliminating socioeconomic and cultural access barriers, to reach a greater proportion of community members. Increased participation could be achieved through wide-spread promotion campaigns, reduced program fees, and scheduling flexibility to accommodate work schedules. Offering programming specifically customised to managing prevalent chronic diseases may also enhance engagement and outcomes. Significant expansion and enhancement of existing community nutrition services is critical to curb rising diet-related illness.

Table 5
Nutritional programmes

Programmes	Frequency
"Barangay Nutrition Scholar"	2
Nutrition class	4
Feeding programme	20
"Operation Timbang Plus"	5

DISCUSSION

The results of this study elucidate a troubling association between socio-economic status and adverse health outcomes within the community of SKBB Lower Bicutan. The diet of the community members, constrained by economic factors, is characterised by limited variety and is reflective of broader trends affecting urban populations in developing countries (Mendez & Popkin, 2004). Such dietary limitations are known to pose significant risks for the development of chronic diseases, a concern that is further compounded by a high reliance on over-the-counter medications (Vallianatos et al., 2004). The increased rates of smoking and alcohol consumption noted among respondents (41 out of 47 are smokers, and 31 out of 47 consume alcohol as shown in Table 3) not only heighten the risk for non-communicable diseases but also highlight the need for a comprehensive approach to community health that encompasses nutrition, lifestyle choices, and the socioeconomic determinants of health (Page-Reeves et al., 2013).

Specifically, the nutritional deficiencies and health risks observed in SKBB Lower Bicutan mirror patterns across urban areas in developing nations. As populations migrate to cities, traditional diets replete with fruits, vegetables, and whole grains are being replaced with convenient, affordable processed and fast foods high in sugars, unhealthy fats, and chemical additives. These dietary shifts, occurring alongside sedentary lifestyles and persistent economic barriers to healthcare, underpin surging obesity, diabetes, and cardiovascular disease prevalence.

The findings resonate with the dual burden of malnutrition and the rise of non-communicable diseases in developing countries, which has been accentuated by shifts towards increased consumption of processed foods and a departure from traditional nutrient-rich diets (Batal et al., 2023; Dawson et al., 2016; Monteiro & Astrup, 2022). As indicated in Table 4, the preference for rice, bread, and pasta, consumed 2-3 times a day by 42 respondents, is a testament to these shifts. The implications of these dietary habits are profound, considering that previous studies have demonstrated the link between food consumption patterns and chronic health conditions such as heart disease and diabetes (Portero et al., 2002).

The mounting prevalence of obesity, cardiovascular disease, and diabetes in the community underscores the urgency of tailored dietary and lifestyle interventions. Programmes should promote reversion to traditional diets rich in vegetables, fruits, and whole grains, while limiting processed sugars, refined carbohydrates, and unhealthy fats. Achieving meaningful improvements in diet and health requires surmounting complex behavioural and socioeconomic barriers.

Furthermore, the participation in community nutrition programmes, as reported in Table 5, suggests an awareness and a level of engagement in health-promoting activities. However, the efficacy of these programmes in mitigating health risks warrants further investigation. This study's findings underline the urgent need for nutrition and wellness programmes that are not only comprehensive but are also tailored to meet the specific needs of the community (Estoque et al., 2020; Pilao et al., 2017; Relajo, 2018).

While existing community programmes indicate positive intent, their ability to elicit meaningful dietary and lifestyle changes remains unclear. Most residents still face substantial barriers accessing and affording fresh, wholesome foods. Likewise, current initiatives have had minimal impact curbing smoking and drinking behaviours that compound disease risk. There is an evident need to expand the scope of these programmes to address the multifaceted socioeconomic and behavioural factors influencing health.

In response to these challenges, this study recommends the implementation of community-based nutrition education programmes that emphasise affordable and healthy eating options. It is imperative to address the high rates of smoking and alcohol consumption, as these are modifiable risk factors that can significantly impact community health. Collaborations with local healthcare providers are essential to enhance access to preventive care and improve chronic disease management.

Moving forward, continued research should explore potential barriers to participation in community nutrition programs. While awareness and engagement are apparent, efficacy remains limited. Qualitative inquiries assessing resident perceptions, integrating knowledge of behavioural psychology and community social dynamics, are imperative to elucidate specific obstacles that stymie enrolment and adoption of recommendations. Scientific rigor applied in a culturally-sensitive way can strengthen this understanding. Insights gained would inform redesign of existing initiatives and development of new, highly-tailored interventions addressing localised priorities. Ultimately, community-driven participation coupled with evidence-based planning offers the greatest promise for transformative systems change and sustainable improvements in holistic wellbeing.

For future research directions, it is crucial to evaluate the long-term effects of nutritional interventions and to further dissect the socio-economic factors that influence health outcomes in urban settings. Additionally, exploring the intersectionality of these socio-economic factors can provide a more nuanced understanding of health disparities and aid in the development of targeted interventions (Batal et al., 2023; Estoque et al., 2020; Gkiouleka et al., 2018).

CONCLUSION

This study provides crucial insights into the complex interplay between food lifestyle, socio-economic status, and health in SKBB Lower Bicutan. The findings reveal deeply concerning links between poverty, limited education, poor diet, and increased risk of non-communicable diseases. Residents face systemic barriers accessing and affording fresh produce and other nutritious foods. Traditional diets are being replaced by convenient processed items high in fats, sugars, and preservatives that contribute to adverse physiological changes. Likewise, smoking and drinking behaviours remain highly prevalent despite clear associations with heightened morbidity and mortality.

While existing community nutrition programs demonstrate positive intentions, their reach and efficacy are inadequate given the scale of the malnutrition and disease burden faced. Participation rates are low and the interventions in their current forms have failed to catalyse meaningful improvements on either individual or population levels. There is an evident need to dramatically expand the scope of these initiatives through integrated, mutually reinforcing programs tailored to address localized priorities.

In response, the study recommends implementing multi-level strategies spanning various socioecological dimensions. At the individual level, culturally-appropriate education campaigns can promote healthier diets and lifestyle choices by raising awareness of risks and beneficial alternatives. Tools like mobile apps could enhance engagement, especially among youth. Structural interventions including food policy changes, agriculture system reforms to bolster local production, and built environment modifications are imperative to surmount systemic barriers to access. For instance, community gardens and farmers markets can directly provide residents fresh produce while serving as interactive education platforms. Healthcare system strengthening to improve screening, treatment, and preventative services is likewise essential, though complex financial and political challenges must be navigated.

A social ecological approach should inform all initiatives, considering how factors across spheres of influence intersect to shape behaviours and outcomes. Continued research and community participation are integral to develop responsive interventions and evaluate long-term impacts on nutrition status, disease rates, and wellbeing. The path forward demands comprehensive, context-specific programs backed by political will and sustained funding. Success rests upon collaborative mobilisation of diverse stakeholders. The findings serve as a microcosm of global urban health challenges, underscoring how localised data can illuminate directions for transformative systems-based action.

Acknowledgements: None declared

Conflict of interests: None declared

Ethical approval: Centro Escolar University-Makati

Funding: Centro Escolar University-Makati

REFERENCES

- Agarwal, R., & Chakrabarti, A. (2010). Clinical manifestations and natural history of allergic bronchopulmonary aspergillosis. In Pasqualotto, A. C. (Ed.), *Aspergillosis: From diagnosis to prevention* (pp. 707–724). Springer.
- Ashe, L. M., & Sonnino, R. (2013). At the crossroads: new paradigms of food security, public health nutrition and school food. *Public Health Nutrition*, 16(6), 1020–1027. <https://doi.org/10.1017/s1368980012004326>
- Atienza, M. E. L. (2022). Addressing corruption and pursuing democratic governance in the Philippines. In R. Hass & P. M. Kim (Eds.), *Democracy in Asia* (pp. 8–14). The Brookings Institution.
- Barth-Jaeggi, T., Speich, C., Havugimana, C., Bayisenge, F., Kimenju, S., Omondi, W., Pasha, S. F., Islam, S., van Zutphen-Küffer, K. G., van den Berg, S., & Barjolle, D. (2023). Nutrition transition, double burden of malnutrition, and urbanization patterns in secondary cities of Bangladesh, Kenya and Rwanda. *BMC Nutrition*, 9(1), 125. <https://doi.org/10.1186/s40795-023-00782-1>
- Bautista, L., Relajo, D., Pilao, S.J., Tubon, G., & Andal, M. (2018). Link between lifestyle and self-regulated development as components of academic performance: Basis for a psychoeducational intervention. *Journal on Educational Sciences & Psychology*, 8(52), 68–72. <https://doi.org/f8nb>
- Batal, M., Deaconu, A., & Steinhouse, L. (2023). The nutrition transition and the double burden of malnutrition. In M. Batal, T. Wilson, D. R. Jacobs Jr., & G. A. Bray (Eds.), *Nutritional health: Strategies for disease prevention* (pp. 33–44). Springer International Publishing. https://doi.org/10.1007/978-3-031-24663-0_3
- Berti, G., & Mulligan, C. (2016). Competitiveness of small farms and innovative food supply chains: The role of food hubs in creating sustainable regional and local food systems. *Sustainability*, 8(7), 616. <https://doi.org/10.3390/su8070616>
- Brewis, J., & Jack, G. (2005). Pushing speed? The marketing of fast and convenience food. *Consumption Markets & Culture*, 8(1), 49–67. <https://doi.org/10.1080/10253860500069026>
- Chen, P. J., & Antonelli, M. (2020). Conceptual models of food choice: influential factors related to foods, individual differences, and society. *Foods*, 9(12), 1898. <https://doi.org/10.3390/foods9121898>
- Ciuffreda, K. J., Ludlam, D. P., Thiagarajan, P., Yadav, N. K., & Capo-Aponte, J. (2014). Proposed objective visual system biomarkers for mild traumatic brain injury. *Military Medicine*, 179(11), 1212–1217. <https://doi.org/10.7205/milmed-d-14-00059>
- Clemente-Suárez, V. J., Beltrán-Velasco, A. I., Redondo-Flórez, L., Martín-Rodríguez, A., & Tornero-Aguilera, J. F. (2023). Global impacts of Western diet and its effects on metabolism and health: A narrative review. *Nutrients*, 15(12), 2749. <https://doi.org/10.3390/nu15122749>
- Dawson, S. L., Dash, S. R., & Jacka, F. N. (2016). The importance of diet and gut health to the treatment and prevention of mental disorders. In J.F. Cryan & G. Clarke (Eds.), *Gut microbiome and behavior* (pp. 325–346). International Review of Neurobiology (131). Elsevier. <https://doi.org/10.1016/bs.irn.2016.08.009>
- Estoque, R. C., Ooba, M., Seposo, X. T., Togawa, T., Hijioka, Y., Takahashi, K., & Nakamura, S. (2020). Heat health risk assessment in Philippine cities using remotely sensed data and social-ecological indicators. *Nature Communications*, 11(1), 1581. <https://doi.org/10.1038/s41467-020-15218-8>
- Fan, S., & Brzeska, J. (2014). Feeding more people on an increasingly fragile planet: China's food and nutrition security in a national and global context. *Journal of Integrative Agriculture*, 13(6), 1193–1205. [https://doi.org/10.1016/s2095-3119\(14\)60753-x](https://doi.org/10.1016/s2095-3119(14)60753-x)
- Food and Agriculture Organization of the United Nations. (2017). The state of food security and nutrition in the world 2017: Building resilience for peace and food security. Retrieved from <https://www.fao.org/3/I7695e/I7695e.pdf>

- Fulmer, T., Reuben, D. B., Auerbach, J., Fick, D. M., Galambos, C., & Johnson, K. S. (2021). Actualizing better health and health care for older adults: Commentary describes six vital directions to improve the care and quality of life for all older Americans. *Health Affairs*, 40(2), 219–225. <https://doi.org/10.1377/hlthaff.2020.01470>
- Gagani, A., Gemao, J., Relajo, D., Pilao, S.J. (2016). The stages of denial and acceptance among patients with chronic kidney disease. *Journal on Innovation in Psychology, Education and Didactics*, 20(2), 113–114. <https://doi.org/gbzq>
- Gersh, B. J., Sliwa, K., Mayosi, B. M., & Yusuf, S. (2010). Novel therapeutic concepts the epidemic of cardiovascular disease in the developing world: Global implications. *European Heart Journal*, 31(6), 642–648. <https://doi.org/10.1093/eurheartj/ehq030>
- Gkiouleka, A., Huijts, T., Beckfield, J., & Bambra, C. (2018). Understanding the micro and macro politics of health: Inequalities, intersectionality & institutions—A research agenda. *Social Science & Medicine*, 200, 92–98. <https://doi.org/10.1016/j.socscimed.2018.01.025>
- Godde, C. M., Mason-D’Croz, D., Mayberry, D. E., Thornton, P. K., & Herrero, M. (2021). Impacts of climate change on the livestock food supply chain; a review of the evidence. *Global Food Security*, 28, 100488. <https://doi.org/10.1016/j.gfs.2020.100488>
- Katzmarzyk, P. T. (2010). Physical activity, sedentary behavior, and health: paradigm paralysis or paradigm shift? *Diabetes*, 59(11), 2717. <https://doi.org/10.2337/db10-0822>
- Kelly, M. (2016). The nutrition transition in developing Asia: Dietary change, drivers and health impacts. In P. Jackson, W.E.L. Spiess, & F. Sultana (Eds.), *The nutrition transition in developing Asia* (pp. 220–241). Routledge. <https://doi.org/10.1016/j.gfs.2020.100488>
- Keivani, R. (2009). A review of the main challenges to urban sustainability. *International Journal of Urban Sustainable Development*, 1(1–2), 5–16. <https://doi.org/10.1080/19463131003704213>
- Kerr, J., Anderson, C., & Lippman, S. M. (2017). Physical activity, sedentary behaviour, diet, and cancer: an update and emerging new evidence. *The Lancet Oncology*, 18(8), e457–e471. [https://doi.org/10.1016/s1470-2045\(17\)30411-4](https://doi.org/10.1016/s1470-2045(17)30411-4)
- Kyomuhendo, C., & Adeola, R. (2021). Green and grey: Nutritional lifestyle and healthful ageing in rural and urban areas of three sub-Saharan African countries. *Business Strategy & Development*, 4(1), 22–33. <https://doi.org/10.1002/bsd2.153>
- Mendez, M. A., & Popkin, B. M. (2004). Globalization, urbanization and nutritional change in the developing world. *Electronic Journal of Agricultural and Development Economics*, 1(2), 220–241.
- Mingay, E., Hart, M., Yoong, S., Palazzi, K., D’Arcy, E., Pursey, K. M., & Hure, A. (2022). The impact of modifying food service practices in secondary schools providing a routine meal service on student’s food behaviours, health and dining experience: A systematic review and meta-analysis. *Nutrients*, 14(17), 3640. <https://doi.org/10.3390/nu14173640>
- Monteiro, C. A., & Astrup, A. (2022). Does the concept of “ultra-processed foods” help inform dietary guidelines, beyond conventional classification systems? YES. *The American Journal of Clinical Nutrition*, 116(6), 1476–1481. <https://doi.org/10.1093/ajcn/nqac122>
- National Nutrition Council - Philippines. (n.d.). Taguig City showcases innovative, good nutrition practices during Learning Visit. Retrieved from <https://www.nnc.gov.ph/regional-offices/luzon/national-capital-region/3376-taguig-city-showcases-innovative-good-nutrition-practices-during-learning-visit>
- Page-Reeves, J., Mishra, S. I., Niforatos, J., Regino, L., & Bulten, R. (2013). An integrated approach to diabetes prevention: Anthropology, public health, and community engagement. *The Qualitative Report*, 18(1), 1–18. <https://doi.org/10.46743/2160-3715/2013.1432>
- Philippine Statistics Authority. (2023). Fisherfolks and farmers remain to have the highest poverty incidences among the basic sectors in 2021. Retrieved from <https://psa.gov.ph/statistics/poverty/node/1684041626>
- Pilao, S.J., Villanueva, A., Gornez, G.R., Villanueva, J.M., & Relajo, D. (2017). Exploring wellness and quality of life among the elderly as a basis for a nursing care plan and psychosocial intervention. *i-manager’s Journal on Nursing*, 7(3), 8–15. <https://doi.org/f83x>
- Portero Navio, J. L., Rubio Yuste, M., & Pasicatan, M. A. (2002). Socio-economic determinants of knowledge and attitudes about tuberculosis among the general population of Metro Manila, Philippines. *The International Journal of Tuberculosis and Lung Disease*, 6(4), 301–306.
- Relajo, D. (2018). Dimensions of improvement: The physical health of people with mental illness. *Psychology & Society*, 1–2(71–72), 143–154. <https://doi.org/f8ng>
- Santos, A. & Relajo-Howell, D. (2020). Lifestyle and cognitive functioning of Filipino older adults as basis for cognitive enhancement programme. *Psychology & Society*, 4(82), 97–105. <https://doi.org/10.35774/pis2020.04.097>
- Smith, B. G. (2008). Developing sustainable food supply chains. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 363(1492), 849–861. <https://doi.org/10.1098/rstb.2007.2187>

- Sobal, J., Bisogni, C. A., & Jastran, M. (2014). Food choice is multifaceted, contextual, dynamic, multilevel, integrated, and diverse. *Mind, Brain, and Education*, 8(1), 6–12. <https://doi.org/10.1111/mbe.12044>
- Tian, J., Bryksa, B. C., & Yada, R. Y. (2016). Feeding the world into the future—food and nutrition security: the role of food science and technology. *Frontiers in Life Science*, 9(3), 155–166. <https://doi.org/10.1080/21553769.2016.1174958>
- Vallianatos, M., Gottlieb, R., & Haase, M. A. (2004). Farm-to-school: Strategies for urban health, combating sprawl, and establishing a community food systems approach. *Journal of Planning Education and Research*, 23(4), 414–423. <https://doi.org/10.1177/0739456x04264765>
- World Health Organization. (2022). The state of food security and nutrition in the world 2022. WHO. <https://www.who.int/publications/m/item/the-state-of-food-security-and-nutrition-in-the-world-2022>
- Zhang, Q., Jones, S., Ruhm, C. J., & Andrews, M. (2013). Higher food prices may threaten food security status among American low-income households with children. *The Journal of Nutrition*, 143(10), 1659–1665. <https://doi.org/10.3945/jn.112.170506>