



Infant feeding: a reflection regarding the nursing curricula in Mexico City

Alimentación infantil: una reflexión en torno a los programas de estudio de enfermería en la Ciudad de México

Salas Valenzuela, Monserrat¹; Torre Medina-Mora, Pilar²; Meza Segura, Citlal³

¹Bachelor's Degree in Social Anthropology. PhD in Social Sciences. Researcher, Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán, Mexico. monsesalas@gmail.com

²Bachelor's Degree in Nutrition. Master's Degree in Health Sciences. Professor-Researcher, Universidad Autónoma Metropolitana-Xochimilco, Mexico. ptorre@correo.xoc.uam.mx

³Bachelor's Degree in Human Nutrition. Research Assistant, Universidad Autónoma Metropolitana-Xochimilco, Mexico. citlalm@gmail.com

ABSTRACT Given the key position of the nursing profession in primary health care, in this article we examine the nursing degree curricula in public institutions in Mexico City to establish whether these programs of study include the topics necessary to implement the current recommendations regarding infant feeding. We perform a documentary analysis that compares the nursing curricula to the two official regulations existing on the subject. In a total of eleven locations, nine public institutions offer undergraduate degrees in nursing. There are seven programs of study in existence, with different structures, course names, and thematic contents among them and all with insufficient and outdated bibliography. We recommend that the programs be made more equivalent, that the bibliography be updated, and that the relevant official standards and international literature be included, so as to better meet the challenges of modernity and globalization in the subject of infant feeding.

KEY WORDS Nursing; Programs of Study; Infant; Feeding; Technical Standards; Mexico.

RESUMEN Dada la posición clave de la enfermería en la atención primaria de la salud, en este trabajo se examinan los programas de estudio de la Licenciatura en Enfermería de instituciones educativas públicas en la Ciudad de México, para establecer si cuentan con los contenidos para poner en práctica las recomendaciones actuales sobre alimentación infantil. Se presenta un análisis documental que contrasta los programas de estudio con las dos normas oficiales referidas al tema. En un total de once sedes, nueve instituciones públicas ofrecen la Licenciatura en Enfermería, mediante siete programas de estudio que difieren en los mapas curriculares, denominaciones y contenidos temáticos, con bibliografía insuficiente y desactualizada. Se recomienda hacer equivalentes los programas, actualizar la bibliografía e incluir las normas oficiales pertinentes y la literatura internacional, para enfrentar los desafíos de la modernidad y la globalización en la temática alimentaria de la población infantil.

PALABRAS CLAVES Enfermería; Programas de Estudio; Lactante; Alimentación; Normas Técnicas; México.

INTRODUCTION

Health care systems currently face the global challenges of social inequality, constant demographic and epidemiological change, and technological development as well as the specificity of local needs. Along with the updating of public policies and the budget allocations aimed at dealing with such challenges, human resources are vital in providing good quality health care services. The nursing staff, which make up around half of the health team staff (1 p.157), play an essential role in the primary health care of the maternal-child population group (a), since during prenatal care appointments and the monitoring of child growth and development, the nursing staff carry out preventive actions and the diagnostic basis of many clinical interventions.

Feeding in general and infant feeding in particular – areas under the purview nursing – are examples of the biopsychosocial character of health-disease-care-prevention process (3), since the development of feeding practices is closely related to economic, working and subjective conditions of families within a specific cultural and historical framework. During the first 24 months of age, infants go from a primary source of nutrition, breast milk or a commercialized breast milk substitute, to a mixed diet typical of the family and cultural environment, mediated by the recommendations and influence of the medical discourse in health services.

This study resulted from an interdisciplinary research project carried out at the Universidad Autónoma Metropolitana that was guided by the emerging approach of sociocultural epidemiology (4,5); the study included, among other objectives, the critical review of the academic curricula of undergraduate degree programs in nursing, nutrition and medicine offered in Mexico City, to compare and contrast basic student training with the challenges posed by the current conditions of infant feeding in Mexico.

Although the academic curriculum does not constitute the practice itself, the curricula were analyzed because they establish the minimum knowledge base with which future professionals will confront their daily experience. Unlike a curricular assessment directed at accreditation, only

essential educational content related to infant feeding was examined. The professional *ethos* of nursing – particularly aimed at care of others (6) – is initially formed in the classrooms, where the disciplinary bases of professional identity are established, an identity that is reproduced and re-interpreted in the practice itself. Values and definitions of the nursing social group respond to the possibility of belonging to or being excluded from certain fields (7). Daily nursing practices create lasting systems of perception, thought, appreciation and action which Bourdieu calls *habitus* (8). Following this thought, Boltanski states that the construction of the somatic culture created the social need for the physician (9), and, it may be added, the need for nursing:

The *habitus* in action works, as Bourdieu affirms, as a product and as a social producer. Normativity enunciates the medical behaviors which must be observed and describes the adoption of a “medical ethics typical of the profession,” both learned and strengthened in the practice itself through observation and imitation of teachers. (10 p.262)

The critical review of nursing curricula is no novelty from the perspective of university accreditation; the nursing profession itself has been the most active sector in favor of professionalization, especially in situations in which nursing is considered a profession gaining the status of a scientific discipline (11). There are innumerable examples of reviews of and changes to academic curricula, for instance, in Spain, to make university and professional studies consistent in the entire European Union (12); in Latin America as a whole there is a movement that has been heterogeneous in its results, but that coincides in seeking the accreditation of nursing curricula (1,13-15).

Such reviews contemplate the comprehensive training contents of nursing; thus, these reviews are not designed to consider such specific topics as infant feeding. Although feeding methods have always been implemented in the home environment, today feeding itself has been defined as a medical issue (16-18) transferring its normativity to the environment of health institutions, where nursing plays an active role. Therefore, in this study, a documentary analysis comparing the

academic curricula with regulatory documents was carried out, so as to reflect on the new challenges posed by the conditions of infant feeding in Mexico.

Nursing in Mexico

Since the establishment of the most elementary social organization, human groups have performed practices and elaborated representations in order to diagnose, explain, treat, cure or prevent conditions affecting their health (19) by means of specific groups of healers as well as diverse systems of health care and self-care, which in earlier times carried out both the diagnosis and general care of people in need of cure. With the development of the modern medical profession, these tasks were irretrievably separated: diagnosis and treatment became the exclusive domain of physicians, while care was left to nurses, integrated into the practice of physicians and under their control (20).

In Mexico, the forerunners of nursing were midwives, recognized during the Pre-Hispanic period for their skills in treating mothers and their children during pregnancy, delivery and the postpartum period. During the colonial period, the Royal Protomedicate Court [*Real Tribunal del Protomedicato*] was created – a medical institution of the Spanish Crown in charge of regulating, assessing and monitoring the practice of medicine, surgery, delivery and phlebotomy (21) in the colonies. However, this institution only granted two licenses to practice midwifery: one in 1816 and other in 1818 (22). After the declaration of Mexican Independence, the Medical School [*Facultad Médica*] was created in 1831; two years later, the Medical Sciences Establishment [*Establecimiento de Ciencias Médicas*] was founded, granting the degree titles of surgeon, pharmacist, dentist and midwife. The midwifery degree was the shortest specialty, studied only by women and granted social recognition, but with unfavorable conditions as compared to medicine (23).

Modern nursing developed in Mexico at the end of the nineteenth century in four federal entities: San Luis Potosí, Oaxaca, State of Mexico and Chihuahua, where, with a strong military and religious legacy, nurses were trained with an

empirical-theoretical basis (24). It was not for another half a century that the emerging nursing field was removed from the sphere of religious charity, when president Juárez decreed the secularization of all hospitals and charitable organizations. It was in 1907 that the first secular school of nursing was established — influenced by F. Nightingale's ideas of discipline and hierarchy — at the General Hospital of Mexico City, which was recognized by the General Office of Public Beneficence [*Dirección General de Beneficencia Pública*], whose graduates were known as “degree-holding nurses.” In 1911, this institution was moved to the School of Medicine of the then recently created Universidad Nacional de México, as the National School of Nursing and Obstetrics (ENEO) [*Escuela Nacional de Enfermería y Obstetricia*] linking nursery and midwifery (b), and sanitizing the notion of midwifery and puericulture in favor of obstetrics, a more medical training.

In 1943, the Mexican Social Security Institute (IMSS) [*Instituto Mexicano del Seguro Social*] was established. This was the most important institution in social security and health care in Mexico, within the framework of the consolidation of the post-revolutionary national State, which intervened in the economy and modernized industry, subordinated agriculture to industry and expanded the tertiary sector; in this context, the public health policies began to be designed. In 1945, the ENEO was separated from the School of Medicine and its graduates were awarded undergraduate degrees by the General Office of Professions [*Dirección General de Profesiones*] of the Secretariat of Public Education (SEP) [*Secretaría de Educación Pública*], with nursing became a federally regulated profession (26). Nurses in Mexico have therefore been trained in large hospital centers (under the premise of learning by doing), at institutions that form part of schools of medicine and at colleges and schools of nursing (24). Regardless of the institution from which they graduate, the work of nurses is closely related to the emerging needs of the health sector and, in some way, is a reflection of the complex structure of the current Mexican health care system (c).

The ENEO began to award undergraduate degrees two decades after it was separated from the School of Medicine, in 1967. The program began with little demand, a low incoming/outgoing student

ratio and very few degrees awarded. The first graduates worked as teachers, were appointed to head schools, and contributed to the education system, but were scarcely employed in health care services.

As a consequence of the assessment methods and accreditation processes concerning higher education institutions in Mexico, the focus at present is on updating the academic curricula, which has turned out to be a slow and laborious process. The *Criterios esenciales para evaluar planes y programas de estudio de las carreras de enfermería* [Essential criteria for assessing academic curricula and course syllabi of nursing degrees] were designed in order to unify all the academic curricula of the several institutions training nursing staff (28), but these criteria have not provided full results yet. The Official Mexican Norms (NOM) [*Normas Oficiales Mexicanas*] regulating the practice of nursing – recently enacted into law (d) – differentiate professional, technical and nonprofessional nursing staff; they identify as professional only those who have finished their higher education degree (general, specialist, master's or doctoral degree) in nursing at an academic institution recognized by the Mexican National Education System, and to whom a professional license has been granted by the relevant educational authorities (29). Although most nursing students graduate from public schools, there is a constant increase in the number of students graduating from private schools, accounting for up to a fifth of the students on a national scale (e). The enrollment in nursing programs has increased by 500 percent in only 15 years (31,32).

The System of Administrative Information on Nursing Human Resources (SIARHE) [*Sistema de Información Administrativa de Recursos Humanos de Enfermería*] from the Secretariat of Health, created in 1999, provides the most comprehensive and updated look at nursing in Mexico (f) (30): out of a total of almost 208,000 nurses, more than 34,000 work in Mexico City. Although this figure doubles the national average of 3.9, only 11% work in primary health care. This percentage is one of the lowest given that the medical institutions offering more complex services are concentrated in the capital city, whereas in Hidalgo and the State of Mexico, federal entities bordering Mexico City, the percentage of nurses in primary health care is higher: 45% and 40% respectively (30).

In Mexico City there is a larger number of universities and public and private institutions that offer tertiary and higher education at different schools or campuses. In addition, in the capital city the first public school was created and the foundations for the education model followed by most national institutions were established.

Nursing and infant feeding

The activities related to infant feeding carried out by the nursing staff in primary health care are governed by two regulations (g): Official Mexican Norm NOM-007-SSA-2-1993 on care of women during pregnancy, delivery and the postpartum period and care of newborns (33), hereinafter called NOM-007 (h); and the Official Mexican Norm NOM-031-SSA-2-1999 on child health care (34), hereinafter called NOM-031. Although such standards are the regulations that govern and define the provision of health care services, the content of such standards regarding infant feeding is reflected in the practices of the nursing staff at primary health care centers in southeastern Mexico City (35-37).

At consultations, nursing staff carry out anthropometric measurements of all infants, assist physicians and, at the physician's request, are also in charge of: i) teaching breastfeeding positions; ii) orally stating the benefits of breastfeeding; iii) explaining to mothers basic hygiene measures for washing breasts, hands, feeding bottles and other infant feeding tools; iv) recommending the intake of good quality water; and v) giving general advice about complementary feeding ("little tastes" of solid food). In the vaccination area, always a physically different place than the consultation rooms and a realm exclusive to nursing staff, mothers take their children to have vaccines administered, children are weighed and measured and immunization records are recorded and stamped (i), all activities carried out in compliance with the relevant standards. In these encounters between nursing staff and mothers, verbal comments are made about what children should be eating according to their age, comments based on what nurses learned during their professional training and in professional development courses but, especially, based on their own personal experiences.

NOM-031 was amended in 1999 to include – among other things – the recommendations given by the World Health Organization (WHO) and UNICEF for the feeding of children under 24 months of age: exclusive breastfeeding during the first 4-6 months, gradual introduction of foods other than breastmilk from that age onwards, and continued breastfeeding for up to at least two years (38). Although in 2001 the WHO/UNICEF recommendation was modified to advise exclusive breastfeeding up to 6 months of age (39), which was supported in subsequent meetings (40), this recommendation has not yet been included in NOM-031 (j). The WHO highlights the special role of health care services in promoting, protecting and supporting breastfeeding to “provide guidance on appropriate complementary feeding with emphasis on the use of suitable locally available foods which are prepared and fed safely,” (40 p.17) with flexible criteria and considering the socio-cultural aspects of home feeding practices. These criteria are not explicitly laid down in NOM-031, although some of these aspects can be seen in the discourse of the National Health Plan regarding the “improvement of feeding practices and strengthening of primary health care,” (41) and in some educational material produced by the Secretariat of Health.

METHODOLOGY

Considering the key position of the nursing profession in primary health care, in this study, the nursing degree curricula at public educational institutions in Mexico City were analyzed to establish whether these curricula include the appropriate contents necessary to implement the current recommendations regarding infant feeding. A documentary analysis was performed to compare two sets of texts: the current nursing curricula of all public institutions offering an undergraduate degree in nursing in Mexico City in 2010 and the Mexican Official Standards NOM-007 and NOM-031 regulating the provision of health care services and including specific aspects regarding infant feeding. As previously stated, the aim of the study is not to evaluate educational strategies or teacher performance, but to critically analyze

the information and knowledge that should be included in these academic curricula. For this documentary analysis, the universe of study consisted of the public institutions in Mexico City that offered Undergraduate Degrees in Nursing and/or in Nursing and Obstetrics in 2010. A record was developed including the mission, vision and objectives of the academic curricula, as well as the admission and graduation profiles. Nearly half of the information required was collected from the web pages of the institutions; the remaining information was obtained from informative interviews with competent authorities. Only one institution expressed in writing its refusal to provide academic curricula.

In this study, *infant population* refers to any child from their birth up to 24 months of age, and the first six months of age are highlighted due to the specific feeding recommendations for this period. The term *infant feeding* is not expressly used in any of the academic curricula analyzed; thus, the courses and contents that could in the authors' judgement include this topic were identified, such as breastfeeding, nutrition, weaning (progressive introduction of complementary food, cessation of breastfeeding), child under one, suckling infant, in reference to healthy infants. These courses were identified in order to record the terms for the topic of feeding used in the curriculum structure, the point or period in the program they are studied (k) and the bibliography included.

A comparative analysis was conducted among institutions and, finally, it was questioned whether the contents of the academic curricula foster the knowledge, skills and abilities necessary for graduates to comply with the regulations stipulated by the NOM regarding infant feeding.

RESULTS

In Mexico City in 2010, at eleven different campuses, nine public higher education institutions offered at least one academic curriculum for Undergraduate Degrees in Nursing: Universidad Nacional Autónoma de México (UNAM), Instituto Politécnico Nacional (IPN), Universidad Autónoma Metropolitana (UAM), Instituto Mexicano del Seguro Social (IMSS), four

Table 1. Public institutions that offer Undergraduate Degrees in Nursing, Mexico City, 2010.

University or Institution	School or campus	Year of Foundation	Year in which the first Undergraduate Degree in Nursing was awarded	Undergraduate Degree awarded in:	Length of program	Year the current academic curriculum was approved
Universidad Nacional Autónoma de México	Escuela Nacional de Enfermería y Obstetricia	1907	1967	Nursing and Obstetrics	8 semesters	2000
Universidad Autónoma Metropolitana	Unidad Xochimilco	1974	1974	Nursing	12 trimesters	1992
Instituto Politécnico Nacional	Centro Interdisciplinario de Ciencias de la Salud. Unidad Milpa Alta	1975	1975	Nursing	8 semesters	1998
Universidad Nacional Autónoma de México	Facultad de Estudios Superiores Zaragoza	1976	1998	Nursing	4 years	2003
Instituto Mexicano del Seguro Social	Escuela de Enfermería Centro Médico Nacional Siglo XXI*	1947	1998	Nursing and Obstetrics	4 years	2000
Instituto de Cardiología	Dr. Ignacio Chávez Escuela de Enfermería	1945	1998	Nursing and Obstetrics	8 semesters	2000
Hospital Juárez de México	Escuela de Enfermería de la Secretaría de Salud*	1960	1998	Nursing	8 semesters	2000
Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán	Escuela de Enfermería María Elena Maza Brito Zubirán	1958	2000	Nursing and Obstetrics	8 semesters	2000
Instituto Politécnico Nacional	Escuela Superior de Enfermería y Obstetricia**	1940	2003	Nursing	9 semestres	2003
Instituto Politécnico Nacional	Escuela Superior de Enfermería y Obstetricia**	2006	2006	Nursing and Obstetrics	8 semesters	2006
Secretaría de la Defensa Nacional	Escuela Militar de Enfermeras AC	1938	2007	Military Nursing	8 semesters	2007

Source: Own elaboration based on Meza (35) and the *Asociación Nacional de Universidades e Instituciones de Educación Superior* [National Association of Universities and Higher Education Institutions] (32).

*These schools have the same academic curriculum as the Escuela Nacional de Enfermería y Obstetricia (ENEO).

**The school awards two Undergraduate Degrees, one in Nursing and the other in Nursing and Obstetrics. Sharing the same basic academic curriculum, students study different subjects in the last third of training.

national health institutions and the Secretariat of National Defense (SEDENA) [*Secretaría de la Defensa Nacional*]. Table 1 shows information about each institution offering undergraduate degrees in nursing: name of the institution, year of foundation, year in which the first Undergraduate

Degree in Nursing was awarded, length of the degree program, and year in which the academic curriculum being used in 2010 was approved. In Mexico City, the Undergraduate Degree in Nursing is offered by means of seven different academic curricula: seven schools follow the

curriculum designed by Escuela Nacional de Enfermería y Obstetricia (ENEO) and students who graduate using this curriculum are professionally recognized by the UNAM; the UNAM itself has a different academic curriculum in the Facultad de Estudios Superiores (FES) Zaragoza. Instituto Politécnico Nacional (IPN) has three different academic curricula: one at Centro de Investigación en Ciencias de la Salud (CICS) and two at Escuela Superior de Enfermería y Obstetricia (ESEO). Universidad Autónoma Metropolitana (UAM) and Escuela Nacional de Enfermeras de la Secretaría de la Defensa Nacional (SEDENA) have their own academic curricula. As shown in Table 1, the ENEO is the oldest Mexican nursing school. It was not until six decades after its foundation that the school awarded an Undergraduate Degree in Nursing. The schools of the IMSS, one from the Instituto Nacional de Cardiología, one from the IPN and one from SEDENA were founded in the 1940s and began to award the degree by the late 1990s or by the early 2000s. The academic curricula of UAM and CICS have awarded an Undergraduate Degree in Nursing since their foundation in the mid-1970s. There are three different names for the awarded degree: Undergraduate Degree in Nursing, at five schools; Undergraduate Degree in Nursing and Obstetrics, at five other schools; and Undergraduate Degree in Army Nursing, at one school. The academic curricula are organized into trimesters, semesters or years over a total of 4 years; one of the curricula from ESEO has an additional semester. The current academic curriculum from the UAM is the oldest, which has not been modified since 1992, and SEDENA has the most recent academic curriculum, approved in 2007. Table 2 shows the terms used within the curricular structure, period in which the course is delivered and the bibliography included in the curriculum structure referring to the topic of infant feeding.

Designations: Schools belonging to the same institution, such as ENEO and FES from UNAM as well as CICS and ESEO from IPN, make use of different names for similar topics. The term infant feeding is not used in any curricula; this highlights the range of ways to mention the topics related to the feeding processes of the infant population: nutrition according to life stages; the first year of age; developmental stages; child

nursing; health-disease process of children, from newborn infants to school-age children; newborn infants, suckling infants, preschoolers, school-age children; feeding children in their first year of life (progressive introduction of complementary food, cessation of breastfeeding); feeding of newborn infants, suckling infants, preschoolers, school-age children; nutritional requirements; growth and development processes of infants and preschoolers; breastfeeding and artificial feeding, lactation, progressive introduction of complementary food and cessation of breastfeeding.

Period of study: In the curricula, the contents about infant feeding are mainly included around the midpoint of academic training; in only one curriculum, this content is included in the seventh semester.

Bibliography: Most references included in the curricula are textbooks. For example, in the third semester of ENEO curriculum, 25 books are recommended, of which 17 may include aspects of feeding topics, without indicating specific chapters, sections or pages. In the SEDENA curriculum, the latest publication date is 2006, whereas, in the FES curriculum, the latest publication date is 1993.

DISCUSSION

After the Second World War, nursing went from being an occupation to being a profession (20), as occurred in Mexico when the ENEO was separated from the School of Medicine in 1945. In 1964, the UN recommended analyzing nursing training to change the common image of nurses as ladies in white into an image "portraying nurses as an essential and dynamic element of the health team" (42 p.59). In Mexico, a few decades later, the lack of uniform nursing curricula and vocational guidance, the defects in the selection process and the insufficient remuneration for nurses were acknowledged (43). These deficiencies persist and are common to the Ibero-American region.

There continues to be a lack of uniformity among the academic curricula today. Although in Mexico City seven public schools follow the ENEO curriculum, the other schools designed their own curriculum. Autonomous academic

Table 2. Designations, period when the course is delivered and bibliography about infant feeding included in the curricular structure of the Undergraduate Degree Programs in Nursing, Mexico City, 2010.

Academic institutions	Designation within the curricular structure	Period of Study	Bibliography
Escuela Nacional de Enfermería y Obstetricia (ENEO)	Field of study: Nursing and Health in Mexico. Course: Basic and Applied Nutrition. Unit III. Nutrition at the different life stages of human being. 3.1.1.3 First year of life.	Third semester	25 basic and complementary texts for the course Basic and Applied Nutrition. 17 texts may include the topic of infant feeding. Latest publication: 2001.
	Field of study: Health-disease process at the different developmental stages. Course: Child Nursing. Unit I. Nursing care during the health-disease process of children, from newborns infants to school-age children. 1.2.1.2. Well child check-ups. Unit II. Nursing care for assessing biological, psychological and social characteristics of newborn infants, suckling infants, preschoolers and school-age children. 2.2.2 Nutrition: infant feeding in the first year of life (progressive introduction of complementary food and cessation of breastfeeding).	Fourth semester	48 texts (mostly books) for the course Child Nursing. 26 texts may include the topic of infant feeding. Latest publication: 1998.
	Field of study: Health-disease process at the different developmental stages. Course: Health-Disease Process of Children. Unit II. Biological, psychological and social characteristics of newborn infants, suckling infants, preschoolers and school-age children. 2.3 Nutritional requirements.		29 basic and complementary books for the course Health-Disease Process of Children. 17 books may include the topic of infant feeding. Latest publication: 2001.
Universidad Autónoma Metropolitana (UAM)	Teaching-learning Unit: Growth and development process of infants and preschoolers. Unit IV. Breastfeeding and artificial feeding, progressive introduction of complementary food and cessation of breastfeeding.	Seventh semester	11 texts for this module. 2 texts may include the topic of infant feeding. Latest publication: 1991.
Centro Interdisciplinario de Ciencias de la Salud, Instituto Politécnico Nacional (IPN)	Field of study: Nutritional Requirements. Module: Public Health. Unit III. Health promotion according to age groups. 3 theory hours.	Third semester	86 books for this unit. 5 books may include the topic of infant feeding. Latest publication: 1995
Escuela Superior de Enfermería y Obstetricia, Instituto Politécnico Nacional (IPN)	Basic Scientific Training #14. Learning Unit: Nutrition and Diet therapy for maternal child self-care. Unit II. Nutrition as a universal requirement for the health of infants under a year of age. Field of study: Nutrition and Feeding of infants under a year of age, progressive introduction of complementary food and cessation of breastfeeding.	Fourth semester	9 texts (mostly books) for this unit. 7 texts may include the topic of infant feeding. Latest publication: 1998.
Facultad de Estudios Superiores (FES) Zaragoza	Module: Nursing during growth and development. Content: Medical Sciences. 3. Nutrition and nutritional requirements for children and teenagers. 3.1. Specific characteristics of diet and nutrition at each life stage.	Second academic year	34 texts (mostly books) for this module. 14 texts may include the topic of infant feeding. Latest publication: 1993
Escuela Militar de Enfermeras	Nutrition and Diet therapy. Thematic Content III. Normal Eating: Recommended diet. Diet during pregnancy and breastfeeding; Progressive introduction of complementary food.	Third semester	3 books for this semester. Latest publication: 2005
	Pediatric Nursing. Thematic Content V. Nutrition. a. Explain without error the correct technique to be used when breastfeeding. b. Artificial feeding (breast-milk substitutes). c. Progressive introduction of complementary food. Thematic Content VI. Feeding during early childhood. d. Progressive introduction of complementary food.	Seventh semester	5 books for this semester. Latest publication: 2006.

Source: Own elaboration based on the curricula of the academic institutions.

institutions are free to develop their own curricula, and their autonomy must be respected and assured; however, making the basic contents consistent remains an incomplete task, which limits the integration of work teams among colleagues with similar hierarchy and similar teaching-learning epistemological approaches.

Specifically on the topic of infant feeding in the curricula, it was observed that neither NOM-007 nor NOM-031 are included in the bibliography. These standards set forth regulations on care procedures for a specific population, yet learning about the main technical instruments regulating the provision of health care services is not considered in the academic curricula.

The compulsory and complementary bibliography included in the curricula essentially centers on books published decades ago. The most referenced book is *Alimentación Normal en Niños y Adolescentes* [Normal Feeding of Children and Adolescents], written by physician Ramos Galván and published in 1985; it is a classic book in Mexico, essential for those being trained to provide primary care services. However, this book was written when the baby food market represented 10% of what it is today; although the author supports breastfeeding, in some parts of his book he states that there is no difference between breastfeeding and formula feeding. It is not inappropriate to include this book in the curricula; what is disturbing is that other books are not included given that, in general, books become classic texts but take time to incorporate new scientific findings.

The curricula included no up-to-date bibliography about the physiology of breastfeeding, current charts for child growth assessment, or modern principles of counseling, consultancy and technical handling of problems such as breast engorgement, transient lactation crisis, or low milk supply, among others. The controversial issue of the different methods of introducing complementary food is not included, nor is there information about regulations on the use of commercialized formulas and packaged food, to mention some topics pertinent to current infant feeding practices. By analyzing only the curricula, it is not possible to know whether preparation of formula is studied in the module related to sick children, but in the module connected with healthy children, there is no mention of it at all.

The topic of infant feeding is touched mainly at the midpoint of training, a time that could be considered appropriate; however, in one curriculum, the topic is discussed at the end of the training. Such aspects may contribute to the lack of uniformity in professional training, as well as evidencing the overvaluing of clinical-hospital aspects over primary health care for populations and communities (13).

There is a lack of consensus on using the term *infant*; instead the used terms are suckling, newborn, young child, child, preschooler, child under five years of age, child under one year of age, without precisely defining the scope of age groups. Establishing as synonyms an age group and a certain feeding method – for example, when the term suckling [in Spanish *lactante*, which means both baby of breastfeeding age and baby who breastfeeds] is used without specifying the age of such an infant – shows the underlying assumption of a close connection between a feeding practice and an indefinite life stage; however, such a connection does not always exist. In addition, by centering on the child in all topics related to their feeding, knowledge about the mothers' situation precisely at the early time of life when mother and child are recommended to be closely bound is not taken into account.

The term *breastfeeding* is expressly used only in two curricula, despite being an object of study in nursing in its physiological, therapeutic and counseling aspects. It may be assumed that breastfeeding is included in the other curricula, but this cannot be affirmed since the topic is not explicitly mentioned. In one curriculum, the term *lactation* is used in practice.

The notion of *progressive introduction of complementary food* is used in six curricula, whereas *cessation of breastfeeding* is used in three of them; although these terms are expressly mentioned, it is not possible to know their actual content, considering the frequent confusion between the two as aspects of weaning, among both the health staff and general population, even more when it comes to children who have never been "breastfed."

The specific contents of the WHO's latest feeding recommendation – consisting of breastfeeding for children under 24 months of age and exclusive breastfeeding for infants under 6 months of age – is not included in the curricula (39). The

curricula make mention of the first year of life, early childhood, newborns, babies and infants (I); thus, the specific feeding recommendations are indistinct and confusing for the first 6 months of age, and especially from that age onwards.

Although the ENEO curriculum was designed after the FES curriculum (both curricula belong to the UNAM), the former makes reference to developmental stages, whereas the notion stipulated by the WHO since the 1980s is that of child growth and development, as recognized in NOM-031. This conceptualization is worrying since this curriculum is the one that trains the nursing staff in half of the academic institutions in Mexico City.

In the last two decades, explicit knowledge (46) of infant feeding and especially breastfeeding has been produced as never before. It is worrying that the curricula do not make use of this knowledge and that students holding a Undergraduate Degree in Nursing will face the wide range of existing feeding practices and related difficulties without up-to-date training and with limited skills with which to fulfill their professional responsibilities in primary health care.

The academic freedom existing at the public institutions in Mexico City favors the inclusion of complementary and updated bibliography. However, based on the contents included in the curricula, the aim of this study, it is not possible to affirm that this inclusion of bibliography occurs systematically. In addition, in the cases of multiple schools recognized by a single institution (for example, the ENEO-UNAM curriculum), standardized examinations on the compulsory contents of the curriculum are frequently designed, contents only just covered during the tightly-packed academic periods. Although these assessment mechanisms offer advantages and contribute to a consistent training, they limit teaching practices with respect to broadening, supplementing and updating the required bibliography.

None of the analyzed curricula contemplate intercultural aspects of nursing practice – as Leininger suggested doing decades ago (47) – so as to better understand the cultural dimension of health practice. The recommendation to direct the curricula towards current health needs and services in order to train professionals with critical and ethical thinking has been made for the all countries in the Latin America region (11). A

change in the course of basic training within a framework of complex social models, so as to train professionals capable of working in interdisciplinary teams that take into account social aspects (13), would modify the ethics of care, moving from a medicalized and biomedical concept to a more sociocultural and interdisciplinary concept. This shift would help in the de-pathologization of primary health care, as recommended by the latest international agreements signed by the Mexican government, particularly the Millennium Development Goals (45) – especially those goals referring to counseling and communication skills among health care providers, women and families. Such skills are focused on understanding feeding processes to be directly related to living conditions and the exercise of autonomy and individual rights, so as to contribute towards the making of voluntary, conscious and informed decisions regarding health (48,49).

Basic professional training does not itself define practice; it is daily experience that gives meaning to the nursing profession. In primary health care, the area of vaccination is entirely the domain of nursing, in the sense of Bourdieu's *habitus* (8), precisely where the topic of infant feeding is least discussed, and when it is addressed, recommendations are frequently based on nurses' common sense and their own life experiences. The lack of basic training, recognized by the nursing staff themselves, is usually counterbalanced institutionally by specific training courses delivered to the in-service staff, implying significant individual effort; in connection with *feeding*, training courses offered to nursing staff have been documented in Mexico and in other countries of the Ibero-American region (1,50).

Within this context, the nursing profession in Mexico seeks recognition of the professional status of the 124 undergraduate degree programs in nursing offered throughout the country, from which more than 3,000 students graduate annually (51). With respect to employment, the Department of Health established, in 1999, the distinction between nursing staff with technical training and nursing staff holding an undergraduate degree, assigning the General Nursing "A" and "B" positions to the former and the "C" and "D" positions to the latter. Although this recognition helps improve the efficiency of coursework and the earning of

degrees (51), it should be adjusted to the contents of the recently enacted NOM-019, since at present it is mainly the technical and auxiliary staff that work in direct contact with patients (52), as occurs in nearly the entire Latin American region (1). To date, there remain countless cases of inconsistency between academic training and designated job position, a situation moderated by years of nursing service, practical experience, the mix of administrative and clinical responsibilities, labor flexibilization and precarization, and the existence of union perks.

Five decades have passed since the first Undergraduate Degree in Nursing was awarded in Mexico, yet the country still lacks an educational model appropriate to the current situation of infant feeding, characterized by the lowest breastfeeding figures since the existence of epidemiological records in both urban and rural regions (2); in this way, "education [...] contributes weakly to the transformation of health care practices and services." (13 p.115, 53).

This deficiency is not exclusive to nursing training, but is true of all professions connected with primary health care, which do not offer relevant and effective educational models with which to respond to the changes resulting from inequality and globalization. This study analyzed only the public schools in Mexico City, thus an examination of the situation nationwide and taking into account other public and private schools is still pending; in addition, it would be interesting to carry out such a study in the Latin American region as a whole.

The challenges related to infant feeding and faced by academic nursing institutions in the entire region are strategic challenges in public health, so that in the future students might learn about breastfeeding in the light of new scientific discoveries and develop tools and skills to understand and respect the sociocultural aspects of home and community feeding practices. In this way, strategies for promoting appropriate infant feeding could be designed and health care programs, academic curricula and official standards could be more intertwined, especially considering the increasing evidence showing the close relationship between early feeding practices and health and development throughout the lifespan (54-60).

However, the situation of infant feeding in Mexico is not the sole responsibility of nursing staff nor of health care services; rather, the State provides the overall outline of health and social policies and, as a result, primary health care services have been minimized and health has been delegated to individual responsibility, with no interest taken in setting forth regulations on infant food marketing and advertising and regulations to secure gender equality and the right to health and nutrition at every stage of life.

ENDNOTES

a. In Mexico, the maternal-child population group consists of nearly 11 million children under five years of age, as well as 8.4 million women between 20 and 49 years of age and 751,000 adolescents between 12 and 19 years of age with a history of a live birth in the last five years (1).

b. In San Luis Potosí, for example, the undergraduate nursing programs were intermingled with

the midwifery undergraduate programs for more than four decades. The graduates could sit for an examination and be recognized as nurses or sit for two different examinations and be awarded a degree in Nursing-Midwifery; however, in 1972, the degree in Midwifery was discontinued and only the degree in Nursing was granted (25).

c. The health care system in Mexico consists of a disjointed interaction between a state system and a private system, with a multi-institutional

offering of services. The public sector contains the most important social security institutions which were created in the 1940s (*Instituto Mexicano del Seguro Social, Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado, Petróleos Mexicanos, Secretaría de la Defensa, Secretaría de Marina*, among others) and the institutions that provide care to those without social security (*Secretaría de Salud, Servicios Estatales de Salud, Seguro Popular de Salud*, among others), some of which were recently created. The private sector is made up of the services of doctors' offices and private clinics and hospitals, including non-biomedical services (27). Access to health care services differs among those who are wage-earners, those who are self-employed and those able to pay for health services. There is no connection between health care coverage and use of health services. Although certain groups have the possibility to access many institutions, they make use of the services that at a specific moment and given a certain condition they consider the most convenient for economic and cultural reasons.

d. Mexican Official Standard NOM-019-SSA3-2013 on nursing practice in the National Health System was enacted on September 2, 2013.

e. Nursing was originally an exclusively female profession; currently nearly 10% of registered nurses are male (30).

f. There is a difference between the information provided by the SIARHE and that of the System of Information on Equipment, Human Resources and Health Infrastructure [*Sistema de Información*

de Equipamiento, Recursos Humanos e Infraestructura para la Salud], both of which come from the Secretariat of Health and are frequently used. The data presented here is from the SIARHE.

g. The purpose of Official Mexican Norms issued by the Secretariat of Health is to regulate the provision of all health care services and compliance is mandatory for all public and private services in the country.

h. At the time this article was being written, the contents of this standard were being revised, through the open discussion of the Mexican Official Norm Bill PROY-NOM-007-SSA2-2010 on the health care of women during pregnancy, delivery and the postpartum period and care of newborns. Both the prevailing standard and the bill provide for promoting breastfeeding during prenatal care appointments.

i. In Mexico, every infant has a National Vaccination Record, in which the individual vaccination calendar by age is stipulated.

j. The only recent modification (2006) refers to the preparation of oral rehydration salts.

k. For this study, *period* refers to the relevant trimester, semester or year.

l. Despite the numerous recommendations regarding the use of inclusive, non-sexist language, in ten of the twelve curricula the Spanish term *niño* [male child] is used to refer to both genders (44,45).

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