Nutritional education in kindergarten – an analysis of the Romanian preschool curriculum

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Abstract: If the guidelines of nutrition education are followed, they will ensure a good health and a high level of comfort in life. Creating healthy eating habits and involvement in sports has a positive impact on children. This article presents a qualitative research regarding the specificity of nutritional education in preschool. The study contains an analysis of the Romanian preschool curriculum from the above-mentioned perspective. The results of the collected data are discussed by taking into account the educational objectives and behaviors as they are listed in the Romanian curriculum, and the nutritional education contents from the angle of the structured activities that take place in kindergarten.

Key words: nutrition, nutritional education, kindergarten, Romanian curriculum, content analysis

1. The increasing emphasis on the health of children and the need for nutritional education in kindergartens

Many recognize the need for changes to promote healthy school environments including food services, health related curriculum, and wellness activities and resources (Stallings VA, Yaktine AL, 2007; Longley C, Sneed J. , 2009; Rainville AJ, Choi K, 2009; Moag-Stahlberg A, Howley N, Luscri L, 2008). Nutrition education ranks high on the public agenda, and interest in food and nutrition is widespread, including an increased awareness of nutrition education in schools.

Early childhood is a period when children develop many food and nutrition-related attitudes, behaviors, and preferences during the preschool years (Birch L, Sullivan S., 1991). Therefore, positively influencing food preferences during early childhood aids in the establishment of lifelong healthy food habits.

Scientific literature shows strong evidence that the prevalence of pediatric obesity has increased rapidly in recent decades and that childhood obesity is seen as a primary pediatric health problem and crisis in developed nations (Ebbeling CB, Pawlak DB, Ludwig DS, 2002). Obese children of ages 2–5 are more likely to remain overweight throughout the preschool and school years (Skelton JA, Cook SR, Auinger P, Klein JD, Barlow SE, 2009) and are at greater risk for remaining overweight as adults (Guo SS, Wu W, Chumlea WC, Roche AF, 2002). Also, eating habits established in childhood are likely to track into adulthood (Kelder, et al, 1994; Resnicow et al, 1998;

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Singer et al, 1995).). Obese preschoolers are subject to weight-based stigmatization from same aged peers (Puhl RM, Latner JD, 2007) and have more parent and teacher reported behavioral problems at entrance to kindergarten than healthy weight preschoolers (Datar A, Sturm R, Magnabosco JL, 2004). Furthermore, there is widespread concern amongst parents about their children's diets, and especially consumption of vegetables (Gibson et al., 1998). Environmental and policy changes in the school settings are one of the most frequently proposed measures to address childhood obesity (Gostin, 2007; Swinburn et al., 2004).

Larger portion sizes could be contributing to the increasing prevalence of overweight among adults and children (Hill & Peters, 1998). Roll et al. (2000) revealed by their findings that 5-year-old children ate greater amounts when presentend with larger portions; in contrast, food intakes of 3 ½ year-old children were not affected by portion sizes. Their patter of results is consistent with other findings indicating that as children develop, their food intake is increasingly affected by a variety of social, cultural, and environmental factors (Birch & Fisher, 1995; Birch et al., 1989; Birch et al., 1984).

McGinnis et al. (2006) noted that in addition to biological and socio-environmental influences, commercial and media promotion of branded foods and beverages plays a significant role in the development of healthful habits. Marketing of foods to young children usually includes positive and colorful environments with playful and appealing characters (Johnson, Bellows, Beckstrom & Anderson, 2007). Also, younger children are much more likely to believe that TV ads tell the truth (Clancy-Hepburn et al., 1974). Clancy-Hepburn et al. (1974) found that the children who reported more frequent consumptions of snack foods also indicated a stronger preference for consuming advertised foods.

The busy work schedule of the parents can influence the amount of time they spend in the kitchen in order to prepare meals, reason why consuming foods prepared outside the home can become a habit. Guthrie et al. (2002) mentioned that more Americans are making food prepared outside the home a regular part of their diet than ever before, and there is no expectation that this shift will reverse itself. Bowers (2000) also supports this, saying that one of the most notable changes in the food habits of Americans has been the shift away from home-prepared food. Increasingly, even meals consumed at home may be purchased from a restaurant or fast-food establishment to take home (take-out) or be delivered (Jekanowski, 1999).

Parents' own food preferences, intake patterns and eating behaviors influence the foods available to young children, and parents also serve as models for children's behavior, affecting early learning of food preferences and eating behaviors (Ventura & Birch, 2008). Preschool children are dependent on parents and caregivers for food; parents' choices about feeding include the context when feeding will occur, the foods and portions sizes that will be made available to children, and which feeding practices will be used to promote or discourage children's eating. Parents' choices about feeding become key determinants of children's eating experiences.

Children's food preferences impact heavily what is purchased because parents of children feel that it was not reasonable to purchase foods that children would not eat. But children's initial rejections of new foods do not

represent innate food preferences, but signal transient reactions that can be changed and developed through food familiarity experiences (Birch, 1998). "Food familiarity" refers to children preferring foods that are familiar to them. Repeated exposure to new foods (as many as 8 to 15 exposures may be necessary) in a positive environment has been shown to increase acceptance in children, whereas limited exposure to a variety of foods seems to limit food preference development (Pliner, Pelchat &, Grabski, 1993; Birch, 1999, Wardle, Cooke et al., 2003; Wardle, Herrara & et al., 2003).

Introducing young children to new foods is critical because biological factors influencing children's food preferences include a resistance to unfamiliar foods (Schwartz & Puhl, 2003), which is known as food neophobia – fear of new foods (Birch, 1998; Cooke, 2007). This neophobic response, or reluctance to taste new or unfamiliar foods is a natural and protective mechanism that is one of the most common reasons for food rejection in young children. "Visual familiarity" (children's preferences for foods that they frequently see in their environments) can be a useful strategy for reducing children's neophobic reactions to new foods and encouraging healthy food preferences (Dazeley, Houston-Price & Hill, 2012). Simply seeing a food on a regular basis can be key in children's decisions to try novel foods (Story, Neumark-Sztainer & French, 2002).

Healthy eating habits are essential for the normal growth and development of preschool children; also, they prevent nutrition related diseases later in life (Dietz, 1994). Early childhood is a critical time in eating behaviour development, as children's experiences during this period play a major role in shaping their lifelong eating behaviours and food preferences (Schwartz & Puhl, 2003). Examining the different food and nutrition experiences in kindergartens is important because children's food preference formation is linked with their familiarity with foods during early childhood – the more familiar the food, the more it is preferred (Aldridge, Dovey & Halford, 2009; Cooke, 2007; Skinner et al., 2002). Also, to increase children's familiarity with healthy foods is recommended by school-based nutrition education curricula (Wardle & Cooke, 2008).

2. The status and the goals of nutritional education

Nutrition can be defined as the ensemble of the physiological processes related to the exchange of substances and energy between the organism and environment. The health state of people is the product of their genetic inheritance, age, nutrition, lifestyle issues (such as physical activity and smoking), social environmental factors (such as living conditions, hygiene), but also stress, working conditions and family support.

Nutrition education is defined as any combination of educational strategies, accompanied by environmental supports, designed to facilitate the voluntary adoption of food choices, and nutrition-related behaviors conducive to health and well-being. It is delivered through multiple venues and involves activities at the individual, institutional, community, and policy levels (Contento, 2011). The formal field of nutrition education can be considered to have had its start when governments began publishing dietary guidance recommendations for the public based on the findings of nutrition science and taking into account cultural eating patterns. In the United States, the first food guide was

published by the U.S. Department of Agriculture in 1917 as a teaching tool with the goal of improving the health of the nation's people.

A number of reviews have been conducted to examine the question of whether nutrition education is effective, based on the preceding view of nutrition education. One such review used the statistical method of meta-analysis to examine 303 studies conducted over a 70-year period from 1910 to 1984 that included a total of 4,108 separate findings (Johnson & Johnson, 1985). The meta-analysis found that, overall, nutrition education increased knowledge by 33%, attitudes by 14%, and behaviors by 19%.

Nutritional education combines the theoretical and practical perspective, and it is aiming to inform and train people on choosing, dosing and preparing food, identifying authentic food and nutrition value. Cucoş (2002) states the following objectives of nutritional education: creating a culinary culture and healthy culinary practices, safeguarding the specificity in the culinary arts, cultivating respect for other culinary habits or practices and experimenting new conducts in this direction. Macavei (2001) believes that the objectives of nutritional behavior aim at acquiring knowledge on nutritional functions, the need for proper nutrition, nutritional factors and nutritional value of foods, food errors, basic knowledge of the culinary art; rational, balanced, complete food habits, food hygiene, food preparation and storage, eliminating toxins from the body (food pauses, fasting), satisfying culturally food needs and civilized conducts by culinary ceremonies (organizing dinners).

School-based nutrition education interventions include educational efforts and programming designed to target healthy eating behavior change in children's diets. These strategies involve school-wide environrnental change efforts, family-focused interventions, mass-media messages, community-based interventions, and government funded nutrition programs. Lytle and Achterberg (1995) identified six elements of successful nutrition education programming: (1) programs are behaviorally based and theory driven; (2) family involvement is incorporated into programs for elementary-aged children; (3) programs for middle school to senior high students include self-assessment of eating patterns; (4) behavior programs include intervening in the school environment; (5) behavior change programs include intervening in the larger community; and (6) programs include intensive instruction time. It was also mentioned that such school-based interventions are not the only food and nutrition experiences children encounter throughout the school day. In kindergarten classes, food is not simply provided at meals or only discussed during healthy eating interventions; it is often embedded in the curriculum and a focal point of various celebrations (Isoldi, Dalton, Rodriguez & Nestle, 2012; Johansson et al., 2009; Mikkelsen, 2011). These experiences are important because they can influence children's development of food preferences through food familiarity (Cooke, 2007).

3. Preschool children's understanding of food and nutrition

Research suggests that 2-year-old children are only able to name or identify objects, but that 3- to 5-year-olds can begin to place them into categories such as size, color, and shape. In the food area, preschool children can

easily identify foods and they classify foods based on observable qualities such as shape, color and on function rather than by nutrient content (Michela & Contento, 1984; Matheson, Spranger & Saxe 2002). So research suggests that children have difficulty understanding food classification systems. Anliker et al. (1990) demonstrated that most children could classify foods into the fruit or cereal and grains groups, but not into the vegetable or milk groups. Michela & Contento (1994) revealed that 5- to 6 year-old children did not spontaneously classify foods into traditional food groups; they used two criteria, sweet taste and solid or liquid state, to classify foods. Singleton, Achterberg & Shannon (1992), which examined children's understanding of health, found that 5-year-old children incorporated the concepts of food and nutrition into their definitions of health and categorized foods as healthy or unhealthy. So they begin to be able to relate foods to health, but they do not really know what happens to food in the body to bring about its effects on health (Contento, 1981).

Birch (1998) mentioned that children eat what they like and leave the rest, and they are blissfully ignorant of considerations that influence many adult eaters: the fat and cholesterol content, nutrient density of a food, and its cost and ease of preparation. Gibson & Wardle (2003) found that children tend to prefer sweet foods and high-fat foods, while vegetables and foods of lower energy density are less preferred.

Preschool children playing in toy kitchens demonstrated that they already had some knowledge of meal planning, food preparation, table preparation, food serving, eating, and cleaning up; also, there were observed gender differences in children's play behaviors that were, for the most part, in accordance with gender stereotypes (Matheson et al., 2002). Johnson and Birch (1994) also reported gender differences in preschool children's food consumption. Specifically, girls were less able to regulate their energy intake than were boys, and the parents of heavier girls were more controlling compared with the parents of normal-weight boys or girls. But in most nutrition education research and practice, gender differences in food behaviors or nutrition attitudes are not addressed until adolescence and adulthood.

4. The present-day preschool curriculum in Romania and its guidelines regarding nutritional education

The curricular framework for preschool children is detailed in the Educational Ministry Order no. 5233 issued on 1st of September 2008, and it came into force at the beginning of the school year 2008-2009. Therefore, the education of the Romanian preschool children has been oriented since 2008 by the 146 pages document called "Curriculum for the early education of children aged 3 to 6 / 7 years old" (henceforth, Romanian Preschool Curriculum). The Romanian Preschool Curriculum has been seen as "an ideatic-normative construct, consistent with similar educational frameworks from other countries in the world (England, France, Italy, Germany and so on), with a new, original structure that is extremely complex in comparison with previous similar documents targeting preschool education in Romania. It suggests a radical change of optics on the contents offered to preschool children by explicitly assuming a certain curricular perspective in education. Thinking along D'Hainaut's idea, the authors of the quoted material highlight the fact that *the core point of the curriculum must be the pupil, not the subject matter… and*

that when one talks about the contents of the curriculum, one must understand that it is not a matter of statements of subject matters to study, but of goals expressed in terms of a pupil's competences, ways of acting or of knowing, in general (Stan, 2014).

The introductory part of the Romanian Preschool Curriculum, which is called in the analysed document "The context which has favoured the introduction of the concept of early education in Romania and, implicitly, curriculum revision" stipulates that "the kindergarten, as a formal education service, provides an environment that guarantees the children's health and safety... involving both the family and the community in the learning process". Distinctive notes of early education are also mentioned; one of these underlines that at young ages, it is fundamental to have a multidisciplinary approach (caring, nutrition and education at the same time) - Romanian Preschool Curriculum, 2008, p. 4.

One of the documents that the Romanian Preschool Curriculum makes mention of is the Declaration adopted by the United Nations General Assembly, at its XXVI Special Session on the 10th of May 2002, which contains the guiding principles of the global movement for building a world fit for children. Among these principles, the following stands out regarding our research: "a better world for children is a world where all children will be able to enjoy the childhood years - a time of play and learning, when children are loved, respected and pampered, when their rights are promoted and protected, without any discrimination, when the safety and welfare are regarded as primary and when they can develop in health, peace and dignity" (Romanian Preschool Curriculum, 2008, p. 5).

"New accents present in the revised curriculum" is a part of the Romanian Preschool Curriculum where it is mentioned that the curriculum for preschool education promotes the concept of global development of the child, which is believed to be central in early childhood (Romanian Preschool Curriculum, 2008, p. 13-14). The global development perspective stresses the importance of the child development areas, considering that, in today's society, preparing children for school and life must take into account not only academic skills but equally, skills and attitudes related to socio-emotional development, cognitive development and physical development (motor skills, health, healthy eating, etc.).

Another document that the Romanian Preschool Curriculum makes mention of is "Fundamental benchmarks regarding learning and the early development of the child between birth and 7 years old", which is an educational policy document drafted in 2007 with the support of UNICEF in Romania, through a consultative process involving experts in education and child development. The above-mentioned document presents a series of child development fields; the one related to nutritional education is called "Physical development, health and personal hygiene", which includes a wide range of skills and abilities (from large movements such as jumping, running, to achieving fine movements like those needed in drawing or modeling), but also coordination, sensory development, along with knowledge and practices relating to care and personal hygiene, nutrition, health maintenance practices and personal security. The dimensions of the field are: physical development (developing motor skills and sensorimotor

development) and health and personal hygiene (promoting health and nutrition, care and personal hygiene, as well as personal security).

The annual study program in kindergartens is organized around six main themes: "Who am I/are we?", "When, how and why is happening?", "How was it, has been and will be here on Earth?", "How we plan/ organize an activity?", "With what and how we express what we feel?" and "What and how I want to be?". According to the Romanian Preschool Curriculum description of these main themes, only one theme seems to mention health and nutritional content: "Who am I/are we?" – "an exploration of the human nature, of our beliefs and values, of the human body, of the own health and the health of our families, friends, communities and cultures with whom we come in contact (physical, material, spiritual, cultural), of our rights and responsibilities, of what it means to be human" (Romanian Preschool Curriculum, 2008, p. 24).

The "Methodology to apply the curriculum for children aged 3 to 6/ 7 years old" part of the Romanian Preschool Curriculum (2008, p. 22) points out a health and physical education setting that must be followed by preschool teachers "the daily schedule is mandatory to have at least one activity or a motion sequence (text and motion game play, physical education activity, sports competitions or tracks, walking etc.). At the same time, the teacher will take into account children's exposure to environmental factors, as a condition for maintaining the health and take the children outdoors at least once a day, regardless of season".

5. Educational aims regarding nutritional education in the Romanian Preschool Curriculum

The Romanian Preschool Curriculum stipulates the following main fields for preschool activities with children: the field "Language and communication", the field "Science" (including mathematics and knowledge about the environment), the field "Aesthetic and creative" (including arts and music), the field "Man and society" (including "education for society" and crafts) and the field "Psychomotor" (physical education). For each of these main fields, there are presented framework objectives and reference objectives.

No framework objective mentions nutritional education; this is explained by the fact that the framework objectives enunciate very general aims. As for the reference objectives for each educational field, we found only one objective which stipulates content regarding nutritional education; it is an objective of the field "Man and society" – the child should "know and follow the rules that are necessary for social life integration, as well as personal safety rules (e.g. the importance of healthy food for the human body; activities and game rules, in order to avoid dangerous situations; minimum nature's protection rules and the danger of breaking these rules; rules regarging the protection of his own life and other's lives)" - Romanian Preschool Curriculum, 2008, p. 32.

Since we found only one reference objective regarding nutritional education, we were also interested to identify reference objectives regarding health education. Three such reference objectives were found in the Romanian Preschool Curriculum: the child should "acquire proper hygienic behaviors and attitudes towards themselves and towards other beings and objects" (the field "Man and society"); the child should "apply specific rules

of conduct in order to ensure the health and protection of human and nature" (the field "Science"); also, the child should "know and apply the hygiene rules of physical effort" (the field "Psychomotor).

6. Recommended nutritional education contents at preschool level

Specific contents for nutritional education include the human body (anatomy), the importance of healthy food for the human body, differentiation between healthy and unhealthy habits (e.g. excessive behaviours that can affect the health - alcohol, tobacco, coffee consumption), the value of food according to its ingredients for healthy life (e.g. fruits and vegetables and vitamins) and the family/the child in various aspects (e.g. at meals) and behaviours regarding social life (e.g. arranging a table, serving a meal, washing fruits and vegetables, engaging in preparing a salad or pastry products).

The Romanian Preschool Curriculum also presents some suggestions of individual themes or project themes: "Healthy and happy", "The five senses", "At the market", "At the bread factory", "From the field, on our table" and "Food for everyone on Earth", themes that put together health education and nutritional education.

As for teaching strategies, the Romanian Preschool Curriculum mentions that the "present-day tendencies in pedagogy" are projects method, incorporated (integrated) activities and interactive group activities. Nutritional education is infused into the Romanian Preschool Curriculum as integrated into larger curricular approaches in order to promote interdisciplinary connections. Also, the Romanian Preschool Curriculum gives a lot of freedom to preschool teachers regarding the daily activity planning.

7. Conclusions

Schools represent a popular and useful setting for intervention because schools offer continuous, intensive contact with children during their early years (Anzman, Rollins & Birch, 2010; Katz, 2009). Early childhood is a critical time in eating behaviour development, as children's experiences during this period play a major role in shaping their lifelong eating behaviours and food preferences (Schwartz & Puhl, 2003).

The Romanian Preschool Curriculum recognizes the value of nutritional education and it stipulates that in early childhood education settings, it is fundamental to have a multidisciplinary approach (caring, nutrition and education at the same time). The nutritional education contents from the Romanian Preschool Curriculum focus both on children's scientific knowledge and behaviours. But nutritional education does not appear as a discipline or school-subject; it is integrated in an interdisciplinary manner into more fields of study ("Man and society" and "Science"). Also, nutritional education is put together with health education, and only one reference objective from the Romanian Preschool Curriculum stipulates content regarding nutritional education. We feel that nutritional education should have more clear lines and structure in the present-day Romanian preschool curriculum and that a revision of the curriculum is required.

Future research should be focused on a comparative analysis regarding nutritional education in the Romanian preschool curriculum and other European countries preschool curricula.

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