

**SOCIAL DETERMINANTS OF ADOLESCENT EATING BEHAVIOURS:
FINDINGS FROM THE 2019 CANADIAN HEALTH SURVEY ON CHILDREN
AND YOUTH**

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Preface

This thesis is submitted in partial fulfillment of the requirements for the Master of Science in Nutrition and Food Biosciences at the University of Ottawa.

The research presented here is based on secondary analysis of data from the 2019 Canadian Health Survey on Children and Youth (CHSCY). Clearance to access and analyze the CHSCY data was obtained from Statistics Canada under the terms of the Ottawa Research Data Centre (ORDC) program.

Under the supervision of Dr. Claire Tugault-Lafleur, MSc candidate Gyselle De Geus was responsible for the conceptualization of the study, data management, statistical analysis, interpretation of results, and preparation of the manuscript. Mrs. De Geus is the first author of the thesis, with Dr Tugault-Lafleur as the senior author.

Abstract

Understanding how eating behaviours differ across sociodemographic groups is crucial for identifying at-risk youth and informing targeted public health strategies. This study examined how these behaviours vary by sociodemographic characteristics in a nationwide sample of the 2019 Canadian Health Survey on Children and Youth (n=13,605 youth aged 12-17 years). Covariate-adjusted logistic regression models were used to test for differences in four eating behaviours (frequency of breakfast consumption, participation in evening family meals, consumption of sugary drinks, and restrictive eating) by gender, age, racial/cultural background, parental education, household income, and food security status. Girls were more likely to skip breakfast and change their eating habits to manage their weight, but less likely to report frequent sugary drink consumption and frequent family meals compared to boys. Older youth demonstrated less favourable practices when compared with younger youth. Differences in eating behaviours were observed among racial subgroups, with Black youth being more at risk of reporting sub-optimal eating behaviours compared to White youth. Adolescents with lower parental education were more likely to report infrequent breakfast and regular sugary beverage consumption. Food insecurity and household income were associated with less desirable eating behaviours. Social disparities in eating behaviours exist among Canadian youth, emphasizing the need for targeted health promotion interventions to address the structural factors contributing to dietary inequities.

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1 Introduction

Adolescence is a critical period when dietary habits are established, yet not all youth have equal opportunities for healthy eating behaviours. Eating behaviours play a crucial role in the health of children and youth, as well as their growth and development (Das et al., 2017). The physiological demand for essential nutrients increases throughout childhood and adolescence, underscoring the importance of high-quality and nutrient-dense diets to support optimal physical growth and cognitive development. (Health Canada, 2021). Furthermore, adolescence is a critical period for establishing healthy lifestyle habits, which can have an important cumulative long-term impact on overall health and well-being (Appannah et al., 2021; Larson et al., 2013; Nelson et al., 2008).

Previous analyses from the Canadian Community Health Survey (CCHS) 2004 and 2015 have shown that adolescents face many nutritional challenges including inadequate intake of vegetables and fruit, excess caloric consumption, high sugary drink intake and inadequate consumption of key nutrients such as potassium, calcium and fiber (Ahmed et al., 2021; Health Canada, 2010; Polsky et al., 2020). These findings are not surprising since adolescents in Canada obtain over half of their daily total energy from ultra-processed foods (Polsky et al., 2020). In order to promote healthy eating patterns in this age group, Health Canada has released additional considerations for children and adolescents as part of the national dietary guidelines (Health Canada, 2022). These recommendations emphasize the importance of developing healthy eating behaviours early in life, including regular meal consumption, involving youth in meal planning, limiting the intake of sugary drinks and making water the drink of choice, encouraging

shared meals, cooking at home, and fostering a supportive food environment that reduces exposure to marketing and social pressures around food and body image.

Evidence shows that Canadian adolescents face several nutritional challenges, so a better understanding of sociodemographic factors associated with adolescent eating behaviours (which can act as determinants of food and nutrient intake) is essential. Certain practices, such as breakfast consumption, sugary drink intake, family meal frequency, and restrictive eating, have been the focus of health promotion interventions targeting children and youth, yet recent prevalence estimates are lacking (Dierckens et al., 2024; Mekonnen et al., 2020; Patte et al., 2024; Serasinghe et al., 2023).

In 2019, Statistics Canada conducted the first nationwide health survey focused on children's and adolescent health across its 13 provinces and territories, providing a unique opportunity to describe the prevalence of eating behaviours among adolescents and explore their associations with sociodemographic factors (Statistics Canada, 2019).

2 Literature review

2.1 Eating behaviours among Canadian youth

2.1.1 Breakfast consumption

Regular consumption of a healthy breakfast during childhood and adolescence provides the energy and nutrients necessary for good health, well-being, and development, with positive effects on cognitive performance, academic achievement, physical health, and overall quality of life (López-Gil et al., 2024; Lundqvist et al., 2019). Infrequent breakfast has been associated with poorer overall diet quality and even adverse outcomes like diminished academic performance and mental health issues (Sliwa et al., 2024).

Breakfast skipping appears to be commonly reported by children, with international studies describing prevalence rates ranging from 10% to 35%, according to a systematic review (Ricotti et al., 2021). This review included 16 intervention studies involving over 50,000 participants aged 1 to 20 years, which highlighted this inconsistency. Definitions of breakfast skipping ranged from yes/no questions to more detailed frequency-based thresholds, which can make cross-study comparisons more complicated; however, the review underscores that breakfast skipping is a prevalent behaviour among youth (Ricotti et al., 2021). In Canada, a cross-sectional survey (n= 20,923) with students from grade 5 to 12, in three provinces (Ontario, Prince Edward Island and Quebec) demonstrated that among students in grades 5 to 8, 70% reported eating breakfast at least five times per week. In contrast, only 50% of students in grades 9 to 12 reported eating breakfast five or more times per week (Lillico et al., 2014). Data from the Canadian cohort study on obesity, marijuana use, physical activity, alcohol use,

smoking and sedentary behaviour (COMPASS), a prospective cohort study that collect data from a large sample of secondary schools and the grade 9 to 12 students in Alberta, British Columbia, Ontario and Quebec, reported that 57.0% of grade 8 students consumed daily breakfast, with lower estimates (52.7%) among grade 9 students (Duncan et al., 2024).

2.1.2 Family meals

Sharing regular meals as a family is associated with several positive outcomes for adolescents (Robson et al., 2020), from better diet quality (Berge et al., 2017; Larson et al., 2013) to a lower risk of substance use and depressive symptoms (Utter et al., 2017). Family dinners are often highlighted as a protective routine that promotes healthier eating habits and strengthens family bonds (Berge et al., 2017). A systematic umbrella review, which included 41 reviews, found that a higher frequency of family meals was associated with factors such as a supportive mealtime environment, positive parental attitudes toward shared meals, the presence of younger children, and greater availability of time within the household (Snuggs & Harvey, 2023). More frequent family meals have been linked to several benefits for children and adolescents, including lower risk of obesity, reduced engagement in risk behaviours, improved mental health and well-being, and better academic performance (Snuggs & Harvey, 2023).

2.1.3 Sugary drinks consumption

Sugary drinks - defined as beverages with added sugars ('sugar-sweetened beverages' (SSB)) and beverages with natural intrinsic sugars (100% juice) – are a major source of excess dietary sugar intake (CDC, 2022). Their consumption has been linked to the increased risk of chronic diseases; therefore, reducing intake of sugary drinks has

become a key target of global nutrition policy through interventions such as public education, taxation, default options, and restricted availability (Jones et al., 2019). Over the past decade, efforts have been made to limit youth consumption of sugary drinks, and overall intake has plateaued in North America; however, the prevalence of these beverages remains high (Doggui et al., 2022; Jones et al., 2019).

In Canada, even with a decrease in the prevalence of intake of sugary beverages reported in 2015 (20%) compared to 2004 (26%), sugary beverages remain a major source of added sugars and energy intake among Canadian youth. Data from the nationally representative 2015 Canadian Community Health Survey (CCHS) – Nutrition showed that sugary drink consumption among children and adolescents remains high. On a given day, 72% of girls and 78% of boys reported consuming any type of sugary drink (Warren et al., 2022). Other estimates suggest that sugars account for nearly one-quarter of adolescents' daily caloric intake (Jones et al., 2019; Langlois et al., 2019), more than double the 5–10% recommended by the World Health Organization (CDC, 2022), highlighting the continued public health relevance of reducing sugary drink consumption.

2.1.4 Restrictive eating behaviours

Restrictive eating behaviours among adolescents can be associated with poor body image, weight-related stigma and bullying (Neumark-Sztainer et al., 2012; Yoon et al., 2020). The prevalence of dietary control behaviours within population-based samples of adolescents can fluctuate widely across studies. In a longitudinal study, aiming to examine the eating behaviours among U.S. adolescents followed for 15 years, researchers found that at baseline (from 11 to 18 years), approximately 51% of girls and 34% of boys

engaged in unhealthy weight control behaviours, such as fasting, vomiting or using diet pills (Yoon et al., 2020).

While restrictive eating behaviours have been widely documented among adolescents in the United States, emerging evidence from Canada suggests similar patterns, though Canadian research in this area remains more limited in scope. Using data from over 20,000 adolescents in the COMPASS study, researchers found that approximately 30% of youth reported changing their eating habits to manage weight at least once per week (Lucibello et al., 2024). In another study, among Quebec adolescents followed from age 12 up to 20 years (n=2,123), researchers examined trajectories in dietary control behaviours over time and found that close to a third of adolescents (31%) experienced a sharp rise in restrictive behaviours between ages 12 and 15 years (Breton et al., 2022). Finally, a cross-sectional survey conducted in the 2020-2021 academic year in four provinces suggests that almost a third (31.2%) of adolescents reported changing their food intake with the intention of changing their body shape (Patte et al., 2024).

2.2 Sociodemographic determinants of eating behaviours

Sociodemographic factors play a critical role in shaping dietary behaviours during adolescence. A growing body of research has examined how characteristics such as gender, age, racial and ethnic background, and socioeconomic status are associated with variations in eating behaviours. This section provides a review of the literature exploring the relationship between these sociodemographic variables and each of the eating behaviours under investigation in the present study: breakfast skipping, family meal frequency, sugary drink consumption, and dietary control behaviours. The aim is to

contextualize these behaviours within broader social determinants of health and to inform a more nuanced understanding of dietary inequalities among youth populations.

2.2.1 Gender

Biological sex refers to physical and physiological traits such as chromosomes, hormones, and reproductive anatomy, typically categorized as male or female (Government of Canada, 2014). Gender, on the other hand, is a social construct that encompasses roles, behaviours, identities, and expressions, existing on a spectrum and shaped by cultural and societal influences. Unlike sex, gender can vary across time and context.

There is evidence that some eating behaviours, such as breakfast skipping, become increasingly gendered as children reach adolescence, with food and meals holding different meanings and possibly different social functions between boys and girls (Deslippe et al., 2021). Data from a 2023 nationwide study with U.S. youth showed that 19.7% of high school girls skipped breakfast every day, versus 16.2% of boys (Sliwa et al., 2024). Findings from a large cross-sectional sample from the COMPASS study, with over 50,000 secondary students in Alberta, British Columbia, Ontario and Quebec, presented that adolescent girls were less likely to consume a daily breakfast than boys (AOR: 0.57, 95% CI: 0.55, 0.60) (Patte et al., 2024).

Gender has also been associated with restrictive eating behaviours. A U.S. study involving 574 adolescents aged 11 to 18 found that these restrictive behaviours were notably more common among girls than boys. Specifically, 56.9% of girls reported engaging in unhealthy weight-related behaviours, nearly double the prevalence observed among boys (31.1%) (Simone et al., 2022). Similarly, a cross-sectional study with the

Canadian population from the 13 provinces, aged 16-30 years old, found that girls had 1.6 times higher chances of experiencing weight concerns when compared with boys (Hallward et al., 2023).

Previous research suggests either no or small associations between family meal frequency and youth gender. Indeed, family meals serve as a stable context for adolescents, regardless of gender, to engage in healthier eating patterns (Robson et al., 2020). Surveys have shown that boys and girls tend to participate equally in family dinners (Berge et al., 2017; Eckert et al., 2021). Ontario data indicated a small difference between 2% and 4%, by gender, in the likelihood of having more than five family dinners per week (Woodruff et al., 2014), which aligns with findings from a U.S. sample of adolescents, which reported similar trends in family meals for boys and girls (Neumark-Sztainer et al., 2013).

Previous research suggest that boys are larger consumers of sugary drinks compared to girls (Doggui et al., 2022; Jones et al., 2019; Moores et al., 2024; Sliwa et al., 2024). In U.S. studies, boys have reported consuming sugary beverages more frequently and in greater quantities than female adolescents (CDC, 2022; Delbosq et al., 2022; Schneider et al., 2021). In Canada, a cohort with 744 youth participants in New Brunswick has shown that boys consistently higher number of sugary beverages than girls across all ages. For instance, at age 16, boys reported a median of 2.2 servings/day (IQR: 1.0–4.7), compared to 1.0 serving/day (IQR: 0.3–1.9) among girls (Doggui et al., 2022). International evidence reiterates this; in a large review, virtually all countries report higher SSB intake among adolescent boys (Moores et al., 2024). By contrast, girls, who often report more weight-conscious behaviours, may limit sugary drinks either to

reduce calorie intake or replace them with diet beverages, though diet soda intake in youth is relatively low overall (Jones et al., 2019). The gender gap in SSBs contributes to gender differences in related health outcomes: for example, boys have higher adolescent obesity rates in some regions, partially attributable to greater sugary drink calories (Dierckens et al., 2024). Notably, the gender difference also intersects with other factors; for instance, one study found 2SLGBTQI+ youth (especially those identifying as bisexual or questioning) had elevated soda consumption compared to heterosexual youth (Sliwa et al., 2024). However, research specifically on gender-diverse youth and sugary drink intake is still limited.

In summary, gender appears to be a determinant of some eating behaviours such as breakfast skipping and sugary drinks consumption. These patterns may reflect gendered social norms, body image concerns, and behavioural coping strategies, which differ between boys and girls.

2.2.2 Age

Breakfast skipping becomes more common with age, with older youth being less likely to eat breakfast every day than younger youth (López-Gil et al., 2024). This age gradient suggests that adolescence, with its increasing autonomy and busy morning schedules, is a high-risk time for breakfast omission (Lane & Sørensen, 2022). A study with UK children and adolescents, aged 4-18 years, found significant differences in breakfast habits between age groups. Specifically, 6.5% of children aged 4-10 years skipped breakfast every day, compared to 26.8% of children aged 11-18 years (Coulthard et al., 2017). Another study, using data from the nationally representative 2004 Canadian Community Health Survey, involving 12,281 children and adolescents aged 4 to 18,

revealed a clear age-related increase in breakfast skipping. While only 2% of children aged 4–8 reported skipping breakfast, this rose to 9% among those aged 9–13, and reached 18% among adolescents aged 14–18. (Barr et al., 2014).

Age has also been associated with restrictive eating behaviours. In a U.S. study analyzing the trajectories of eating behaviours from adolescence to adulthood, the researchers found that the prevalence of engaging in unhealthy weight control behaviours was 56.9% for girls and 31.1% for boys at early adolescence (aged 11 to 18). Among older youth (aged 18 to 23), the prevalence increased to 61.2% for girls and 36.5% for boys, indicating both a developmental rise and a consistent gender disparity (Simone et al., 2022).

As children transition into adolescence, the frequency of family meals might be affected, with adolescents spending a greater time outside the household with peers, engaging in extracurricular activities and/or part-time employment. Previous research suggests that families with older adolescents report a lower frequency of family meals compared to families with younger children (López-Gil et al., 2025; Neumark-Sztainer et al., 2013). The frequency of family meals has declined overall in the past decades, with an increase on the proportion of infrequent family meals from 24.2% in 1999 to 30.3% in 2010 ($p < .001$), indicating a downward trend in the frequency of shared family meals over time (Neumark-Sztainer et al., 2013). A recent study spanning 43 countries, including Canada, underscores the importance of family meals in childhood and adolescence. The findings reveal a notable decline in daily family meals as children grow older, with 61.55% of those aged 10–12 years sharing meals daily, compared to 56.92% of adolescents aged 13–15 years and 48.64% of teens aged 16–17 years ($p < 0.001$)

(López-Gil et al., 2025). These statistically significant differences highlight an opportunity to reinforce the tradition of shared family meals, fostering connection and well-being at all stages of development.

Over the past decades, public health efforts have increasingly targeted the reduction of sugary beverage consumption among children, with both national and regional studies documenting encouraging trends. A longitudinal study with students from 17 elementary schools in New Brunswick (2011–2019) observed a decline in sugary beverage consumption, reflecting broader national trends reported between 2004 and 2015 (Doggui et al., 2021).

2.2.3 Racial/cultural identity

Racial and cultural background can shape adolescents' food preferences and eating habits through a range of interconnected factors including traditional family practices, food preferences and culinary identity, social and peer influences and the broader context of acculturation. While research among adults has shown clear disparities in eating behaviours, relatively fewer studies have examined whether eating behaviours vary among adolescent subgroups. An analysis which drew on data from the COMPASS study, suggests racial differences in eating behaviours among adolescents (Patte et al., 2024). Compared to students who self-identified as White, Black students were the least likely to eat breakfast daily (AOR: 0.66, 95% CI: 0.55, 0.78), while Latin American students were the most likely to consume breakfast (AOR: 1.34, 95% CI: 1.08, 1.66) (Patte et al., 2024). These patterns suggest that cultural and structural factors, such as family food practices, acculturation, or experiences of racism, may influence breakfast intake. It is important to note that race and ethnicity can intersect with socioeconomic

factors, which can confound differences. Still, the evidence indicates that racialized youth, particularly Black adolescents, are at higher risk of not getting a regular morning meal, which could contribute to disparities in energy and nutrient intakes (Sliwa et al., 2024).

Like breakfast consumption, restrictive eating behaviours may vary among racial/cultural groups, as previous research suggests that body image concerns are not uniform across racial and cultural groups (Mikolajczyk et al., 2012). A longitudinal study with a US population ($n = 1314$) found that, compared to White adolescent girls, Hispanic/Latina and Asian American peers exhibited higher rates of unhealthy weight control behaviours (82.4% and 70.2%, respectively). Over time, these behaviours declined among most groups, but continued to rise among Black/African American women across adolescence (51.1%) and adulthood (65.5%) (Simone et al., 2022). A cross-sectional analysis from COMPASS study found differences in restricted eating behaviours based on racial/ethnic pairings (Patte et al., 2024). Adolescents identified as Asian reported the lowest levels of restricted eating when compared with Black adolescents, with a coefficient of 0.71 (p -value < 0.001). When compared with White youth, those identified as Black had the highest levels of restricted eating, with a coefficient of 1.35 ($p < 0.001$), indicating a greater likelihood of engaging in eating restriction (Patte et al., 2024).

Disparities in family meal frequency have also been reported across different cultural groups. Data from the National Surveys of Children's Health on the U.S., reported that East Asian families had some of the highest rates of regular family dinners, whereas Black families often reported lower rates (Ju et al., 2024). These results support

previous findings from a U.S. longitudinal study which suggested that Asian families are more likely to report frequent family meals compared to Black families (Surjadi et al., 2017). These differences likely reflect different cultural norms around shared meals, as well as structural factors. For example, Asian cultural values may place a strong emphasis on family meals, maintaining high rates even through adolescence (Kameyama et al., 2021; Yu et al., 2015). In contrast, Black youth may face more barriers to regular family meals, such as higher rates of single-parent households or parents working multiple jobs with irregular hours, limiting opportunities to eat together (Surjadi et al., 2017).

Significant racial and ethnic disparities are observed in sugary drink consumption, especially in the North American context. Black and Hispanic youth consume more SSBs on average than White or Asian youth, contributing to disparities in caloric intake (Ansem et al., 2014). According to the Center for Disease Control and Prevention (CDC), sugary drink intake among American youth is highest among non-Hispanic Black adolescents, followed closely by Hispanic adolescents (CDC, 2022). Data from the National Health and Nutrition Examination Survey (NHANES) indicate that Black and White adolescents have the highest mean consumption of SSBs, while Asian American children and adolescents have the lowest (Russo et al., 2020). In Canada, detailed ethnic-based data on sugary drinks are limited, but broader indicators suggest similar patterns, with Black population with higher mean of SSB volume consumption, followed by White individuals (Jones et al., 2019).

Race and socioeconomic status may overlap, once many racialized groups are also more likely to experience food insecurity (Dierckens et al., 2024; Warren et al., 2022).

This makes challenging to disentangle race from socioeconomic environment. In summary, existing evidence highlights consistent racial and cultural disparities in youth eating behaviours across different settings. However, there is a notable lack of Canadian-specific research on these disparities.

2.2.4 Socioeconomic position (SEP)

Previous research suggests some disparities in eating behaviours across the socioeconomic gradient among children and adolescents in Canada. Previous cross-sectional analysis from the COMPASS cohort found that youth from lower socioeconomic backgrounds were less likely to follow healthy eating habits (Duncan et al., 2024; Patte et al., 2024). In particular, adolescents from lower SEP were less likely to consume breakfast daily and reported fewer days of fruit and vegetable intake. Lower SEP was also associated to increased likelihood of restrictive eating and greater consumption of purchased snacks. (Patte et al., 2024).

Parental education is sometimes used in studies as an indicator of SEP in research looking at associations with children's dietary quality (Attorp et al., 2014; Tugault-Lafleur et al., 2017). In Norway, a cross-sectional study with 1163 adolescents in the eighth grade found that youth with parents who have a college/university education are more likely to eat breakfast than those with less educated parents (OR: 1.97, 95% CI: 1.43–2.72) (Gebremariam et al., 2017). Another study, conducted by Attorp et al. (2014), investigated factors influencing fruit and vegetable consumption among pre-adolescent children in British Columbia, and found that lower parental education was associated with certain mealtime behaviours that can impact diet quality, such as eating dinner at the

table less frequently and eating in front of the television more frequently (Attorp et al., 2014).

Food insecurity has been consistently linked to disrupted eating patterns among children and adolescents, including an increased likelihood of skipping breakfast. This behaviour may reflect not only material barriers to consistent food access but also the impact of household instability on routine and mealtime structure (Dubois et al., 2023). Evidence from the Québec Longitudinal Study of Child Development offers valuable insight into this association. In a sample of 698 participants followed from early childhood to young adulthood, those exposed to a high risk of food insecurity between ages 4.5 and 13 were significantly more likely to skip breakfast, with adjusted odds nearly doubling over their food-secure peers (OR = 1.97; 95% CI: 1.08, 3.53) (Dubois et al., 2023).

Individuals from lower socioeconomic groups may face additional stressors related to food insecurity, discrimination, and access to healthcare, which can contribute to the development of unhealthy weight control behaviours (Bidopia et al., 2023). An observational study with 1,534 American adolescents found that unhealthy weight control behaviours were significantly more common among girls from lower socioeconomic backgrounds (53.5%) compared to those from higher SEP groups (37.2%) during adolescence (Larson et al., 2021).

SEP exerts a complex influence on family meal frequency. A multicounty study revealed that approximately 49% of school-aged children and adolescents from 43 countries reported having daily family meals (López-Gil et al., 2025). However, this prevalence varies widely by region, SEP, and cultural background. Children from higher

socioeconomic backgrounds and those living with both parents are more likely to have daily family meals (López-Gil et al., 2025). In Ontario, a study with grade 7 students found that students from schools with lower SEP (less than \$50,000 annual median household income) are more likely to have less frequent weekly family meals (OR: 2.16, 95% CI: 1.56, 2.98) (Woodruff et al., 2014).

One of the most pronounced and consistently report of inequities in sugary beverage consumption are along socioeconomic lines. According with a systematic review with 43 studies, youth from lower-income and lower-education households consume significantly more sugary drinks on average than those from higher socioeconomic position families (Schneider et al., 2021). Another study, across 41 countries, reported that adolescents with the lowest family affluence scores were more likely of sugary drink consumption (OR: 1.25; 95 % CI:1.20, 1.30), when compared with their peers with highest scores (Zaborskis et al., 2021). In Canada, a cross-sectional analysis from the 2015 Canadian Community Health Survey found that food insecurity was linked to increased sugary drink consumption, with food-insecure girls showing a 10 percentage-point higher likelihood of sugary drink intake compared to their food-secure counterparts. (Warren et al., 2022).

There is consistent evidence that socioeconomic disadvantage is closely linked to less healthful eating behaviours among youth. However, there remains a lack of up-to-date, nationally representative data on these associations within the current Canadian youth population.

3 Study rationale and research objectives

Adolescence is widely recognized as a critical developmental period during which dietary habits and health-related behaviours are established, shaping long-term health trajectories and influencing the risk of chronic diseases and mental health outcomes (Neumark-Sztainer et al., 2013; Patte et al., 2024). Previous research suggest that social factors such as gender, racial and ethnic background, parental education, and household food security may influence eating practices within this life stage (Mekonnen et al., 2020; Warren et al., 2022), but recent nation-wide data among Canadian adolescents is scarce.

Understanding how eating behaviours vary among adolescents can help inform health promotion efforts. For example, having a gendered approach to health promotion interventions among adolescents may help design strategies that are tailored to boys and girls. Addressing these gaps is crucial to inform targeted, equity-oriented public health policies and interventions that promote healthy eating for all adolescents, particularly those most at risk for suboptimal dietary behaviours.

The research objectives guiding this thesis are as follows:

1. Assess the prevalence of eating behaviours/practices (breakfast consumption, family meals, sugary drinks and restrictive eating) in a large sample of Canadian adolescents.
No hypotheses were formulated for this objective as it is mainly descriptive.
2. Examine whether each eating behaviour vary by social factors (gender, age, race/cultural group, parental education, household income, and food security status).

Hypothesis: Based on the above literature review, I expect to find eating behaviour differences based on gender, age groups and racial/cultural groups based on previous Canadian research (Patte et al., 2024). I also expect to find that adolescents with lower

SEP would exhibit less healthy eating behaviours compared with their peers living in more affluent households.

4 Methods

4.1 Study design and data source

This cross-sectional study used data from the 2019 Canadian Health Survey of Children and Youth (CHSCY), a nationally representative survey of children and youth between the ages of 1 to 17 years living across all 13 provinces and territories. The CHSCY aims to assess the health and well-being of Canadian children and youth including healthy growth and development, injury prevention and substance use, healthy food and food environments, and school health (Statistics Canada, 2020). The 2019 CHSCY covers the population aged 1 to 17 as of January 31, 2019, living in the ten provinces and the three territories. Excluded from the survey's coverage are children and youth living on First Nation reserves and other Aboriginal settlements in the provinces, children and youth living in foster homes, and the institutionalized population.

The survey used a stratified sampling design using the sampling frame from the Canadian Child Benefit files, which covers 98% of the Canadian population aged 1 to 17 years, in all provinces and territories. The survey frame was stratified by province and territories to allow reliable provincial-level estimates, and by age group (1-4 years, 5-11 years, and 12-17 years). The total sample size for the CHSCY 2019 survey was 47,871 participants (response rate of 53%). For this study, the analytical sample was restricted to adolescents aged 12–17 years. Adolescence is recognized as the second window of opportunity, after early childhood, for shaping lifelong health behaviours, including dietary patterns (Patton et al., 2016). This developmental stage is characterized by rapid biological, psychological, and social changes that strongly influence eating behaviours. Limiting the analysis to this age range also ensured comparability with previous

Canadian and international studies of adolescent nutrition. Moreover, several eating behaviour variables, such as restrictive eating, were only measured among adolescents in the CHSCY, which further justified focusing the analyses on this age group.

Data were collected between February-August 2019. Before the start of collection, invitation letters and brochures explaining the purpose of the survey were sent to the households of the selected child or youth. The invitation letters also included a secure access code to complete the CHSCY electronic questionnaire online. Respondents were given the option of either completing the questionnaire online themselves or with the assistance of an interviewer over the telephone. For adolescents aged 12 to 14 years, the parent or guardian was mailed an invitation letter to complete the parent questionnaire online. The correspondence also included a separate, sealed letter containing a unique secure access code for the youth, to be provided by the parent or guardian upon consent to the youth's participation. For adolescents aged 15 to 17 years, individual letters with distinct secure access codes were sent directly to both the parent or guardian and the youth. Additional details regarding study methods can be found elsewhere (Statistics Canada, 2019). The CHSCY collects information from both parents/guardians (Person most knowledgeable, PMK) and youth respondents. In the present study, eating behaviours, age, gender, and race/ethnicity were derived from adolescent self-reports, whereas household income, parental education, and food security status were obtained from PMK reports. When variables were available from both youth and parent respondents, the primary source was selected based on Statistics Canada's data quality recommendations; for this analysis, adolescent self-reports were prioritized for

behavioural and demographic variables, and PMK reports for household-level socioeconomic indicators.

The 2019 CHSCY cycle was selected for analysis as it is the only cycle that included measures of adolescent eating behaviours such as breakfast consumption and frequency of family meals. An additional limitation to the 2023 CHSCY cycle was the relatively lower response rate (25%) response rate compared to the 53% response rate in the 2019 CHSCY.

4.2 Ethics approval

This study utilized publicly available data from the 2019 CHSCY, which was conducted by Statistics Canada. Ethical approval and informed consent for data collection were obtained by Statistics Canada prior to survey administration. Access to the confidential microdata was granted through the Ottawa Research Data Centre (ORDC), part of the Canadian Research Data Centre Network, following a rigorous screening process and approval by Statistics Canada. All analyses conducted adhered strictly to the confidentiality and data usage guidelines established by Statistics Canada and the ORDC.

4.3 Measures

4.3.1 Eating behaviours (dependent variables)

Frequency of breakfast consumption was a self-reported measure using the single item “In the past 7 days, how many days did you eat breakfast?” (response options 0 to 7 days, or “don’t know”). Data was dichotomized as to whether participants were “regular breakfast eaters” (≥ 5 days during the previous week or more) or “irregular breakfast eaters” (< 5 days during the previous week) (Cayres et al., 2016).

Frequency of evening family meals was a self-reported measure using the single item “In the past 7 days, how many days did [he/you] eat the evening meal with [his/your] family sitting at the dinner table together?”. This variable was recoded and dichotomized classifying youth as having frequent family dinner (≥ 5 days during the previous week) or infrequent family meals (< 5 days during the previous week) (Neumark-Sztainer et al., 2008; Utter et al., 2017).

Sugary drink consumption was a self-reported composite measure using the items from the questions “How many times during the past 7 days have you consumed the following sugary beverages?” The beverages comprised: fruit flavoured drinks, regular soft drinks, sports drinks, energy drinks, chocolate milk or hot chocolate beverages, milkshakes or ice cream sodas and sweetened coffee or tea. Responses across all beverage categories were summed to create a composite measure of total sugary drink intake over the past week. Given the left-skewed distribution of the resulting variable, responses were recoded into a binary measure to facilitate statistical analysis and interpretation. Participants were categorized as low consumers (< 5 sugary drinks/week) or high consumers (≥ 5 sugary drinks/week). This threshold was selected to account for the distributional imbalance in the data and to ensure meaningful group comparisons while maintaining statistical robustness (Johnson et al., 2009; Millen et al., 2016).

Restrictive eating was a self-reported measure estimated by asking participants how often, in the past 12 months, they had changed their eating habits to manage their weight, and the following response options were: “Never”, “A few times”, “Monthly”, “Weekly”, or “Daily” or “don’t know”. Respondents were dichotomized into two groups

based on whether they engaged in any level of restricted eating in the past 12 months vs. none (“never”).

All eating behaviour variables were dichotomized for both conceptual and methodological reasons. First, the chosen cut-points are policy-relevant and align with how public health guidelines commonly frame these behaviours (Canada, 2020, 2022; World Health Organization, 2020). This approach enhances the interpretability of findings and facilitates their application to public health decision-making. Second, within the ORDC environment, Statistics Canada’s disclosure control requirements and the limited sample sizes within certain subgroups constrained the feasibility of using more granular categorical variables. Dichotomization therefore ensured stable and reliable estimates while preserving meaningful distinctions between behavioural patterns.

4.3.2 Social factors (independent variables)

Gender was a self-reported measure where youth aged 12–17 years were asked “What is your gender?”, with response options as “male gender”, “female gender”, or “gender diverse”. Gender diverse estimates were dropped due to the coefficient of variation greater than 35%, in accordance with Statistics Canada disclosure guidelines. The item explicitly stated that gender referred to current gender identity, which could differ from sex assigned at birth or from that indicated on legal documents.

Age group was a derived variable created using the self-reported continuous variable age. Participants were classified as younger (12-13 years) vs. older adolescents (14-17 years) (National Academies of Sciences et al., 2019).

Racial/Cultural identity was a self-reported measure originally included the following groups: South Asian, Chinese, Black, Filipino, Arab, Latin American,

Southeast Asian, West Asian, Korean, Japanese, visible minority (not included elsewhere) and not a visible minority. A recoded race variable was created to combine categories due to smaller cell size for some of the categories. The recoded variable included White (not a visible minority group), Asian, Black, Arab, Latin American and mixed-race youth.

Parental educational status was reported by the PMK and recoded into a dichotomous variable. The category “High school degree or less” included respondents with less than a high school diploma or its equivalent, as well as those with a high school diploma or equivalency certificate. The category “College degree or higher” included respondents with a trades certificate or diploma, a college/CEGEP/other non-university certificate or diploma, a university certificate or diploma below the bachelor’s level, a bachelor’s degree (e.g., B.A., B.Sc., LL.B.), or a university certificate, diploma, or degree above the bachelor’s level.

Total household income was reported by the PMK and recoded based on the original variable. The income ranges were grouped to reflect conceptual levels of SEP (i.e., low, lower-middle, upper-middle, and higher income), consistent with Statistics Canada’s standard reporting thresholds (Statistics Canada, 2022). The final categories were: \leq \$40,000; \$40,001–\$60,000; \$60,001–\$80,000; and $>$ \$80,000.

Food security status was measured using the validated Household Food Security Survey Module (HFSSM), which is an 18-item questionnaire that includes 10 specific questions for the adult (PMK) household members, and 8 items specific to children in the household (Health Canada, 2007). Food security status was classified into four different levels (food secure, marginally food insecure, moderately food insecure, and severely

food insecure) and scored based on the number of positive responses to the questionnaire. In the context of this analysis, this variable was dichotomized into food secure versus food insecure (combining all three levels of food insecurity).

4.4 Covariates

Models were controlled for urbanicity and child body mass index (BMI) as they have been previously found in the literature to be associated with eating behaviours among adolescents (Patte et al., 2024).

4.5 Statistical Analyses

Descriptive statistics were initially computed to summarize characteristics of the study sample and the prevalence of the four eating behaviours of interest (breakfast skipping, family meals, sugary drinks and changing eating habits to manage weight). A chi-square test was used to compare the prevalence of eating behaviours between girls and boys in the sample.

To examine the association between an eating behaviour (e.g. frequency of breakfast consumption) and a social factor (e.g. gender), a multivariable logistic regression model was used to examine the main effect of a social factor (e.g. gender) on an eating behaviour (e.g. frequency of breakfast consumption) while controlling for other social factors and covariates. Results are presented as adjusted odds ratios (AOR) with 95% confidence intervals (CI). To control for multiple comparisons and reduce the risk of Type I errors, the Benjamini-Hochberg procedure was applied to correct for the false discovery rate (FDR) across all post-hoc tests (Benjamini & Hochberg, 1995).

Given the complex survey sampling design of the CHSCY, all analyses incorporated Statistics Canada survey weights. These weights adjusted for unequal

probabilities of selection, sample stratification, clustering, and nonresponse bias, thus ensuring that results were representative of the Canadian youth population. A set of 1,000 bootstrap weights provided by Statistics Canada were applied to estimate robust standard errors and generate 95% confidence intervals. All statistical analyses were conducted using Stata 13 software (*StataCorp LLC*, n.d.) with statistical significance set at a P-value of <0.05 .

5 Results

5.1 Sample characteristics

After excluding individuals aged from 1 to 11 years old, the sample available for analysis consisted of 13,605 participants representing all the Canadian provinces and territories. Table 1 summarizes the sociodemographic characteristics of the study sample. Over 70% of the sample identified as White, and close to 80% of participants had parents with a college degree or higher. A little over 60% reported a total household income of over CAN\$80,000, and one out of ten participants reported some level of food insecurity (marginal, moderate or severe).

Table 1. Sociodemographic characteristics of the sample of youth aged 12 to 17 years, Canadian Health Survey on Children and Youth 2019 (n=13,605).

	Unweighted	
	%	n
Gender ¹		
Boys	49.7%	6,760
Girls	49.8%	6,780
Gender diverse	0.3%	45
Cultural/Racial Background ²		
White	73.8%	10,045
Asian	17.7%	2,410
Black	3.6%	490
Arab	1.8%	245
Latin American and mixed-race youth	2.5%	340
Urbanicity		
Urban Area	75.9%	10,325
Rural Area	24.1%	3,280
Highest parental educational attainment ³		
High school degree or less	20.8%	2,830
College degree or higher	78.8%	10,720
Total household Income		
≤ \$40,000	11.3%	1,540
\$40,001 – \$60,000	14.4%	1,965
\$60,001 – \$80,000	11.4%	1,550

> \$80,000	62.8%	8,550
Food Security Status ⁴		
Food Secure	87.1%	11,845
Food Insecure	10.6%	1,450
Weight status ⁵		
Underweight and normal weight	65.5%	8,905
Overweight and with obesity	26.6%	3,610

¹ Missing data on gender for 20 youth (0.2% of the sample).

² Missing data for 70 youth (0.5% of the sample).

³ Missing data for 50 youth (0.4% of the sample).

⁴ Missing data on child-level food security status for 305 youth (2.2% of the sample).

⁵ Missing data on weight status for 1,085 youth (7.9% of the sample).

5.2 Prevalence of eating behaviours

Table 2 summarizes the prevalence all four eating behaviours within the sample, stratified by gender. Results for gender diverse youth are not shown given the small sample size. A higher proportion of girls reported infrequent breakfast consumption and evening family meals (<5 days/week) compared to boys. However, boys reported more commonly consuming sugary drinks compared to girls. Girls also more commonly reported changing their eating habits to manage their weight compared to boys.

Table 2. Prevalence of eating behaviours in a sample of girls and boys, Canadian Health Survey on Children and Youth 2019 sample (n=13,605).

	Girls		Boys		Pearson chi2	P-value
	%	n	%	n		
Breakfast consumption					90.06	< 0.001
<5 days/week	33.5%	2,263	26.6%	1,788		
≥5 days/week	66.5%	4,491	73.4%	4,943		
Family meals					53.67	< 0.001
<5 days/week	37.2%	2,525	31.3%	2,115		
≥5 days/week	62.3%	4,225	68.3%	4,615		
Sugary drinks consumption					104.17	< 0.001
<5 times/week	57.9%	3,925	49.1%	3,320		
≥5 times/week	42.1%	2,855	50.8%	3,435		
Change habits to manage weight					173.06	<0.001
Yes	21.2%	1,435	12.9%	870		
No	78.5%	5,320	86.9%	5,875		

5.3 Associations between eating behaviours and social factors

After adjusting for covariates, girls had higher odds of reporting infrequent breakfast consumption compared to boys (AOR: 1.44, 95% CI: 1.30, 1.61) and close to twice as likely to change their eating behaviours to manage weight (AOR: 1.86, 95% CI: 1.63 – 2.10) (Table 3). Girls had also lower odds of reporting frequent evening family meals compared to boys (AOR: 0.78, 95% CI: 0.71, 0.87) but lower odds frequently consuming sugary drinks when compared with boys (AOR: 0.73, 95% CI: 0.66, 0.80).

Table 3. Associations between eating behaviours and gender among adolescents, Canadian Health Survey on Children and Youth.

Outcomes and contrasts	2019		
	AOR	95% CI	p-value*
Infrequent breakfast (<5 times/week)			
Boys (reference)	1.00		
Girls	1.44	1.30 - 1.61	<0.001
Frequent family meals (≥5 days/week)			
Boys (reference)	1.00		
Girls	0.78	0.71 - 0.87	<0.001
Frequent sugary drinks consumption (≥5 times/week)			
Boys (reference)	1.00		
Girls	0.73	0.66 - 0.80	<0.001
Change habits to manage weight (> than once/year)			
Boys (reference)	1.00		
Girls	1.86	1.63 – 2.10	<0.001

AOR, Adjusted Odds Ratios; CI, confidence intervals.

Models are adjusted for age (in years), BMI, cultural/racial background, parental education, child-level food security status, urbanicity and total household income. Survey sample weights and 1000 bootstrap weights were applied to generate nationally representative rates and robust standard error.

* Benjamini-Hochberg adjusted p-values.

Older adolescents were twice as likely to report infrequent breakfast consumption (AOR: 2.09, 95% CI: 1.85, 2.35) and changing their eating habits to manage their weight (AOR: 2.26, 95% CI: 1.96, 2.60) compared to younger adolescents (Table 4). Older adolescents were also more likely to report frequent sugary drinks (AOR: 1.62, 95%

CI:1.47, 1.78) and less frequent evening family meals compared to younger youth (AOR: 0.43, 95% CI: 0.38, 0.47).

Table 4. Associations between eating behaviours and age group among adolescents, Canadian Health Survey on Children and Youth.

Outcomes and contrasts	2019		
	AOR	CI (95%)	p-value*
Infrequent breakfast (<5 times/week)			
Younger youth (12 - 13 years) (reference)	1.00		
Older youth (14 - 17 years)	2.09	1.85 - 2.35	<0.001
Frequent family meals (≥5 days/week)			
Younger youth (12 - 13 years) (reference)	1.00		
Older youth (14 - 17 years)	0.43	0.38 - 0.47	<0.001
Frequent sugary drinks consumption (≥5 days/week)			
Younger youth (12 - 13 years) (reference)	1.00		
Older youth (14 - 17 years)	1.62	1.47 - 1.78	<0.001
Change habits to manage weight (> than once/year)			
Younger youth (12 - 13 years) (reference)	1.00		
Older youth (14 - 17 years)	2.26	1.96 – 2.60	<0.001

AOR, Adjusted Odds Ratios; CI, confidence intervals.

Models are adjusted for gender, body mass index (BMI), cultural/racial background, parental education, child-level food security status, urbanicity and total household income. Survey sample weights and 1000 bootstrap weights were applied to generate nationally representative rates and robust standard error.

* Benjamini-Hochberg adjusted p-values.

Table 5 presents findings on associations between racial/cultural groups and eating behaviours. Compared to White youth, Asian youth had lower odds of infrequent breakfast (AOR: 0.68, 95% CI: 0.59, 0.8079) and higher odds (AOR: 1.26, 95% CI:1.11, 1.45) of engaging in frequent family meals. In contrast, Black youth had a lower likelihood of reporting frequent family meals (AOR: 0.48, 95% CI: 0.38, 0.62), infrequent breakfast consumption (AOR: 1.40, 95% CI: 1.09, 1.81) and frequent sugary drinks (AOR: 1.59, 95% CI: 1.25, 2.01) compared to White youth. Arab youth had higher odds of infrequent breakfast (AOR: 1.41, 95% CI: 1.00, 1.99) and changing their eating habits to manage their weight compared to White youth (AOR: 1.89, 95% CI: 1.29, 2.77).

Table 5. Associations between eating behaviours and race/cultural identity among adolescents, Canadian Health Survey on Children and Youth.

Outcomes and contrasts	2019		
	AOR	95% CI	p-value*
Infrequent breakfast consumption (<5 times/week)			
White (reference)	1.00		
Asian	0.68	0.59 - 0.79	<0.001
Black	1.40	1.09 - 1.81	0.009
Arab	1.41	1.00 - 1.99	0.047
Latin American and mixed groups	0.92	0.67- 1.25	0.599
Frequent family meals (≥5 days/week)			
White (reference)	1.00		
Asian	1.26	1.11 - 1.45	<0.001
Black	0.48	0.38 - 0.62	<0.001
Arab	1.18	0.83 - 1.67	0.470
Latin American and mixed groups	1.37	0.90 - 1.80	0.139
Frequent sugary drinks consumption (≥5 days/week)			
White (reference)	1.00		
Asian	0.90	0.79 - 1.05	0.852
Black	1.59	1.25 - 2.01	0.001
Arab	1.19	0.83 - 1.68	0.470
Latin American and mixed groups	1.05	0.79 - 1.39	0.789
Change habits to manage weight (> than once/year)			
White (reference)	1.00		
Asian	1.15	0.98 - 1.35	0.074
Black	1.14	0.82 - 1.57	0.416
Arab	1.89	1.29 - 2.77	0.001
Latin American and mixed groups	1.27	0.90 - 1.80	0.165

AOR, Adjusted Odds Ratios; CI, confidence intervals.

Models are adjusted for age (in years), gender, BMI, parental education, child-level food security status, urbanicity and total household income. Survey sample weights and 1000 bootstrap weights were applied to generate nationally representative rates and robust standard error.

* Benjamini-Hochberg adjusted p-values.

Tables 6-8 present results for associations between eating behaviours and indicators of socioeconomic position (parental education, income and food security status). Youth with parents with high school degree or less were more likely to report

infrequent breakfast (AOR = 1.19, 95% CI: 1.05, 1.36), frequent consumption of sugary drinks (AOR = 1.25, 95% CI: 1.11, 1.40) compared to their peers with parents who had a college degree or higher (Table 6). Youth in the lowest income bracket (total household income \leq \$40 000) had higher odds of reporting infrequent breakfast consumption (AOR = 1.25; 95% CI: 1.05, 1.49), frequent sugary drink consumption (AOR = 1.20; 95% CI: 1.04, 1.41) , and lower odds of having frequent family meals (AOR = 0.83; 95% CI: 1.04, 1.41) when compared to their peers in the highest income bracket (total household income $>$ \$80 000) (Table 7). Youth who lived in food insecure households were almost twice as likely to report infrequent breakfast (AOR: 1.76, 95% CI: 1.49, 2.07), more likely to report frequent sugary drinks (AOR: 1.32, 95% CI:1.12, 1.53) and lower odds of frequent family meals (AOR: 0.68, 95% CI:0.58, 0.80) (Table 8).

Table 6. Associations between eating behaviours and parental education among adolescents, Canadian Health Survey on Children and Youth

Outcomes and contrasts	2019		
	AOR	CI (95%)	p-value*
Infrequent breakfast (<5 times/week)			
College degree or higher (reference)	1.00		
High school degree or less	1.19	1.05 - 1.36	0.006
Frequent family meals (\geq 5 days/week)			
College degree or higher (reference)	1.00		
High school degree or less	0.97	0.85 - 1.09	0.601
Frequent sugary drinks consumption (\geq 5 days/week)			
College degree or higher (reference)	1.00		
High school degree or less	1.25	1.11 - 1.40	<0.001
Change habits to manage weight ($>$ than once/year)			
College degree or higher (reference)	1.00		
High school degree or less	1.12	0.92 – 1.37	0.231

AOR, Adjusted Odds Ratios; CI, confidence intervals.

Models are adjusted for age (in years), gender, body mass index (BMI), cultural/racial background, urbanicity, child level food security status and total household income. Survey sample weights and 1000 bootstrap weights were applied to generate nationally representative rates and robust standard error. * Benjamini-Hochberg adjusted p-values.

Table 7. Associations between eating behaviours and household income among adolescents, Canadian Health Survey on Children and Youth

Outcomes and contrasts	2019		
	AOR	CI (95%)	<i>p-value</i> *
Infrequent breakfast (<5 times/week)			
> \$80,000 (reference)	1.00		
\$60,001 – \$80,000	1.24	1.05 – 1.46	0.496
\$40,001 – \$60,000	1.16	0.98 – 1.34	0.952
≤ \$40,000	1.25	1.05 – 1.49	0.012
Frequent family meals (≥5 days/week)			
> \$80,000 (reference)	1.00		
\$60,001 – \$80,000	0.93	0.76 - 1.10	0.659
\$40,001 – \$60,000	0.88	0.72 - 1.03	0.487
≤ \$40,000	0.83	0.70 - 0.99	0.034
Frequent sugary drinks consumption (≥5 days/week)			
> \$80,000 (reference)	1.00		
\$60,001 – \$80,000	1.05	0.88 - 1.29	0.824
\$40,001 – \$60,000	1.18	0.98 - 1.41	0.190
≤ \$40,000	1.20	1.04 - 1.41	0.016
Change habits to manage weight (> than once/year)			
> \$80,000 (reference)	1.00		
\$60,001 – \$80,000	1.01	0.84 - 1.23	0.386
\$40,001 – \$60,000	1.09	0.91 - 1.28	0.783
≤ \$40,000	0.98	0.81 - 1.19	0.816

AOR, Adjusted Odds Ratios; CI, confidence intervals.

Models are adjusted for age (in years), gender, body mass index (BMI), cultural/racial background, parental education, urbanicity, and food security status. Survey sample weights and 1000 bootstrap weights were applied to generate nationally representative rates and robust standard error.

* Benjamini-Hochberg adjusted p-values.

Table 8. Associations between eating behaviours and food security status among adolescents, Canadian Health Survey on Children and Youth

Outcomes and contrasts	2019		
	AOR	CI (95%)	<i>p-value</i> *
Infrequent breakfast (<5 times/week)			
Food secure (reference)	1.00		
Food Insecure	1.76	1.49 – 2.07	< 0.001
Frequent family meals (≥5 days/week)			
Food secure (reference)	1.00		
Food Insecure	0.68	0.58 - 0.80	< 0.001
Frequent sugary drinks consumption (≥5 days/week)			
Food secure (reference)	1.00		
Food Insecure	1.32	1.12 - 1.53	< 0.001
Change habits to manage weight (> than once/year)			
Food secure (reference)	1.00		
Food Insecure	1.12	0.92 – 1.37	0.231

AOR, Adjusted Odds Ratios; CI, confidence intervals.

Models are adjusted for age (in years), gender, body mass index (BMI), cultural/racial background, parental education, urbanicity and total household income. Survey sample weights and 1000 bootstrap weights were applied to generate nationally representative rates and robust standard error.

* Benjamini-Hochberg adjusted p-values.

6 Discussion

6.1 Overview of main findings

This study examined the prevalence and social factors associated with four eating behaviours (breakfast consumption, family meals, sugary drink consumption and restrictive eating behaviours) among Canadian adolescents in 2019 (Statistics Canada, 2019). Our findings confirm those from previous research (Doggui et al., 2022; Patte et al., 2024) suggesting a social gradient in eating behaviours.

6.2 Gender and eating behaviours

Gender was associated with all four eating behaviours examined. Infrequent breakfast consumption was significantly more prevalent among girls compared to boys, supporting previous research showing gender differences in eating behaviours among adolescents (Patte et al., 2024; Sliwa et al., 2024). Adolescents' eating behaviours may be influenced by their familial environments through their food parenting practices which could have differential effects based on gender (Deslippe et al., 2021). Screen-based media frequently expose youth to diet culture and gender-specific weight ideals, such as thinness for girls and muscularity for boys. Additionally, social dynamics around food, including its use for peer bonding and social acceptance, along with targeted marketing strategies, may influence eating behaviours in distinct ways across genders (Deslippe et al., 2021; Harris et al., 2021).

One finding that diverges from previous research, which generally suggests minimal or no gender differences, is the family meal frequency among adolescents (Berge et al., 2017; Eckert et al., 2021; Robson et al., 2020). A possible explanation is that girls may be more likely to avoid shared meals due to body dissatisfaction or

restrictive eating behaviors, which have been shown to be more prevalent among adolescent girls (Hallward et al., 2023; Simone et al., 2022). While regular family meals have been associated with protective effects against disordered eating and positive body image (Ju et al., 2024; Ramseyer Winter et al., 2019), girls experiencing body image concerns may intentionally skip or limit participation in family meals, potentially undermining this protective factor.

Boys were significantly more likely than girls to regularly consume sugary drinks, aligning with existing literature (Doggui et al., 2022; Jones et al., 2019a; Moores et al., 2024) and consistent with surveillance data from North America, where boys consistently report higher intake of soda, energy drinks, and sports drinks than girls (CDC, 2022). Several factors may contribute to this gendered difference, and research suggests that targeted marketing strategies disproportionately promote SSBs, especially energy drinks and sports drinks, to male adolescents reinforcing a gender-coded appeal (Amson et al., 2023; Castronuovo et al., 2021; Harris et al., 2021). In contrast, girls are more frequently exposed to health-conscious or beauty-related messaging that indirectly discourages consumption of sugary beverages (Amson et al., 2023; Castronuovo et al., 2021; Harris et al., 2021)

Consistent with prior research (Hallward et al., 2023; Simone et al., 2022), girls were significantly more likely than boys to report changing their eating habits for weight management purposes. This finding reflects well-documented gendered norms around body weight ideals, where adolescent girls often experience greater societal pressure to conform to thinness ideals (Lucibello et al., 2024). These pressures can drive dietary

control behaviours even in the absence of clinical eating disorders and may begin as early as early adolescence (Yoon et al., 2020).

6.3 Age and eating behaviours

Age emerged as a significant predictor of eating behaviours, with older adolescents consistently reporting less favorable dietary patterns compared to their younger counterparts. Specifically, the frequency of evening family meals declined with age, aligning with prior studies that have documented a gradual reduction in family meal participation as adolescents transition into young adulthood (López-Gil et al., 2025; Neumark-Sztainer et al., 2013). Similarly, breakfast skipping was more common among older youth, a pattern documented in both Canadian and international literature (Barr et al., 2014; Coulthard et al., 2017; López-Gil et al., 2024). Several factors may contribute to this shift, including greater autonomy, increased responsibility for food preparation (for example, older youth being in charge of preparing their own meals), and evolving parental expectations regarding household food roles (Godin et al., 2018; Lane & Sørensen, 2022). As adolescents assume more control over their daily routines, structured meals such as breakfast may become less prioritized. Older adolescents also reported higher levels of sugary drink consumption, reinforcing findings from previous research (CDC, 2022; Doggui et al., 2021) and highlights adolescence as a critical period for the development of dietary autonomy, during which peer influence, marketing exposure, and social norms increasingly shape beverage choices. Factors such as home availability, social acceptance of sugary drinks in peer groups or athletic contexts, and limited parental regulation further contribute to these behaviours (Grap, 2024; Haughton et al., 2018). Moreover, the likelihood of engaging in dietary changes to manage weight

increased significantly with age. This aligns with developmental research suggesting that older adolescents are more susceptible to body image concerns, internalized weight norms, and increased motivation to control eating as a method of appearance management (Breton et al., 2022; Simone et al., 2022). With advancing age, youth often face heightened exposure to societal and media-driven ideals and pressures, and greater independence in food decision-making, which together may foster self-directed dietary control strategies.

6.4 Cultural/racial background and eating behaviours

Cultural and racial background were associated with some eating behaviours among youth. Consistent with previous research (Ansem et al., 2014; Jones et al., 2019b; Ju et al., 2024; Patte et al., 2024; Russo et al., 2020; Surjadi et al., 2017), Black youth were more likely to report infrequent breakfast consumption, higher frequency of sugary drinks and infrequent family meals compared to their White peers. These disparities may reflect the intersectionality between race and class within the Canadian context. For example, recent data from the Canadian Income Survey highlights how food insecurity in Canada is racialized. In 2024, the prevalence of food insecurity was highest among Black individuals (47%) and Indigenous Peoples living off-reserve (40%), significantly exceeding the national average of 25.5%. (PROOF, 2025). Research indicates that Black adolescents are disproportionately exposed to digital and traditional marketing of unhealthy food and beverages, which may influence their eating behaviours (Cassidy et al., 2023). Qualitative studies further reveal that such marketing often incorporates racial and cultural cues to appeal specifically to Black and Hispanic youth, shaping food preferences and consumption intentions (Barnhill et al., 2022; Bibeau et al., 2012).

Moreover, cultural messaging around body image among Black youth may also play a nuanced role. Within Black communities, cultural beauty ideals often celebrate curvier body types, offering a counter-narrative to the dominant Western emphasis on thinness (Hughes, 2021). However, Black adolescents may still face pressure to conform to mainstream standards, creating tension that can manifest in inconsistent or restrictive eating behaviours. Although the odds of restrictive eating were not significantly higher among Black youth in our study, the combination of cultural body norms and mainstream pressures may create unique vulnerabilities that warrant further investigation (Simone et al., 2022).

In our study, Arab youth demonstrated higher risk for suboptimal eating behaviours, including infrequent breakfast consumption and higher prevalence of restrictive eating patterns, which aligns with prior studies suggesting that Arab youth may face increasing internalization of Western body ideals and dietary pressures, particularly in migration and acculturation contexts (e.g. cultural transition in Arab societies; acculturative stress and body image conflict in diaspora populations) (Melisse et al., 2020; Musaiger, 2015; Najjar et al., 2019). Inversely, Asian youth tended to report more structured eating behaviours, including more frequent breakfast consumption, and greater participation in family meals. These findings are consistent with prior research (Ju et al., 2024; Patte et al., 2024; Surjadi et al., 2017) and may reflect cultural values and familial expectations around food (Akoury et al., 2019; Kameyama et al., 2021). For example, collectivistic norms and strong family cohesion commonly found in many Asian cultures may promote structured meal routines and protect against disordered eating tendencies.

These findings highlight cultural practices and family structures promoting structured meal routines in some groups (Akoury et al., 2019; Kameyama et al., 2021).

Taken together, these findings adds to previous literature (Dierckens et al., 2024; Patte et al., 2024; Simone et al., 2022) and underscore the importance of recognizing how cultural values, family structure, and structural inequities intersect to shape eating behaviours among adolescents. The racial disparities observed in breakfast consumption, family meal frequency, sugary drink consumption, and weight-related control behaviour signal the need for more culturally responsive public health strategies. In particular, targeted interventions must consider not only socioeconomic factors, but also the cultural and environmental contexts that influence adolescents' relationships with food.

6.5 Socioeconomic indicators and eating behaviours

This study examined associations between multiple indicators of SEP, including parental education, household income, and food insecurity, and adolescent eating behaviours. Three out of the four eating behaviours examined (breakfast consumption, family meals and sugary beverages) were each associated with all SEP indicators and in their expected hypothesized direction. While we measured SEP using three separate indicators, there would be have intersectionality between these factors, underscoring the complexity of measuring SEP in adolescent populations. As highlighted by Patte et al. (2024), SEP is a multidimensional construct, and commonly used various markers such as income, education, or food security status, each reflecting different mechanisms through which social inequalities shape health outcomes (Patte et al., 2024). Unfortunately, the CHSCY did not include youth-reported measures of SEP (such as

perceived affluence, subjective social status) which could have provided a more direct and valid indicator of SEP.

Adolescents from households with lower parental education levels were significantly less likely to consume breakfast regularly, aligning with European data showing that adolescents whose parents had higher educational attainment were nearly twice as likely to consume breakfast daily (Gebremariam et al., 2017). Similarly, household income was a predictor of breakfast consumption, with youth from higher-income families reporting more frequent breakfast intake. This is supported by findings from the COMPASS study, which demonstrated that adolescents from lower-SEP households were substantially less likely to maintain or adopt daily breakfast routines (Duncan et al., 2024; Patte et al., 2024). These results underscore the importance of both educational and material resources in shaping morning dietary behaviours. Food insecurity was also strongly associated with breakfast skipping. According to the 2023 Canadian Income Survey, approximately 25.5% of individuals in the provinces (equivalent to about 10 million people) lived in food-insecure households, representing a sharp rise from previous years (Li et al., 2023). This trend signals increasing strain on household food access, particularly for moderate and severe food insecurity groups, who not only face scarcity but must also compromise on the nutritional quality and quantity of meals.

Food insecurity and family income were associated with the frequency of family meals. Our findings align with previous literature suggesting that greater financial stability enables more structured family routines (Neumark-Sztainer et al., 2013). Food insecurity may also reflect broader family structures such as job and income instability,

less desirable work schedules (e.g. shift work) and limited quality parental time which can ultimately affect adolescent eating behaviours (López-Gil et al., 2025).

Parental education emerged as a significant predictor of adolescent sugary drink consumption in this study. Youth whose parents had a high school education or less demonstrating 25% higher odds of consuming sugar-sweetened beverages five or more days per week, consistent with previous international literature indicating that lower parental education is associated with higher SSB intake among adolescents (Ansem et al., 2014; Mekonnen et al., 2023; Warren et al., 2022). Similarly, food insecurity and household income were associated with greater sugary drink consumption, which aligns with previous research (Warren et al., 2022; Zaborskis et al., 2021) and further supporting the idea that economic constraints not only limit access to healthy alternatives but also shape purchasing behaviours influenced by affordability and marketing (Hutchinson & Tarasuk, 2022; Warren et al., 2022).

Food insecurity status was strongly associated with three of the four eating behaviours examined, including infrequent breakfast consumption, lower frequency of family meals, and higher frequency of sugary drink consumption. This finding is concerning, as it highlights the inadequacy of current safety nets in Canada to provide equitable access to food to all children and adolescents, regardless of their economic background. While some evidence suggests that parents may attempt to shield their children from the effects of food insecurity by prioritizing their nutritional needs (Hanson & Connor, 2014; Hevesi et al., 2024), the persistence of these associations in our data suggests that such shielding efforts are insufficient. Moreover, these findings reinforce that food insecurity is not merely a marker of disadvantage but a direct and potent social

determinant of health that must be addressed in efforts to improve adolescent dietary behaviours and reduce health inequities.

Household income was also significantly associated with three of the four eating behaviours examined. Adolescents from higher-income households (> \$80,000) had notably lower odds of skipping breakfast and consuming sugary drinks frequently, and higher odds of sharing regular family meals, compared with those from the lowest-income households (\leq \$40,000). These findings reveal a clear social gradient in eating behaviours, whereby adolescents from more affluent families engage in more health-promoting eating patterns. Although not all income contrasts reached statistical significance, the observed trends were consistently in the expected direction where lower household income was associated with higher odds of less desirable eating behaviours.

The magnitude of these associations is noteworthy. It suggests that Canadian adolescents are not fully protected from the effects of household income insecurity, and that economic disadvantage continues to shape how, when, and with whom they eat. This contrasts with earlier national studies reporting that household income was only weakly associated with adolescents' dietary intake (e.g. nutrient adequacy or food group consumption) relative to adults (Garriguet, 2006; Statistics Canada, 2006). The present findings indicate that while total food intake may be somewhat buffered within Canadian households, eating behaviours themselves appear more sensitive to socioeconomic differences. Behaviours such as skipping breakfast or eating fewer family meals may be more immediately influenced by contextual and structural factors, such as parental work schedules, household routines, or financial strain, than by the overall quantity or quality of foods consumed.

These results align with international evidence showing that economic disadvantage is strongly linked to unhealthy eating behaviours among youth, particularly frequent consumption of sugar-sweetened beverages (Purohit et al., 2023). In their global meta-analysis, adolescents from lower socioeconomic strata had approximately 52% higher odds of daily SSB intake compared to their higher-SES peers. Taken together, these findings highlight that income-related inequities in food security, time availability, and family environment remain key determinants of adolescents' eating patterns, emphasizing the need for upstream, structural interventions that reduce income insecurity and promote equitable conditions for healthy eating.

6.6 Strengths and limitations

A strength of this study lies in the use of a large, nationally representative sample of Canadian adolescents which included adolescents from all provinces and Territories, thereby enhancing the generalizability of findings. However, several limitations should be acknowledged. First, there are inherent limitations when using self-reported eating behaviours which are subject to both recall bias and social desirability bias. Adolescents, especially girls, may underreport behaviours perceived as unhealthy or socially undesirable, such as frequent consumption of sugary drinks or engagement in restrictive eating practices. This reporting bias could result in an underestimation of the true prevalence of these behaviours and may obscure or distort the strength and direction of associations observed between gender and eating behaviours. Second, although Statistics Canada used survey items with some degree of validation and psychometric support (Papini et al., 2022), the CHSCY only included a small number of items from the Eating Attitudes Test 26 (EAT-26) which limited our ability to comprehensively assess

engagement in certain eating behaviours such as restrictive eating (which was only measured using a single item). Furthermore, the CHSCY lacked validated youth-reported measures of perceived social status or affluence, constructs increasingly recognized as relevant for adolescent health outcomes (Goodman et al., 2007; Quon & McGrath, 2014). This limits our ability to fully capture the multidimensional nature of SEP's, which may be experienced differently by youth than by parents. Collinearity between SEP variables such as income, education, and food insecurity was not formally assessed in this study and should be addressed in future research to ensure robustness of findings. Third, although the survey aimed for national representativeness, the 2019 CHSCY excluded children and youth living on First Nation reserves and other Aboriginal settlements, those in foster homes, and the institutionalized population. Finally, it is important to acknowledge that the data used in this study were collected in 2019, prior to the onset of the COVID-19 pandemic. There is evidence suggesting that the COVID-19 pandemic altered some eating behaviours among adolescents (Woods et al., 2024) and there is an urgent need to examine whether some of these eating practices have stabilized or worsened over time.

6.7 Conclusions and directions for future research

This thesis investigated sociodemographic patterns in adolescent eating behaviours in Canada, and the findings revealed that dietary behaviours vary significantly across demographic subgroups. Older adolescents and girls were consistently more likely to report suboptimal eating patterns, including infrequent breakfast consumption, infrequent family meals, and weight-related dietary control. Racial and cultural background also shaped eating practices with Black youth showing elevated risk for

several unhealthy dietary behaviours, while Asian youth tended to report more structured meal patterns. SEP also played a significant determinant of eating behaviours, particularly for breakfast consumption and sugary drink intake, with food insecurity as the strongest predictor.

This study reinforces the critical role of social determinants in shaping adolescent dietary behaviours and underscores the need for targeted, equity-oriented interventions. This research also contributes to the growing body of literature advocating for intersectional approaches in adolescent nutrition research. Intersectionality recognizes that social identities such as gender, race, and SEP do not operate independently but intersect to create overlapping systems of advantage and disadvantage (Bauer, 2014; Hankivsky & Christoffersen, 2008). From a public health perspective, intersectional approaches emphasize how structural and social inequities together influence exposure, behaviour, and health outcomes.

Future research should also focus on developing youth-reported measures of both dietary behaviours and perceived social status. Longitudinal designs are also needed to understand how dietary behaviours evolve over time and how policy interventions impact these behaviours. While cross-sectional studies such as the present one identify patterns and associations, only longitudinal research can capture trajectories and causal pathways. Complementary qualitative research could further illuminate the family, cultural, and school contexts in which these behaviours unfold.

This study reinforces the critical role of social determinants in shaping adolescent dietary behaviours and highlights the importance of addressing these inequities through structural interventions, such as policies targeting income inequality, food insecurity,

access to healthy environments, and improve access to higher education. By combining structural interventions, intersectional methodologies, longitudinal designs, and improved measurement standards, future initiatives can more effectively address nutritional inequities and support healthier eating habits among diverse youth populations.

7 References

- Ahmed, M., (Praneet) Ng, A., & L'Abbe, M. R. (2021). Nutrient intakes of Canadian adults: Results from the Canadian Community Health Survey (CCHS)–2015 Public Use Microdata File. *The American Journal of Clinical Nutrition*, *114*(3), 1131–1140. <https://doi.org/10.1093/ajcn/nqab143>
- Akoury, L. M., Warren, C. S., & Culbert, K. M. (2019). Disordered Eating in Asian American Women: Sociocultural and Culture-Specific Predictors. *Frontiers in Psychology*, *10*. <https://doi.org/10.3389/fpsyg.2019.01950>
- Amson, A., Pauzé, E., Remedios, L., Pritchard, M., & Kent, M. P. (2023). Adolescent exposure to food and beverage marketing on social media by gender: A pilot study. *Public Health Nutrition*, *26*(1), 33–45. <https://doi.org/10.1017/S1368980022002312>
- Ansem, W. J. C. van, Lenthe, F. J. van, Schrijvers, C. T. M., Rodenburg, G., & Mheen, D. van de. (2014). Socio-economic inequalities in children's snack consumption and sugar-sweetened beverage consumption: The contribution of home environmental factors. *British Journal of Nutrition*, *112*(3), 467–476. <https://doi.org/10.1017/S0007114514001007>
- Appannah, G., Murray, K., Trapp, G., Dymock, M., Oddy, W. H., & Ambrosini, G. L. (2021). Dietary pattern trajectories across adolescence and early adulthood and their associations with childhood and parental factors. *The American Journal of Clinical Nutrition*, *113*(1), 36–46. <https://doi.org/10.1093/ajcn/nqaa281>
- Attorp, A., Scott, J. E., Yew, A. C., Rhodes, R. E., Barr, S. I., & Naylor, P.-J. (2014). Associations between socioeconomic, parental and home environment factors and

- fruit and vegetable consumption of children in grades five and six in British Columbia, Canada. *BMC Public Health*, 14(1), 150. <https://doi.org/10.1186/1471-2458-14-150>
- Barnhill, A., Ramírez, A. S., Ashe, M., Berhaupt-Glickstein, A., Freudenberg, N., Grier, S. A., Watson, K. E., & Kumanyika, S. (2022). The Racialized Marketing of Unhealthy Foods and Beverages: Perspectives and Potential Remedies. *Journal of Law, Medicine & Ethics*, 50(1), 52–59. <https://doi.org/10.1017/jme.2022.8>
- Barr, S. I., DiFrancesco, L., & Iii, V. L. F. (2014). Breakfast consumption is positively associated with nutrient adequacy in Canadian children and adolescents. *British Journal of Nutrition*, 112(8), 1373–1383. <https://doi.org/10.1017/S0007114514002190>
- Bauer, G. R. (2014). Incorporating intersectionality theory into population health research methodology: Challenges and the potential to advance health equity. *Social Science & Medicine*, 110, 10–17. <https://doi.org/10.1016/j.socscimed.2014.03.022>
- Benjamini, Y., & Hochberg, Y. (1995). Controlling the False Discovery Rate: A Practical and Powerful Approach to Multiple Testing. *Journal of the Royal Statistical Society: Series B (Methodological)*, 57(1), 289–300. <https://doi.org/10.1111/j.2517-6161.1995.tb02031.x>
- Berge, J. M., Truesdale, K. P., Sherwood, N. E., Mitchell, N., Heerman, W. J., Barkin, S., Matheson, D., Levers-Landis, C. E., & French, S. A. (2017). Beyond the dinner table: Who’s having breakfast, lunch and dinner family meals and which meals are associated with better diet quality and BMI in pre-school children? *Public*

- Health Nutrition*, 20(18), 3275–3284.
<https://doi.org/10.1017/S1368980017002348>
- Bibeau, W. S., Saksvig, B. I., Gittelsohn, J., Williams, S., Jones, L., & Young, D. R. (2012). Perceptions of the food marketing environment among African American teen girls and adults. *Appetite*, 58(1), 396–399.
<https://doi.org/10.1016/j.appet.2011.11.004>
- Bidopia, T., Carbo, A. V., Ross, R. A., & Burke, N. L. (2023). Food insecurity and disordered eating behaviors in children and adolescents: A systematic review. *Eating Behaviors*, 49, 101731–101731.
<https://doi.org/10.1016/J.EATBEH.2023.101731>
- Breton, É., Dufour, R., Côté, S. M., Dubois, L., Vitaro, F., Boivin, M., Tremblay, R. E., & Booij, L. (2022). Developmental trajectories of eating disorder symptoms: A longitudinal study from early adolescence to young adulthood. *Journal of Eating Disorders*, 10(1), 1–10. <https://doi.org/10.1186/S40337-022-00603-Z>
- Canada, H. (2020, March 2). *Healthy eating for teens*. Canada Food Guide. <https://food-guide.canada.ca/en/tips-for-healthy-eating/teens/>
- Canada, H. (2022, March 16). *Appendix A: Healthy eating recommendations*. Canada Food Guide. <https://food-guide.canada.ca/en/guidelines/appendix-a-healthy-eating-recommendations/>
- Cassidy, O., Tanofsky-Kraff, M., Waters, A. J., Shank, L. M., Pine, A., Quattlebaum, M., DeLeon, P. H., Bragg, M., & Sbrocco, T. (2023). The impact of racially-targeted food marketing and attentional biases on consumption in Black adolescent females with and without obesity: Pilot data from the Black Adolescent &

- Entertainment (BAE) study. *PLOS ONE*, 18(1), e0279871.
<https://doi.org/10.1371/journal.pone.0279871>
- Castronuovo, L., Guarnieri, L., Tiscornia, M. V., & Allemandi, L. (2021). Food marketing and gender among children and adolescents: A scoping review. *Nutrition Journal*, 20(1), 52. <https://doi.org/10.1186/s12937-021-00706-4>
- Cayres, S. U., Júnior, I. F. F., Barbosa, M. F., Christofaro, D. G. D., & Fernandes, R. A. (2016). Breakfast frequency, adiposity, and cardiovascular risk factors as markers in adolescents. *Cardiology in the Young*, 26(2), 244–249.
<https://doi.org/10.1017/S1047951115000050>
- CDC. (2022, April 11). *Sugar Sweetened Beverage Intake*. Centers for Disease Control and Prevention. <https://www.cdc.gov/nutrition/data-statistics/sugar-sweetened-beverages-intake.html>
- Coulthard, J. D., Palla, L., & Pot, G. K. (2017). Breakfast consumption and nutrient intakes in 4–18-year-olds: UK National Diet and Nutrition Survey Rolling Programme (2008–2012). *British Journal of Nutrition*, 118(4), 280–290.
<https://doi.org/10.1017/S0007114517001714>
- Das, J. K., Salam, R. A., Thornburg, K. L., Prentice, A. M., Campisi, S., Lassi, Z. S., Koletzko, B., & Bhutta, Z. A. (2017). Nutrition in adolescents: Physiology, metabolism, and nutritional needs. *Annals of the New York Academy of Sciences*, 1393(1), 21–33. <https://doi.org/10.1111/nyas.13330>
- Delbosq, S., Velasco, V., Vercesi, C., Gruppo Regionale HBSC Lombardia 2018, & Vecchio, L. P. (2022). Adolescents' Nutrition: The Role of Health Literacy, Family and Socio-Demographic Variables. *International Journal of*

- Environmental Research and Public Health*, 19(23), Article 23.
<https://doi.org/10.3390/ijerph192315719>
- Deslippe, A. L., Tugault-Lafleur, C. N., McGaughey, T., Naylor, P.-J. (P. J.), Le Mare, L., & Mâsse, L. C. (2021). Gender plays a role in adolescents' dietary behaviors as they transition to secondary school. *Appetite*, 167, 105642.
<https://doi.org/10.1016/j.appet.2021.105642>
- Dierckens, M., Deforche, B., De Clercq, B., Weinberg, D., Stevens, G. W. J. M., Chatelan, A., Rouche, M., Clays, E., & Delaruelle, K. (2024). Country-level sociocultural context and socioeconomic inequalities in adolescent dietary behaviours: A multilevel analysis in 21 European countries. *Appetite*, 198, 107339. <https://doi.org/10.1016/j.appet.2024.107339>
- Doggui, R., Ward, S., Johnson, C., & Bélanger, M. (2021). Trajectories of Eating Behaviour Changes during Adolescence. *Nutrients*, 13(4), Article 4.
<https://doi.org/10.3390/nu13041313>
- Doggui, R., Ward, S., Johnson, C., & Bélanger, M. (2022). Trajectories of beverage consumption during adolescence. *Appetite*, 175, 106092.
<https://doi.org/10.1016/j.appet.2022.106092>
- Dubois, L., Bédard, B., Goulet, D., Prud'Homme, D., Tremblay, R. E., & Boivin, M. (2023). Experiencing food insecurity in childhood: Influences on eating habits and body weight in young adulthood. *Public Health Nutrition*, 26(11), 2396–2406. <https://doi.org/10.1017/S1368980023001854>
- Duncan, M. J., Belita, E., Amores, A., Riazi, N. A., Carsley, S., Vanderloo, L. M., Carson, V., Chaput, J.-P., Faulkner, G., Leatherdale, S. T., & Patte, K. A. (2024).

- Changes in breakfast and water consumption among adolescents in Canada: Examining the impact of COVID-19 in worsening inequity. *BMC Nutrition*, 10(1), 27. <https://doi.org/10.1186/s40795-024-00831-3>
- Eckert, K. F., Asbridge, M., Campbell, L. A., Stewart, S., Bennett, M., Loewen, O. K., Veugeliers, P. J., & Cahill, L. E. (2021). Meal regularity is associated with self-esteem among grade 5 children. *The American Journal of Clinical Nutrition*, 113(2), 467–475. <https://doi.org/10.1093/ajcn/nqaa321>
- Garriguet, D. (2006). *Overview of Canadians' Eating Habits*. <https://publications.gc.ca/collections/Collection/Statcan/82-620-M/82-620-MIE2006002.pdf>
- Gebremariam, M. K., Henjum, S., Hurum, E., Utne, J., Terragni, L., & Torheim, L. E. (2017). Mediators of the association between parental education and breakfast consumption among adolescents: The ESSENS study. *BMC Pediatrics*, 17(1), 61. <https://doi.org/10.1186/s12887-017-0811-2>
- Godin, K. M., Patte, K. A., & Leatherdale, S. T. (2018). Examining Predictors of Breakfast Skipping and Breakfast Program Use Among Secondary School Students in the COMPASS Study. *Journal of School Health*, 88(2), 150–158. <https://doi.org/10.1111/josh.12590>
- Goodman, E., Huang, B., Schafer-Kalkhoff, T., & Adler, N. E. (2007). Perceived Socioeconomic Status: A New Type of Identity That Influences Adolescents' Self-Rated Health. *Journal of Adolescent Health*, 41(5), 479–487. <https://doi.org/10.1016/j.jadohealth.2007.05.020>

- Government of Canada, C. I. of H. R. (2014, January 10). *What is gender? What is sex?* - CIHR. <https://cihr-irsc.gc.ca/e/48642.html>
- Grap, M. E. (2024). Factors Associated with Sugar-Sweetened Beverage Intake Among Young Children – United States, 2021. *Preventing Chronic Disease, 21*. <https://doi.org/10.5888/pcd21.230354>
- Hallward, L., Nagata, J. M., Rodgers, R. F., & Ganson, K. T. (2023). Examination of eating disorder psychopathology across sexual and gender identities among a Canadian sample. *International Journal of Eating Disorders, 56*(3), 604–615. <https://doi.org/10.1002/EAT.23872>
- Hankivsky, O., & Christoffersen, A. (2008). *Intersectionality and the determinants of health: A Canadian perspective. 18*(3), 271–283. <https://doi.org/10.1080/09581590802294296>
- Hanson, K. L., & Connor, L. M. (2014). Food insecurity and dietary quality in US adults and children: A systematic review. *The American Journal of Clinical Nutrition, 100*(2), 684–692. <https://doi.org/10.3945/ajcn.114.084525>
- Harris, J. L., Yokum, S., & Fleming-Milici, F. (2021). Hooked on Junk: Emerging Evidence on How Food Marketing Affects Adolescents’ Diets and Long-Term Health. *Current Addiction Reports, 8*(1), 19–27. <https://doi.org/10.1007/s40429-020-00346-4>
- Haughton, C. F., Waring, M. E., Wang, M. L., Rosal, M. C., Pbert, L., & Lemon, S. C. (2018). Home Matters: Adolescents Drink More Sugar-Sweetened Beverages When Available at Home. *The Journal of Pediatrics, 202*, 121–128. <https://doi.org/10.1016/j.jpeds.2018.06.046>

Health Canada. (2007). *Income-Related Household Food Security in Canada* (Nos. 978-0-662-45455-7). <https://www.canada.ca/en/health-canada/services/food-nutrition/food-nutrition-surveillance/health-nutrition-surveys/canadian-community-health-survey-cchs/canadian-community-health-survey-cycle-2-2-nutrition-2004-income-related-household-food-security-canada-health-canada-2007.html#appa>

Health Canada. (2010, January 27). *Do Canadian Adolescents Meet Their Nutrient Requirements Through Food Intake Alone?* [Research;notices]. <https://www.canada.ca/en/health-canada/services/food-nutrition/food-nutrition-surveillance/health-nutrition-surveys/canadian-community-health-survey-cchs/canadian-adolescents-meet-their-nutrient-requirements-through-food-intake-alone-health-canada-2012.html>

Health Canada. (2021, January 14). *Canada's food guide*. <https://food-guide.canada.ca/en/>

Health Canada. (2022, March 18). *Nutrition considerations for children and adolescents*. Canada Food Guide. <https://food-guide.canada.ca/en/applying-guidelines/nutrition-considerations-children-adolescents/>

Hevesi, R., Downey, M. R., & Harvey, K. (2024). Living in food insecurity: A qualitative study exploring parents' food parenting practices and their perceptions of the impact of food insecurity on their children's eating. *Appetite, 195*, 107204. <https://doi.org/10.1016/j.appet.2024.107204>

- Hughes, E. (2021). "I'm Supposed To Be Thick": Managing Body Image Anxieties Among Black American Women. *Journal of Black Studies*, 52(3), 310–330. <https://doi.org/10.1177/0021934720972440>
- Hutchinson, J., & Tarasuk, V. (2022). The relationship between diet quality and the severity of household food insecurity in Canada. *Public Health Nutrition*, 25(4), 1013–1026. <https://doi.org/10.1017/S1368980021004031>
- Johnson, R. K., Appel, L. J., Brands, M., Howard, B. V., Lefevre, M., Lustig, R. H., Sacks, F., Steffen, L. M., & Wylie-Rosett, J. (2009). Dietary Sugars Intake and Cardiovascular Health. *Circulation*, 120(11), 1011–1020. <https://doi.org/10.1161/CIRCULATIONAHA.109.192627>
- Jones, A. C., Kirkpatrick, S. I., & Hammond, D. (2019a). Beverage consumption and energy intake among Canadians: Analyses of 2004 and 2015 national dietary intake data. *Nutrition Journal*, 18(1), 60. <https://doi.org/10.1186/s12937-019-0488-5>
- Jones, A. C., Kirkpatrick, S. I., & Hammond, D. (2019b). Beverage consumption and energy intake among Canadians: Analyses of 2004 and 2015 national dietary intake data. *Nutrition Journal*, 18(1), 60. <https://doi.org/10.1186/s12937-019-0488-5>
- Ju, S., Helton, J. J., & Iwinski, S. (2024). Protective role of family mealtime frequency against disordered eating behaviors: Racial and ethnic differences. *Appetite*, 197, 107328. <https://doi.org/10.1016/j.appet.2024.107328>
- Kameyama, N., Morimoto, Y., Hashimoto, A., Inoue, H., Nagaya, I., Nakamura, K., & Kuwano, T. (2021). The Relationship between Family Meals and Mental Health

- Problems in Japanese Elementary School Children: A Cross-Sectional Study. *International Journal of Environmental Research and Public Health*, 18(17), Article 17. <https://doi.org/10.3390/ijerph18179281>
- Lane, J. M., & Sørensen, S. (2022). The Relationship between Grade-Level and Breakfast Skipping among Adolescents: The Mediating Effects of Dietary Autonomy. *Health Behavior Research*, 5(1). <https://doi.org/10.4148/2572-1836.1105>
- Langlois, K., Garriguet, D., Gonzalez, A., Sinclair, S., & Colapinto, C. K. (2019). Change in total sugars consumption among Canadian children and adults. *Health Reports*, 30(1), 10–19.
- Larson, N., Fulkerson, J., Story, M., & Neumark-Sztainer, D. (2013). Shared meals among young adults are associated with better diet quality and predicted by family meal patterns during adolescence. *Public Health Nutrition*, 16(5), 883–893. <https://doi.org/10.1017/S1368980012003539>
- Larson, N., Loth, K. A., Eisenberg, M. E., Hazzard, V. M., & Neumark-Sztainer, D. (2021). Body dissatisfaction and disordered eating are prevalent problems among U.S. young people from diverse socioeconomic backgrounds: Findings from the EAT 2010–2018 study. *Eating Behaviors*, 42, 101535–101535. <https://doi.org/10.1016/J.EATBEH.2021.101535>
- Li, T., Fafard St-Germain, A.-A., & Tarasuk, V. (2023). *Household Food Insecurity in Canada 2022*. <https://proof.utoronto.ca/>
- Lillico, H. G., Hammond, D., Manske, S., & Murnaghan, D. (2014). The prevalence of eating behaviors among Canadian youth using cross-sectional school-based

- surveys. *BMC Public Health*, 14(1), Article 1. <https://doi.org/10.1186/1471-2458-14-323>
- López-Gil, J. F., Smith, L., Tully, M. A., Álvarez-Pitti, J., Gómez, S. F., & Schröder, H. (2025). Prevalence of daily family meals among children and adolescents from 43 countries. *Maternal & Child Nutrition*, 21(1), e13706. <https://doi.org/10.1111/mcn.13706>
- López-Gil, J. F., Tully, M. A., Cristi-Montero, C., Brazo-Sayavera, J., Gaya, A. R., Calatayud, J., López-Bueno, R., & Smith, L. (2024). Is the frequency of breakfast consumption associated with life satisfaction in children and adolescents? A cross-sectional study with 154,151 participants from 42 countries. *Nutrition Journal*, 23, 78. <https://doi.org/10.1186/s12937-024-00979-5>
- Lucibello, K. M., Zhang, Q., Leatherdale, S. T., & Patte, K. A. (2024). Changing eating to manage weight or shape: A cross-sectional and prospective study of the prevalence and correlates in a large Canadian adolescent cohort. *Preventive Medicine*, 184, 107987. <https://doi.org/10.1016/j.ypmed.2024.107987>
- Lundqvist, M., Vogel, N. E., & Levin, L.-Å. (2019). Effects of eating breakfast on children and adolescents: A systematic review of potentially relevant outcomes in economic evaluations. *Food & Nutrition Research*, 63, 10.29219/fnr.v63.1618. <https://doi.org/10.29219/fnr.v63.1618>
- Mekonnen, T., Havdal, H. H., Lien, N., O'Halloran, S. A., Arah, O. A., Papadopoulou, E., & Gebremariam, M. K. (2020). Mediators of socioeconomic inequalities in dietary behaviours among youth: A systematic review. *Obesity Reviews*, 21(7), e13016. <https://doi.org/10.1111/obr.13016>

- Mekonnen, T., Papadopoulou, E., Lien, N., Andersen, L. F., Pinho, M. G. M., Havdal, H. H., Andersen, O. K., & Gebremariam, M. K. (2023). Mediators of parental educational differences in the intake of carbonated sugar-sweetened soft drinks among adolescents, and the moderating role of neighbourhood income. *Nutrition Journal*, 22(1), 43. <https://doi.org/10.1186/s12937-023-00872-7>
- Melisse, B., de Beurs, E., & van Furth, E. F. (2020). Eating disorders in the Arab world: A literature review. *Journal of Eating Disorders*, 8(1), 59. <https://doi.org/10.1186/s40337-020-00336-x>
- Mikolajczyk, R. T., Iannotti, R. J., Farhat, T., & Thomas, V. (2012). Ethnic differences in perceptions of body satisfaction and body appearance among U.S. Schoolchildren: A cross-sectional study. *BMC Public Health*, 12, 425. <https://doi.org/10.1186/1471-2458-12-425>
- Millen, B. E., Abrams, S., Adams-Campbell, L., Anderson, C. A., Brenna, J. T., Campbell, W. W., Clinton, S., Hu, F., Nelson, M., Neuhouser, M. L., Perez-Escamilla, R., Siega-Riz, A. M., Story, M., & Lichtenstein, A. H. (2016). The 2015 Dietary Guidelines Advisory Committee Scientific Report: Development and Major Conclusions. *Advances in Nutrition*, 7(3), 438–444. <https://doi.org/10.3945/an.116.012120>
- Moore, C. J., Taylor, A. M., Cowap, S., Roberts, R., Gunasinghe, K. A. M. M., & Moynihan, P. J. (2024). Behavior Change Techniques to Reduce Sugars Intake by Adolescents: A Systematic Review. *JDR Clinical & Translational Research*, 23800844241280717. <https://doi.org/10.1177/23800844241280717>

- Musaiger, A. (2015). Body weight concern among female university students in five Arab countries – a preliminary cross-cultural study. *Annals of Agricultural and Environmental Medicine*, 22(2), 349–352.
<https://doi.org/10.5604/12321966.1152093>
- Najjar, K., Naser, S. C., & Clonan-Roy, K. (2019). Experiences of Arab heritage youth in US schools and impact on identity development. *School Psychology International*, 40(3), 251–274. <https://doi.org/10.1177/0143034319831057>
- National Academies of Sciences, E., Oria, M., Harrison, M., & Stallings, V. A. (2019, March 5). *Dietary Reference Intakes (DRIs): Estimated Average Requirements, Food and Nutrition Board, National Academies* [Text]. National Academies Press (US). https://www.ncbi.nlm.nih.gov/books/NBK545442/table/appJ_tab1/
- Nelson, M. C., Story, M., Larson, N. I., Neumark-Sztainer, D., & Lytle, L. A. (2008). Emerging Adulthood and College-aged Youth: An Overlooked Age for Weight-related Behavior Change. *Obesity*, 16(10), 2205–2211.
<https://doi.org/10.1038/oby.2008.365>
- Neumark-Sztainer, D., Eisenberg, M. E., Fulkerson, J. A., Story, M., & Larson, N. I. (2008). Family Meals and Disordered Eating in Adolescents: Longitudinal Findings From Project EAT. *Archives of Pediatrics & Adolescent Medicine*, 162(1), 17–22. <https://doi.org/10.1001/archpediatrics.2007.9>
- Neumark-Sztainer, D., Wall, M., Fulkerson, J. A., & Larson, N. (2013). Changes in the frequency of family meals from 1999-2010 in the homes of adolescents: Trends by sociodemographic characteristics. *The Journal of Adolescent Health : Official*

- Publication of the Society for Adolescent Medicine*, 52(2), 201–206.
<https://doi.org/10.1016/j.jadohealth.2012.06.004>
- Neumark-Sztainer, D., Wall, M. M., Larson, N., Story, M., Fulkerson, J. A., Eisenberg, M. E., & Hannan, P. J. (2012). Secular trends in weight status and weight-related attitudes and behaviors in adolescents from 1999 to 2010. *Preventive Medicine*, 54(1), 77–81. <https://doi.org/10.1016/j.ypmed.2011.10.003>
- Papini, N. M., Jung, M., Cook, A., Lopez, N. V., Ptomey, L. T., Herrmann, S. D., & Kang, M. (2022). Psychometric properties of the 26-item eating attitudes test (EAT-26): An application of rasch analysis. *Journal of Eating Disorders*, 10(1). <https://doi.org/10.1186/S40337-022-00580-3>
- Patte, K. A., Duncan, M. J., Amores, A., Belita, E., Kocsis, R., Riazi, N. A., Laxer, R., Scott, , & Leatherdale, T. (2024). Inequities in dietary intake and eating behaviours among adolescents in Canada. *Canadian Journal of Public Health* 2024, 1–14. <https://doi.org/10.17269/S41997-024-00854-0>
- Patton, G. C., Sawyer, S. M., Santelli, J. S., Ross, D. A., Afifi, R., Allen, N. B., Arora, M., Azzopardi, P., Baldwin, W., Bonell, C., Kakuma, R., Kennedy, E., Mahon, J., McGovern, T., Mokdad, A. H., Patel, V., Petroni, S., Reavley, N., Taiwo, K., ... Viner, R. M. (2016). Our future: A Lancet commission on adolescent health and wellbeing. *The Lancet*, 387(10036), 2423–2478. [https://doi.org/10.1016/S0140-6736\(16\)00579-1](https://doi.org/10.1016/S0140-6736(16)00579-1)
- Polsky, J. Y., Moubarac, J.-C., & Garriguet, D. (2020). Consumption of ultra-processed foods in Canada. *Health Reports*, 31(11), 3–15. <https://doi.org/10.25318/82-003-x202001100001-eng>

- PROOF. (2025, May 5). New data on household food insecurity in 2024. *PROOF*.
<https://proof.utoronto.ca/2025/new-data-on-household-food-insecurity-in-2024/>
- Purohit, B. M., Dawar, A., Bansal, K., Nilima, Malhotra, S., Mathur, V. P., & Duggal, R. (2023). Sugar-sweetened beverage consumption and socioeconomic status: A systematic review and meta-analysis. *Nutrition and Health, 29*(3), 465–477.
<https://doi.org/10.1177/02601060221139588>
- Quon, E. C., & McGrath, J. J. (2014). Subjective socioeconomic status and adolescent health: A meta-analysis. *Health Psychology, 33*(5), 433–447.
<https://doi.org/10.1037/a0033716>
- Ramseyer Winter, V., Jones ,Aubrey, & and O’Neill, E. (2019). Eating Breakfast and Family Meals in Adolescence: The Role of Body Image. *Social Work in Public Health, 34*(3), 230–238. <https://doi.org/10.1080/19371918.2019.1575314>
- Ricotti, R., Caputo, M., Monzani, A., Pigni, S., Antoniotti, V., Bellone, S., & Prodam, F. (2021). Breakfast Skipping, Weight, Cardiometabolic Risk, and Nutrition Quality in Children and Adolescents: A Systematic Review of Randomized Controlled and Intervention Longitudinal Trials. *Nutrients, 13*(10), Article 10.
<https://doi.org/10.3390/nu13103331>
- Robson, S. M., McCullough, M. B., Rex, S., Munafò, M. R., & Taylor, G. (2020). Family Meal Frequency, Diet, and Family Functioning: A Systematic Review With Meta-analyses. *Journal of Nutrition Education and Behavior, 52*(5), 553–564.
<https://doi.org/10.1016/j.jneb.2019.12.012>
- Russo, R. G., Northridge, M. E., Wu, B., & Yi, S. S. (2020). Characterizing Sugar-Sweetened Beverage Consumption for US Children and Adolescents by

- Race/Ethnicity. *Journal of Racial and Ethnic Health Disparities*, 7(6), 1100–1116. <https://doi.org/10.1007/s40615-020-00733-7>
- Schneider, S., Schilling, L., & Osenbrügge, N. (2021). Determinants of soft drink consumption among children and adolescents in developed countries—A systematic review. *Central European Journal of Public Health*, 29(4), 290–300. <https://doi.org/10.21101/cejph.a6755>
- Serasinghe, N., Vepsäläinen, H., Lehto, R., Abdollahi, A. M., Erkkola, M., Roos, E., & Ray, C. (2023). Associations between socioeconomic status, home food availability, parental role-modeling, and children’s fruit and vegetable consumption: A mediation analysis. *BMC Public Health*, 23(1), 1037. <https://doi.org/10.1186/s12889-023-15879-2>
- Simone, M., Telke, S., Anderson, L. M., Eisenberg, M., & Neumark-Sztainer, D. (2022). Ethnic/racial and gender differences in disordered eating behavior prevalence trajectories among women and men from adolescence into adulthood. *Social Science & Medicine*, 294, 114720–114720. <https://doi.org/10.1016/J.SOCSCIMED.2022.114720>
- Sliwa, S. A., Merlo, C. L., McKinnon, I. I., Self, J. L., Kissler, C. J., Saelee, R., & Raspberry, C. N. (2024). Skipping Breakfast and Academic Grades, Persistent Feelings of Sadness or Hopelessness, and School Connectedness Among High School Students—Youth Risk Behavior Survey, United States, 2023. *MMWR Supplements*, 73(4), 87–93. <https://doi.org/10.15585/mmwr.su7304a10>

- Snuggs, S., & Harvey, K. (2023). Family Mealtimes: A Systematic Umbrella Review of Characteristics, Correlates, Outcomes and Interventions. *Nutrients*, *15*(13), Article 13. <https://doi.org/10.3390/nu15132841>
- StataCorp LLC. (n.d.). Retrieved June 6, 2025, from <https://www.stata.com/company/>
- Statistics Canada. (2006). Canadians' eating habits. *Health Reports*, *18*(2), 17–32.
- Statistics Canada. (2019, January 10). *Canadian Health Survey on Children and Youth (CHSCY)*.
<https://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&Id=1215270>
- Statistics Canada. (2020). *2019 CHSCY-User Guide*.
- Statistics Canada. (2022, March 30). *Income Reference Guide, Census of Population, 2021*. <https://www12.statcan.gc.ca/census-recensement/2021/ref/98-500/004/98-500-x2021004-eng.cfm>
- Surjadi, F. F., Takeuchi, D. T., & Umoren, J. (2017). Racial and Ethnic Differences in Longitudinal Patterns of Family Mealtimes: Link to Adolescent Fruit and Vegetable Consumption. *Journal of Nutrition Education and Behavior*, *49*(3), 244-249.e1. <https://doi.org/10.1016/j.jneb.2016.10.022>
- Tugault-Lafleur, C. N., Black, J. L., & Barr, S. I. (2017). Examining school-day dietary intakes among Canadian children. *Applied Physiology, Nutrition, and Metabolism*, *42*(10), 1064–1072. <https://doi.org/10.1139/apnm-2017-0125>
- Utter, J., Denny, S., Peiris-John, R., Moselen, E., Dyson, B., & Clark, T. (2017). Family Meals and Adolescent Emotional Well-Being: Findings From a National Study. *Journal of Nutrition Education and Behavior*, *49*(1), 67-72.e1.
<https://doi.org/10.1016/j.jneb.2016.09.002>

- Warren, C., Hobin, E., Manuel, D. G., Anderson, L. N., Hammond, D., Jessri, M., Arcand, J., L'Abbé, M., Li, Y., Rosella, L. C., Manson, H., & Smith, B. T. (2022). Socioeconomic position and consumption of sugary drinks, sugar-sweetened beverages and 100% juice among Canadians: A cross-sectional analysis of the 2015 Canadian Community Health Survey–Nutrition. *Canadian Journal of Public Health = Revue Canadienne de Santé Publique*, *113*(3), 341–362. <https://doi.org/10.17269/s41997-021-00602-8>
- Woodruff, S. J., Campbell, K., Campbell, T., & Cole, M. (2014). The associations of meals and snacks on family meals among a sample of grade 7 students from Southwestern Ontario. *Appetite*, *82*, 61–66. <https://doi.org/10.1016/j.appet.2014.07.017>
- Woods, N., Seabrook, J. A., Schaafsma, H., Burke, S., Tucker, T., & Gilliland, J. (2024). Dietary Changes of Youth during the COVID-19 Pandemic: A Systematic Review. *The Journal of Nutrition*, *154*(4), 1376–1403. <https://doi.org/10.1016/j.tjnut.2024.02.022>
- World Health Organization. (2020, April 29). *Healthy diet*. <https://www.who.int/news-room/fact-sheets/detail/healthy-diet>
- Yoon, C., Mason, S. M., Hooper, L., Eisenberg, M. E., & Neumark-Sztainer, D. (2020). Disordered Eating Behaviors and 15-year Trajectories in Body Mass Index: Findings From Project Eating and Activity in Teens and Young Adults (EAT). *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*, *66*(2), 181–188. <https://doi.org/10.1016/j.jadohealth.2019.08.012>

- Yoon, C., Simone, M., Mason, S., & Neumark-Sztainer, D. (2020). A single summative global scale of disordered eating attitudes and behaviors: Findings from Project EAT, a 15-year longitudinal population-based study. *Eating Behaviors, 39*, 101418. <https://doi.org/10.1016/j.eatbeh.2020.101418>
- Yu, H., Veeck, A., & Yu, F. (Grace). (2015). Family meals and identity in urban China. *Journal of Consumer Marketing, 32*(7), 505–519. <https://doi.org/10.1108/JCM-09-2014-1146>
- Zaborskis, A., Grincaitė, M., Kavaliauskienė, A., & Tesler, R. (2021). Family structure and affluence in adolescent eating behaviour: A cross-national study in forty-one countries. *Public Health Nutrition, 24*(9), 2521–2532. <https://doi.org/10.1017/S1368980020003584>