Health Education for the Uplift of Health Conditions and School Performance

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Abstract: Our topic is focused on health education within the school curriculum. It's to emphasize its importance in the short and long-course during the learning and growth process. Healthy diet presents an outstanding medium in enhancing cognitive efficiency and helps in assisting the acquisition process. Adopting a guided nutriment practice participates in empowering young individuals to better manage their consuming habits. It has been outlined in several studies across continents how food behaviorism, lifestyle factors, poor quality nutrients can compromise intellectual efficiency in the stage of knowledge acquisition alongside health issues. This has drawn serious concerns to governments and institutions (WHO, UNICEF, European Union, and states) to outpoint the impact of nutriments, notably their type and quality, on childhood health and development. Our paper is set to deliver scientific-based evidence through selected studies conducted across the globe on health and nutrition and their consequence upon pupils and school performance. The majority of the surveys centered on how good diet and appropriate food consumption habits or their absence could improve or impair the overall health conditions as well as school achievements. Health education programs throughout education curriculum can partake in drawing public awareness in regards to impoverished diets and processed fast-food. The aforementioned are often considered responsible for causing chronic diseases endowed with characterized symptoms. Integrating lifestyle principles in the education agenda would bestow worthy elements to amend physical and learning conditions.

Keywords: Food behaviorism, Quality nutrition, School performance, Heath education, Lifestyle factors

Introduction

It has been observed that national programs on Health Education participated in bringing awareness to young individuals with means and knowledge to attain improvements in health and scholar performance. This is possible through a configured curriculum implemented in schools for transmitting comprehensive knowledge on diet and selective quality nutriments. The WHO's recommendations urged states' involvement in pursuing efforts in such direction. Such health schemes are meant to empower school students in the long term and take into account lifestyle and health factors for better health conditions, and thus change patterns of behaviorism towards consuming habits. More important, health education programs on the very nature of various nutriments

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and their benefit in terms of value-added vitamins and minerals can be part of the core of teaching, in relevance to dietetics as an effective tool to reach the aim sought for. WHO gave an interesting definition for schools involvements for promoting various educational actions with the following remark: "*A school that is constantly strengthening its capacity as a healthy setting for living, learning and working*" (WHO, 1998, p. 2).Whilst in this, it is positioning the school as a field where representatives and fellow members of the school community and teachers can involve locals, parents, to work collectively for promoting health issues among pupils at an early age. To reach such a goal, a stream of actions can be performed to widely spread concepts and principles for/on health promotion, hygiene measures, and environmental preservation to enhance lifestyle conditions and take adequate choices at a local and national level (Ibid.).

Recently, a worldwide promotion of health education has been carried out at an international level for its implementation in schools and local communities in several states worldwide. The growing concern of prevalent chronic diseases such as diabetes, obesity, and cardio-vascular pathologies, due to low-energy poor diet, high-fat nutriments intake at an early stage gave alarming indicators to urge authorities and governments to react consequently. Furthermore, mental health and life conditions added gravity and growing concern in relevance to early adulthood health risk contingencies. Several research studies in this context highly spotted the link between children's health with that of the social and education outcomes (Taylor, Quinn, & al. 2012, p.1-2).

Today, the latest advancements in modern medicine do offer to certain extent medical solutions to counter widespread pathologies such as: obesity, diabetes, hypertension, and cardiovascular illnesses at the advent of their characterized symptoms. Nonetheless, the major difficulty resides in the incapacity of biomedicine to eradicate or treat harmoniously such chronic afflictions. The major sources of many illnesses are mostly linked to detrimental habits of processed food consumption and lifestyle factors. Hence, once clinical diagnoses are performed a list of medications are prescribed to treat identified symptoms of specific illnesses, but none without uncomfortable side effects in most cases. While if the processes is reversed, the ideal is to prevent causes of illnesses to appear from the first place, through a bestow awareness of nutriments quality and eating habits to start with. Nonetheless, there is a necessity to add in this stream, within the health promotion agenda, a well-grounded knowledge of our own biological functions and mechanism accessible enough to both young individuals and parents.

Nowadays, integrative medicine such as Unani-Tibb for example, fosters a holistic approach towards illness and health issues, bearing in mind the very nature of humor balances for each person's proper temperaments. Such concepts attach more importance to equilibrium of the inner biological system enable to reach a balanced state of homeostasis. Observing and learning these principles participate in drawing sight about human health mechanisms and anticipate adequate measures to sustain it. At the base, Unani-Tibb is a combined Greco-Arabic deeply rooted medicine, initiated with the advent of Hippocratic theories on medicine that was integrated later on with Avicenna's scientific medical fundamentals, *Canon of Medicine* (Ansari, Khan, 2017; Sheehan, Hussain, 2002). Today, the return of such notions with regards to health sustainment and its promotion, mainly through education and healthcare empowerment, can provide a good apprehension and control of our physical

conditions, vital needs and earnestly help manage lifestyle qualities. In addition, determining the natural temperament of an individual would not only bring insight into one's proper strength and weakness as far as healthcare, suitable diet, but will also recognize any predisposition to certain diseases, medically pertained to certain risk factors. In this, Hippocrates stated an interesting reflection: «*It is more important to know what sort of a person has a disease than what sort of disease a person has»* (Bhikha, Saville, 2014, p. 15).

The concept draws us back to the ancient Greek theory associating the human body's attributes, closely linked to Man's natural environment (i.e. earth, water, air and fire). Identifying the dominant quality of an individual at an early stage would give a good apprehension of one's proper nature and thus determine the initial humors (i.e. hot, moisture, cold and dry qualities), lifestyle factors, together with the ideal diet type in correspondence. Comprehending our temperaments early enough would better prepare an individual to sustain an adequate regime/diet, since each temperament is correlated with specific physical, mental and personality traits. Temperaments and qualities in human beings are divided into four broad categories, with a dominant and subdominant combination. The four major temperaments identified with proper traits are: the Sanguineous, reputed to be persuasive, sociable, and talkative; the Bilious can be resourceful, outspoken, dominant, leader and short tempered; while the Melancholic tends to be thoughtful, logical, analytical, and perfectionist; the Phlegmatic traits is known to be calm, accommodating, patient and a good listener (Alam, Nasir, 2020; Naz, Sherani, 2014). Temperaments influence our food preferences and ideal environment. To set an example, a sanguineous dominant and phlegmatic subdominant temperament should preferably abstain from lifestyle factors that expose one to excessive moistness in food as well to moist weather conditions. Whereas a Bilious/Sanguineous combination will have a dominant quality of heat and would better follow a lifestyle that will decrease the heat level. Taking into account these guidelines would give a personal comprehension of one's own ideal conditions and adequate diet intake (Bhikha, Saville, 2014 pp.21-22).

The following graph represents the basic four temperaments with the corresponding qualities:

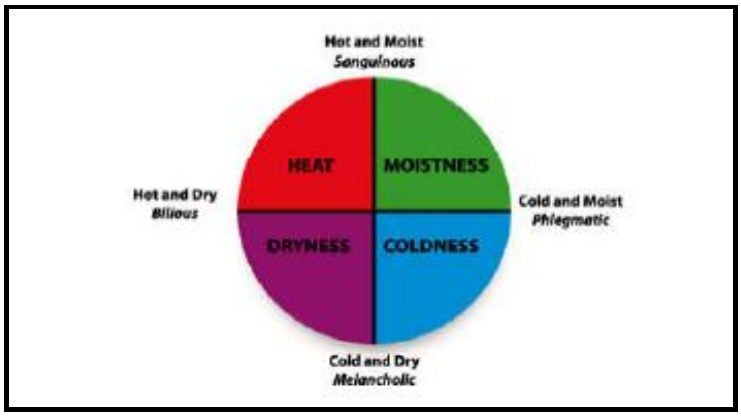

Figure 1. Temperaments associated each with humor qualities: combination dominant/subdominant (Cf. Bhikha & Dube, 2018, p.27915).

Additionally, quality nutriments, proper sleep, physical activity and appropriate eating habits would contribute to actively preserve the homeostasis balanced within the *Physis* system (e.g. *Physis* is an inner human healing mechanism, responsible for managing the three variables: proper temperament, humours, and lifestyle factors). Observing these principles would participate in striving against diseases before their occurrence, and thus stimulate the healing mechanisms from possible illnesses. This, when bearing in mind that drastic qualitative changes are often associated with pathological afflictions, presenting accordingly identifiable signs and symptoms (Boom & al., 2020; Bhikha, Dube, 2018; Bhikha, Saville, 2014).

Recently, a clinical research conducted a systematic review to inquire on patients' needs for education in health care. Analyses and evaluation were carried out to assess the appropriate advice and various tools to meet demands for information on health issues, suitable diet, and self-care management for patients under medical care. The purpose was essentially guided towards preventive measures to anticipate risks of common diseases or detect eventually their possible signs (Beydokhti, Nabavi & al., 2020). The study was implemented on adult patients through questionnaires and interviews, with a number of various patients seeking information and learning requirements. The main objective, in the light of education in healthcare, was to help attain individual empowerment on health management by observing healthy diet habits, thus in such case anticipate possible illnesses to occur later. But it's also primordial to start health management at an early stage of life, notably during school age, before recurrent diseases emerge once adult.

Objective

The present study provides various literatures conducted across the globe relevant to health and diet nature, food behaviorism and their significant impact on physical conditions and cognitive support. Additionally, an accent is expressed on how observing lifestyle factors and health management would empower young individuals to reach well-being and participate in enhancing school achievements. The emphasis on the value of health education didactic and its inclusiveness in the education curriculum can help raise awareness of health risks and promote preventive methods, thus contributing to better physical and mental conditions at an early stage. A special focus is given with respect to the role of CAM in health education, notably through the Unani-Tibb medical and health concept. The attempt is to outline the role and concept of Unani health philosophy and health care education in relation to human beings' proper mechanism and their surrounding environment.

Area of study: Health Education curriculum and its implementation for the enhancement of adolescents' health, diet quality and school performance.

Methodology: Primarily, it consists on giving analyses of various recent research studies and surveys undertaken across many countries with regards to health and nutrition quality, as well as their implementation in schools in favor of well-being and learning performance nationwide. In a second phase, present an overview of the major consumables that predispose individuals to health deterioration, exposing them to illnesses and chronic diseases. Finally, present transversal analyses and convene in respect various disciplines: health science,

education, medicine and sociology of food consumption. In addition, introduce different approaches of the selected materials and deduce elements of interest for our conclusion.

Sociological approach of the fast-food concept: the roots of a rationalized commercial model

The contemporary eating model and type of nutriments among adolescents with the advent of industrial food products had generated widespread preoccupying health concerns such as: obesity, diabetes, hypertension, high level of LDL cholesterol level (low-density lipoprotein) and cardiovascular pathologies. The principal etiological source of common chronic health disorders in today's food eating habits often regards consumption of impoverished commercial nutriments. Their impact on young individuals at an early stage would bring about a shortfall of essential vitamins during the growth process. The most known vitamins that adolescents much need enable to ensure natural development and sustain appropriate health condition are those of A, C, D, E, and K sort, adding to them a series of B vitamins: thiamin (B_1), riboflavin (B_2), niacin (B_3), pantothenic acid (B_5), pyridoxal (B_6). In addition to the precedent, vital minerals supply such as: calcium, phosphorus, potassium, sodium, magnesium, iron, and zinc are needed to reach a healthy state and upgrade physical conditions. The supply of such minerals and vitamins will also participate in encountering diseases and strengthen the human immune system (Cf. Dietary Guidelines for Americans, 2015-2020).

American food industry rapid diffusion, notably the fast-food model, has inspired largely many regions to imitate the chain manufacture process of substandard food quality, based on taste and processed nutriments that contains high levels of calories, yet deprived from essential vitamins. During the last decades, we witnessed consisting and preponderant installment of fast-food multinationals at a worldwide scale. Such a powerful expansion of food fabrics initiated a new trend of eating habits to most consumers, especially among adolescents. The pitfall engaged in such cases is to be found cultural and economic, reinforced by a powerful marketing incentive towards flourishing fast food and cost-effective business, therefore a production system capable of generating considerable profit. In consequence, it constitutes an important part of the mass economy, in the category of consuming goods (i.e. Macdonald, KFC, Burger king, extensive commercial food fabrics, ready to cook meals embedded with additives).

A model of the sort has participated in diffusing across continents, the U.S. Made food and eating habits concept and gave rise to fast-food businesses as a reference to follow; which became a worldwide spread epitome of what John Tomlinson (1999) called *glocalization*. This was so, by the introduction of popular quick meals formulas (i.e. burgers, chicken dips, fries, soft drinks, sodas, sweets, creams) compatible to their former initiators in terms of food offer and business set, that George Ritzer expressed by *The McDonaldization of Society* (Ritzer, 2011). A concept based on a rational and uniform system of production, which somewhat takes us back to the Weberian theory of rationalization (Max Weber, 1864–1920), that not only impacted the economy with its principle methods of rationalization (i.e. efficiency, calculability, predictability and control), but also the society itself (Ritzer, 1998, pp. 46-47). Such drift was responsible for introducing an inclination towards a global cultural homogenization in terms of food fabric and consumption standards. On the other hand,

it also dehumanized the catering field to a metric and robotized food manufacture; optimizing in this course services and efficiency as a principal objective. In this, it reduced the act of nourishment strictly to a commercial object ready to be consumed.

Nonetheless, consumers became acquainted in this path to a pattern of eating habits and modes of quick consumption (e.g. buy and take away or eat and turn for the next). Such a system didn't consider healthy issues, despite evident repercussions (i.e. obesity, diabetes, cardiovascular pathologies) on consumers' health from the type of fast food snacks that renowned fabrics offer. Aside from that, there can't be found a place for diversity in terms of menu choices, regarding qualitative meals proposals for such food intake. Needless to say, to which extent the impact of publicities, films and especially images in drawing consumers' attention towards fast food innovative products has created a strong trend and an irresistible stimulus to consume fast commercial meals (Powell & al., 2007). The modern style of food consumption encouraged and induced young adolescents to get accustomed to such food habits, thus engendering eating behavior toward a category of catering offer. One of the keystones in this stream of poor diet is the taste potency, which triggered the desire to consume notorious quick food (i.e. Burgers, tacos, fried chicken dips, noodles, soft drinks, sugary sweets, etc.).

The savory effect and the synthetic taste

When coming to the subject of flavor, one of the most extensively used food-additives in commercial food that exists in the food industry is Monosodium Glutamate (MSG), equally called *savory*. It's also known in many regions by the name of "China salt" for its faculty in enhancing flavor in processed comestibles (Niaz, Zaplatic, & al, 2018). The savory substance is commonly found in ready-cooked meals and fast-food formulas. The additive is introduced as well in industrial flour, usually employed to coat chicken meat and thus embedding it with a special aroma. MSG has been practiced for many decades and until now in commercial food for flavoring purposes basically. It's copiously used for a wide range of Chinese and commercial food in general. According to our referenced scientific research, MSG extensive usage has generated multiple pathologies to consumers at an alarming rate. The most commonly known illnesses due to the overconsumption of nutriments containing MSG distinctly identified are: obesity, metabolic disorders and a potential risk of tumor formation. Moreover, the industrial component has shown threatening traces of toxicity affecting vital organs, specifically the liver for causing some hepatic damage, and in many cases gastric distension symptoms. MSG can also impact the nervous system, once the glutamate is released in the human metabolism. Current ingestion of such additives is responsible for obesity in multiple cases and can be associated with chronic inflammatory symptoms. A common pathology discovered in the past years is the *Chinese restaurant syndrome* (CRS) that was induced through the extensive use of MSG. Patients consuming commercial food containing glutamate complained of a burning sensation at the neck, back, and experienced general weakness. (Ibid: 273-275). MSG toxicity and drawbacks, given the numerous pathologies caused, is to be considered as a serious public threat, specifically among young individuals. This is so, when bearing in mind their plain tendency towards attractive commercial quick meals. Inappropriate food habits could preclude school performance and intellectual efficiency, in the absence of educational means to raise awareness regarding eating behaviour, type

of diet and observation of lifestyle risk factors.

Various quantitative scientific studies: the impact of quality nutrition on school performance

A recent scientific study concentrated its research on school students living in the Viseu district in Portugal, with the support of HBSC (Health Behavior in School-Aged Children). It showed to which extent food behavior and incongruous eating habits can affect health and school performance or conversely, a good diet would favorably enhance them. The method based essentially on the diet factor type, its frequency, school performance and health condition showed interesting results. Other social determinants regarding social-demographic criteria and study environment were taken into account as relevant variables for the survey (Duarte, Pestanac & al., 2016). In this perspective, an analytical cross-sectional study was carried out on students pursuing basic full school cycles aged between 11-17 years.

Questionnaires were submitted to 380 participants of both genders to examine diet type habits and its influence on school performance (i.e. presence of qualitative breakfast or its absence, type of nutriments that include vegetables, fruit, fish, and water consumption). Other information was collected among adolescents concerning consumption of food high in fat and carbohydrates (glucides) rich in calories and drinks containing white sugar (i.e. sodas, sweets, burgers, fries, sausage, hot dogs). The table hereafter illustrates diet findings with respect to school performance.

Table 1. Diet type and school performance

Diet type	Average sorting			χ^2	P
School performance	Non healthy diet	Intermediate diet	Healthy diet		
Study environment	166.46	181.70	220.31	21.464	.000
Study planning	164.59	179.81	222.83	24.984	.000
Study method	169.54	186.94	215.81	15.659	.000
Reading Skills	166.82	179.61	220.23	21.164	.000
Motivation for study	168.05	171.30	220.17	20.807	.000
Overall school performance	163.11	177.59	224.95	28.194	.000

Source : (Duarte, Pestanac & al., 2016, p.165)

A percentage between 7% and 8% of students confirmed skipping breakfast while other students did not. Formerly, a scientific study (Cahil, 2013) proved that breakfast rich in minerals (i.e. potassium, selenium, boron, with ratios of unsaturated fat, proteins and fruits) and fresh dairies (Yoghurts and milk) would supply the brain with the necessary elements and improve concentration and memory, thus assisting the learning process. The conclusion confirmed the influence of quality nutriments on school performance, cognitive efficiency and general health condition, while poor diet did affect health and school performance among adolescents (Ibid. pp. 164-166). However, the study did not include evaluative methods on school performance correlated in adequacy with proper learning potential and students' results at an individual scale, but rather on the impact of a healthy

diet on school performance.

Nonetheless, the Portuguese General Directorate of Health has integrated a National Program for the Promotion of Healthy Eating (PNPAS) to promote healthy diet components, notably in schools, as a pedagogical action and measures to counter cardiovascular diseases, obesity and other illnesses related to fat as well as white sugar negative effects and unhealthy nutrition.

Regarding national health plans, the French nutritional policy, Programme National Nutrition Santé (PNNS), started a similar public program for promoting healthy diet since 2001, updated until 2019 with new directories. Primarily, the objectives were to promote a qualitative diet in school meals based on ratios that contain sufficient proteins, vegetables, fruits, and dairy products in each plate in school canteens, thus accustoming pupils and university students towards a healthy diet (Cf. *légifrance* link, Clause 1, PNNS, chart, 2011). Moreover, the actual plan is meant to hinder chronic diseases at an early stage, encouraging young individuals to practice physical activities, while countering equally marketing pressure on adolescents towards commercial fast-food consumption (Etilé, F., Hercberg, S., & al., 2017, pp.13-35).

Finally, such preventive measures can be conceived as a public leverage policy to redress eating habits and counter fast-food trends among adolescents. Equally, health campaigns of the sort aim at raising awareness on the value of qualitative diet and incite for health sustainment, oriented towards the young generation.

A medical observational study conducted by the Korea Youth Risk Behaviour Web-based Survey (KYRBWS), accumulated within five years (2009-2013) resources from the Education Ministry. The data concerned the school population in Korea. It gave evidence on how dietary habits are associated with school performance. Unlike the latter study, it was carried out nationwide throughout 43 regions in Korea. The survey included volunteer students at an anonymous base. Yet, teachers were actively involved in selecting classes and submitting online questionnaires to their students. A total of 359,264 participants took part in this census (184,801 males and 174,463 females aged from 12 to 18).

The questions were meant to collect information on the frequency of local fast-food consumption (i.e. processed food and ready to cook noodles), but also the regularity of breakfast taking or their absence and the proportion of micronutrients absorption amongst school students. Several demographic and socioeconomic factors, as well as dietary habits and stress level self-assessments, were taken into account for the study (Kim, & al., 2016). These complementary variables, often useful indicators in health and social determinants surveys, were considered enable to provide more refined details on eating habits in correlation with academic performance among the school population. The following table illustrates the outcome of the survey based on collected data in regards to nutrition factors and their impact on school performance.

Table 2. Illustration of nutrimental factors and their % in relation with school performance

Factors	A	B	C	D	E	*P*-Value
Breakfast, %						<0.001*
6–7 times a week	2.34 (2.20–2.48)	1.99 (1.90–2.10)	1.67 (1.60–1.75)	1.29 (1.23–1.35)	1	
3–5 times a week	1.36 (1.29–1.45)	1.37 (1.30–1.44)	1.35 (1.29–1.41)	1.20 (1.14–1.25)	1	
1–2 times a week	1.12 (1.05–1.19)	1.14 (1.08–1.20)	1.19 (1.14–1.25)	1.12 (1.07–1.17)	1	
0 time a week	1	1	1	1		
Lunch, %						<0.001*
6–7 times a week	1.12 (1.00–1.26)	1.17 (1.07–1.28)	1.16 (1.07–1.26)	1.13 (1.04–1.22)	1	
3–5 times a week	0.72 (0.64–0.81)	0.81 (0.74–0.88)	0.95 (0.87–1.03)	1.02 (0.94–1.11)	1	
1–2 times a week	0.74 (0.65–0.84)	0.72 (0.65–0.79)	0.85 (0.78–0.93)	0.89 (0.82–0.97)	1	
0 time a week	1	1	1	1		
Dinner, %						<0.001*
6–7 times a week	1.38 (1.22–1.55)	1.22 (1.11–1.33)	1.08 (0.99–1.17)	1.07 (0.84–1.16)	1	
3–5 times a week	0.86 (0.76–0.97)	0.86 (0.79–0.94)	0.84 (0.77–0.92)	0.98 (0.91–1.07)	1	
1–2 times a week	0.84 (0.74–0.95)	0.83 (0.76–0.91)	0.87 (0.80–0.95)	1.00 (0.92–1.08)	1	
0 time a week	1	1	1	1		
Fruit, %						<0.001*
≥7 times a week	1.73 (1.62–1.86)	1.49 (1.41–1.57)	1.43 (1.36–1.50)	1.18 (1.12–1.24)	1	
3–6 times a week	1.58 (1.48–1.68)	1.54 (1.47–1.62)	1.47 (1.40–1.53)	1.26 (1.21–1.31)	1	
1–2 times a week	1.16 (1.09–1.24)	1.20 (1.14–1.26)	1.20 (1.15–1.26)	1.14 (1.09–1.18)	1	
0 time a week	1	1	1	1		
Soft drink, %						<0.001*
≥7 times a week	0.42 (0.38–0.46)	0.44 (0.41–0.47)	0.55 (0.52–0.59)	0.72 (0.68–0.76)	1	
3–6 times a week	0.59 (0.56–0.62)	0.62 (0.59–0.64)	0.70 (0.67–0.73)	0.84 (0.80–0.87)	1	
1–2 times a week	0.79 (0.76–0.82)	0.80 (0.77–0.82)	0.85 (0.82–0.88)	0.93 (0.90–0.96)	1	
0 time a week	1	1	1	1		
Fast food, %						<0.001*
≥7 times a week	0.83 (0.72–0.96)	0.63 (0.55–0.72)	0.79 (0.70–0.89)	0.81 (0.73–0.89)	1	
3–6 times a week	0.75 (0.70–0.79)	0.73 (0.69–0.76)	0.79 (0.75–0.83)	0.82 (0.78–0.86)	1	
1–2 times a week	0.97 (0.94–1.01)	0.94 (0.91–0.97)	0.95 (0.92–0.98)	0.95 (0.92–0.98)	1	
0 time a week	1	1	1	1		
Instant noodle, %						<0.001*
≥7 times a week	0.62 (0.55–0.70)	0.62 (0.56–0.68)	0.78 (0.71–0.85)	0.86 (0.80–0.94)	1	
3–6 times a week	0.67 (0.64–0.71)	0.77 (0.74–0.80)	0.83 (0.80–0.86)	0.89 (0.86–0.92)	1	
1–2 times a week	0.94 (0.90–0.98)	0.98 (0.94–1.01)	0.99 (0.95–1.02)	0.98 (0.95–1.02)	1	
0 time a week	1	1	1	1		
Confectionary, %						<0.001*
≥7 times a week	0.86 (0.80–0.93)	0.86 (0.81–0.91)	0.88 (0.83–0.94)	0.95 (0.90–1.01)	1	
3–6 times a week	1.09 (1.03–1.14)	1.07 (1.02–1.11)	1.05 (1.01–1.09)	1.06 (1.02–1.11)	1	
1–2 times a week	1.04 (0.99–1.09)	1.05 (1.01–1.09)	1.05 (1.01–1.09)	1.04 (1.00–1.08)	1	
0 time a week	1	1	1	1		
Vegetable, %						<0.001*
≥7 times a week	1.48 (1.37–1.61)	1.72 (1.61–1.85)	1.69 (1.59–1.81)	1.47 (1.38–1.56)	1	
3–6 times a week	1.24 (1.14–1.34)	1.50 (1.40–1.60)	1.61 (1.50–1.72)	1.42 (1.33–1.51)	1	
1–2 times a week	1.01 (0.93–1.11)	1.18 (1.10–1.27)	1.25 (1.16–1.34)	1.21 (1.14–1.29)	1	
0 time a week	1	1	1	1		
Milk, %						<0.001*
≥7 times a week	1.35 (1.28–1.43)	1.28 (1.22–1.34)	1.23 (1.17–1.28)	1.16 (1.11–1.21)	1	
3–6 times a week	1.35 (1.28–1.42)	1.32 (1.26–1.37)	1.26 (1.21–1.31)	1.17 (1.13–1.22)	1	
1–2 times a week	1.06 (1.00–1.12)	1.06 (1.02–1.11)	1.07 (1.03–1.12)	1.06 (1.02–1.10)	1	
0 time a week	1	1	1	1		

* Significance at $P < 0.05$.

Ratios: Adjusted odd ratios of dietary habits for school performance using multinomial logistic regression analysis with complex sampling. (Cf. Kim, Sim, 2016, p.5).

The medical study delivered approximate values about dietary habits and their influence on school performance using structural equation models and various analytic tools, such as multinomial regression analysis with complex sampling. While another analytical test (ANOVA) was used to measure variables of age and physical activity, besides the Chi-square test for analysis criteria based on: gender, obesity presence, region of residence, subjective health and stress level, with $P < 0.05$ significance (Ibid., p. 3). The observational scientific study did an extensive survey throughout an exhaustive examination, which enabled in giving scientific evidence over a large school population in several regions in South Korea. The conclusion confirmed the presupposition that nutriments quality does influence school performance. It unveiled the fact of having regular meals without skipping breakfast, while observing good eating habits (i.e. consumption of fresh fruits, vegetables, and essential proteins) acted favorably towards school performance.

Nevertheless, poor diet with consumption of processed food, high sugar level drinks, and irregular frequencies of meals impacted unfavorably school performance. This extensive scientific study demonstrates diligently through several specialized settings, the impact of diet on school performance and physical conditions, concerning school students inside Korea. It also offers a technical medical perspective on health issues regarding nutriments, while averting in this course chronic known diseases at an early phase.

However, a summarized description of various pathologies linked to impoverished diet can join the rest of the findings, notably that of the KCDC (Centers for Disease Control and Prevention of Korea). What's more, providing worthy education to individuals, through vulgarized medical information on eating habits and type of nutriments can be advocated likewise. This implementation could present an overview about the value of a suitable diet, while raising awareness to adolescents and parents as well about efforts to invest on countering fast-food trends. Whereas, a significant strategy by insisting on the importance of lifestyle factors could put emphasis on healthy diet consumption, hence assist in altering eating patterns when necessary.

Morality and ethical controversy on food behaviorism and beliefs

Ethical questions can be raised in regards to dietary habits and healthy food consumption amidst adolescents, in relevance to morality towards food consumption, considered here as an integrative approach of our study and analyses. This is so, in regards to eating behavior, nature of food consumption, along with cultural and socioeconomic factors (Janssen and al., 2018; Aounallah-Skhiri and al., 2008, Hargreaves and Schlundt, 2002; Eertmans and Baeyens, 2001). The main foundation about morality in healthy eating or its antonym is to release the grounded significances and meanings that frame young consumers in their food choices and behavior. Nonetheless, it is equally considerable to examine how good or bad food is conceived amongst adolescents in terms of value and symbolic, while focusing simultaneously on the social barriers and structural changes in relevance to healthy diet concerning adolescents (Sun & al., 2019; Townsend & al., 2017, Tiedje & al., 2014; Pridgeon & al., 2013). Unhealthy eating among young individuals in the U.S., as an example to set, became a serious public concern in regards to adolescents' unhealthy diet, body weight, and eating behavior (Chin & al., 1999-2013; Lindsay, 2021; Reeves & al., 2006). Owing to such preoccupation, a conducted study in the state of California throughout 2015-2016, examined the association between socioeconomic status (SES) with healthy eating and morality amongst a sample of young population (Fielding-Singh, 2019).

The study was based on semi-structured interviews completed on a number of 74 adolescents from different origins and parental descent (White, Black, Hispanic, and Asian), along with the category of their respective economic standards (low, middle, high-class social groups). It showed in one hand, the relation between the levels of affluence of those whose parents can afford substantially healthy food (fruits, vegetables, natural sustenance, organic food, and home cooked meals), and those who cannot grant to their children frequent intake of frequent healthy food (low-SES residents). On the other hand, despite socioeconomic and cultural disparities, adolescents of all categories considered healthy food as morally *good* but some expressed their incapacities to have regular access to what they believe as *healthy food*, but restrained themselves to fast-food meals due to their limited budgets. Middle and high-income social groups estimated themselves as *healthy eaters* and healthy individuals, but conceived lower income social groups more inclined to consume unhealthy food (poor diet & fast-food intake) and were also more exposed to illnesses. Beliefs were shared that eating healthy is *socially worthy* and reflects a person's moral superiority, while asserting analogically self-esteem to their own image. However, such conviction from the interviewed adolescents did not exclude morality and beliefs of their fellow low-SES schoolmates but rather gave them incentive to act in the same manner, thus enabling them to

experience equal self-esteem. In conclusion, adolescents in this study, especially with the middle- and high-income categories, affirmed their positive view on healthy eating given their beliefs and morality about nutrition. Furthermore, they were determined to independently put into practice a healthy diet in their eating habits (Ibid. pp. 41-43).

The food market social influence

Still, we find the considerable influence of industrial market offer and advertising (Thai, & al., 2017) on food choices and behaviour on a category of socio-economic populations, that often reorient eating consumption to a homogenized model of nourishments, embedded with certain market symbolism and stimuli (e.g. economically affordable quick meals, gathering in groups and eating outside style, social and economic adhesion to a uniformed menu offer: soft drink, fries, burgers, etc.). Although adolescents might have their own initial cultural food standards, which would translate their affiliated identity in regards to food according to their regional backgrounds (i.e. popular plates: Mexican plates, Spanish Paella, Asian noodles, Japanese Sushi, Italian national plates, and so forth). Nevertheless, industrial products and fast-food outlets affected to large extent habits of eating, and in consequence modified the morality attributes in terms of significance towards food intake and its meaning (e.g. taste pleasure and food trend prevails over body's need of healthy input).

The ethical dimension about organic food and the social awareness

Luckily, the counterpart of the industrial food model, there exist the organic and fair trade products of ethical origin, which is gaining strong momentum among consumers and a significant part in market share. Statistics of world organic agriculture crop showed a turnover of 97 billion dollars in 2017, and previously in 2013, a bundle of 62.8 billion dollars were registered in the US alone (Willer & Lernoud, 2013, 2019), this with a steady growth rate of organic production performed each year.

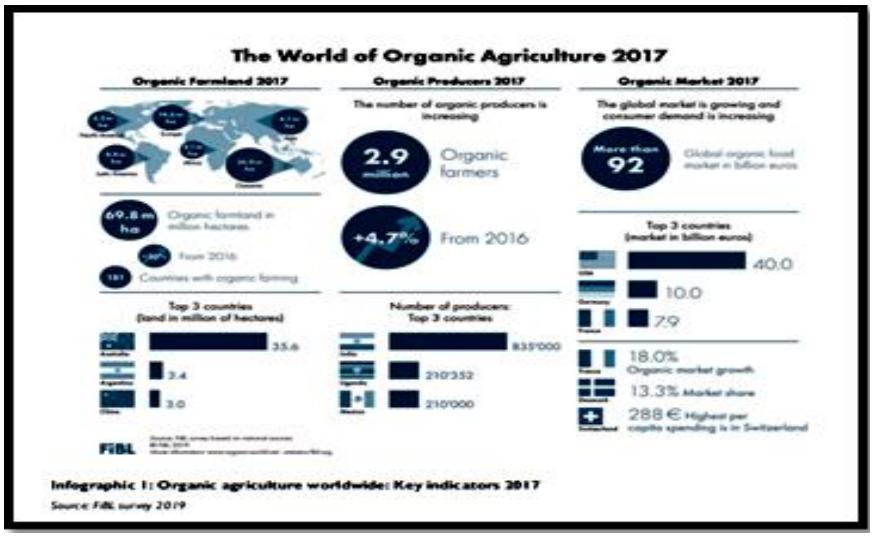

Fig. 2. World Organic Agriculture growth in different regions. Source: (Cf. The World of Organic Agriculture Statistics and Emerging Trends 2019, p.34)

The emerging increase of interest in biological products harvested with less extensive and abused agriculture revealing several significances. Morality motivated drift towards pro-environmental and sustainable organic products underpins ethical and predetermined consciousness towards a selective choice on food consumption and purchasing (Bartanova & al., 2015). Nonetheless, the public came to be more aware nowadays of healthy food standards due to the diffusion of recurrent campaigns and information on quality food and its origin. Communication of the sort helped rising ethical questions on sustainable products across the Media and through non-profit world associations, this in favor of consumers' rights and sustainable agriculture on food issues. The outcome of such change and endeavors constructed a better comprehension about food origin and quality, linking all things considered, ethical beliefs and personal commitment in regards to health concerns, diet nature, ethically produced products and interest for the local crop. The other foundation in this course is the notion of moral satisfaction and human sentiments of self-credibility. It's especially the case when supporting *reasonable* produced food of ethical origin: pro-environmental and fair sustainable agriculture, as well as local organic products.

Following such perspective, an increasing number of individuals reoriented their consuming preference, seeking beside taste and worthy nutriments consumption habits, symbolic meanings by supporting a just cause in their experience through nutrition. In this, values become a core from which motivation for purchasing and consuming food of ethical origin gives a sense of reward to the moral equation. Since contributing to fair trade food for a number of consumers is perceived as a plausible value. Nonetheless, the other side of the moral satisfaction is faith in the superior quality of organic and sustainable agriculture in terms of taste and health benefit. It's so for a number of households in Europe and non-members of the EU as shown in the survey (Ibid., pp. 138-39).

Discussion

The various studies and interrelated subjects discussed beforehand attempt to give evidence on the substantive effects of diet nature on health and school performance. It also draws a critical examination on food industry fabrics in observing how and to which extent it had influenced eating habits and food behaviorisms among young individuals. The prevalence of health risks factors due to poor diet and fast-food among children and adults brought serious health and public drawbacks in producing chronic diseases such as: diabetes, obesity, cholesterol increase, inflammatory pathologies, and cardiovascular disorders. The main interest is to prevent factors of recurrent morbidities of the kind to occur among school children and students precociously. Thus, in this, participate in preserving health and upgrade school performance during the learning process.

Conclusion

Health Education can be perceived as a constructive curriculum in school education. It offers pedagogical means to *empower* pupils for better health management, while raising parents' *awareness* on eating habits inside and

outside the family composition, foreseen as preventive measures. This can be possible by introducing in the teaching scheme units grounded knowledge on nutrition and the human biological system, while insisting on lifestyle factors to achieve harmony to the global health equilibrium. Various teaching settings can be implemented in regards to vital vitamins needed to sustain health and to counter illnesses. Basic materials on micronutrients could be suggested within the syllabuses' components, thereby emphasize on their role for supporting organic functions (e.g. all the necessary vitamins and minerals found in natural food: fruits, grains, vegetables, meat). But not the least, specificities can be included in the curriculum on the necessity of adequate macronutrients requirements for their energy supply (e.g. proteins, adequate carbohydrates, lipids). Moreover, notions about temperaments and humor balances, through selected knowledge found in integrative medicine for example, can be taken into account, insisting on their importance for placing adequate knowledge for health care and suitable diet at an individual scale. Therefore, by promoting educational programs about diet and health issues will enable young individuals to reach the objective sought for in providing wellbeing and health risks prevention. Last but not the least, the notion of morality approach in food and consumption is to be considered as a complementary principle in HE, which might in consequence helps modify eating patterns and behaviour rightfully, but could also build symbolic meaning towards food.

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