ORIGINAL ARTICLE

Analysis of data on breastfeeding in Croatia from 2005 to 2016

Maja Miloš[1], Urelija Rodin[2,5], Duška Tješić-Drinković[3,4], Aida Mujkić[5]

[1]Zagreb City Office for Health, [2]Croatian Institute of Public Health, [3]School of Medicine University of Zagreb, [4]University Hospital Centre Zagreb; [5]Andrija Štampar School of Public Health, School of Medicine University of Zagreb, Croatia

ABSTRACT

Aim To analyse available breastfeeding data in Croatia and to describe the process of gathering, collecting, recording and reporting on them to the official institutions.

Methods Infant nutrition data collected at maternity wards and infant nutrition data from primary health care units during the period 2005 to 2016 have been used. Descriptive statistics was used to analyse the data and to show the trends in breastfeeding.

Results More than 85% of newborns were exclusively breastfed in the maternity wards. Data on breastfeeding from primary health care showed growth in exclusive breastfeeding up to 2011, followed by a fall in 2013. From 2012, paediatric teams had the obligation to join information system (CEZIH), but electronic forms did not contain infant nutrition information. Similarly in the E-Newborn project (E-novorođenče) the question on the feeding method in the application was not designated as mandatory.

Conclusion The routinely collected data on breastfeeding did not allow us to draw any conclusion regarding breastfeeding trends in Croatia. In order to improve the process of gathering, recording and reporting data on breastfeeding to the proper authorities, it would be necessary to clearly align definitions, employ a uniform methodology, and upgrade the computer applications in primary health-care. Only then may the reports required for compulsory health insurance be obtained via the CEZIH, as well as the public health reports necessary to monitor preventive work in care of children's health, and monitoring public health indicators.

Key words: data collection, feeding methods, infant nutrition, primary health care

Corresponding author:
Aida Mujkić
Andrija Štampar School of Public Health,
School of Medicine, University of Zagreb
Rockefellerova 4, 10000 Zagreb, Croatia
Phone: +385 1 4590 134;
Fax: +385 1 4684 441;
E-mail: aida.mujkic@snz.hr
Maja Miloš ORCID ID: orcid.org/0000-0002-3897-4527

Original submission:
15 March 2019;
Revised submission:
07 May 2019;
Accepted:
24 May 2019.
doi: 10.17392/1022-19

Med Glas (Zenica) 2019; 16(2): 195-203

INTRODUCTION

The promotion of and support for breastfeeding are some of the public health priorities of the Republic of Croatia, as reflected in a series of programs and rules, regulations and strategic plans aimed at the protection and promotion of breastfeeding (1–6), as well as various initiatives and activities by vocational associations and non-governmental organizations, and cooperation with international organizations such as the WHO and UNICEF. Over roughly the past twenty years, Croatia has recorded positive results (7,8) precisely due to its exhaustive and intense investment in the promotion of breastfeeding. Despite this, certain problems associated with the process of monitoring the status of breastfeeding have been identified. According to an IBFAN (International Baby Food Action Network) report from 2014 (9), the problem lies in the fact that in Croatia data on breastfeeding are not part of the national data collection survey, breastfeeding data are piecemeal collected partially by various non-governmental institutions and organizations, where there is no consensus on the definitions of breastfeeding. Thus, problems arise in comparison of the results, because the methods for monitoring breastfeeding are not uniform. As a result, released reports and data show considerable variations in breastfeeding rates. An additional problem is the inadequate evaluation and monitoring of indicators of the measures and programs implemented (10).

Although the IFBAN report showed that there were insufficient national data on breastfeeding which could be used to assess the situation, there are nonetheless sources of health statistics that could serve as a basis for monitoring changes in breastfeeding trends among newborns and infants. There are reports of live births from maternity wards and reports on the results of preventive general check-ups in primary health-care activities (family practice and primary health care for pre-school children (0-6 years) which are released annually in the Health Statistics Yearbook published by the Croatian Public Health Institute (11).

In the interest of complete and comparable breastfeeding data collection, the World Health Organization has recommended the following definitions of breastfeeding (12): exclusive breastfeeding – the infant has received breast milk (directly from the breast or expressed or from a wet nurse), allows the infant to receive oral rehydration salts (ORS), drops, syrups (vitamins, minerals, medicines) and does not allow the infant to receive anything else; predominant breastfeeding – the infant has received breast milk (directly from the breast or expressed or from a wet nurse) as a predominant source of nourishment, allows the infant to receive certain liquids (water and water-based drinks, fruit juice), ritual fluids and ORS, drops and syrups (vitamins, minerals, medicines) and does not allow the infant to receive anything else (in particular non-human milk, food-based fluids); complementary feeding – the infant has received breast milk (directly from the breast or expressed or from a wet nurse) and solid or semi-solid foods, allows the infant to receive anything else, e. g. any food or liquid including non-human milk and formula; breastfeeding – the infant has received breast milk (directly from the breast or expressed or from a wet nurse), allows the infant to receive anything else: any food or liquid including non-human milk and formula; bottle feeding – any liquid (including breast milk) or semi-solid food from a bottle with a nipple/teat, allows the infant to receive anything else, e. g. any food or liquid including non-human milk and formula.

In Croatia, the following definitions of infant nutrition are mostly used: breast milk nutrition, breastfeeding milk subtitutes, dual milk nutrition (breast milk and infant formula) and complementary feeding. Infant nutrition includes milk nutrition and complementary feeding, while we distinguish breast milk nutrition (natural nutrition) and nutrition with other milk than breast milk (artificial nutrition). Dual milk nutrition or mixed milk nutrition refers to infant nutrition with breast milk and artificial nutrition. Complementary feeding refers to any other foodstuff/aliment infants receive except breast milk (13). However, sometimes there is use of "breastfeeding plus complementary feeding", in terms of infant nutrition with breast milk and infant formula, although it actually means dual milk nutrition (breast milk and infant formula).

In the National Program for the Protection and Promotion of Breastfeeding from 2018 to 2020, which was adopted by the Government of the Republic of Croatia in August 2018, it was stated that breastfeeding promotion indicators should use indicators based on the WHO definition of breastfeeding. However, breastfeeding indicators according to the above definitions cannot be tracked through routine health statistics, as infant

nutrition data are not delivered in an electronic form via the Central Health Information System of the Republic of Croatia (CEZIH) or through the Hospital Information Systems (BIS). The accurate indicators that are required for evaluation of the National Program cannot be obtained from routine health statistics because there is no accurate age given at which data are obtained (breastfeeding for 3 months and breastfeeding for 6 months) but it is a case of an age range of 0-2 (0-89 days of life), 3-5 (90-179 days) and 6-11 months (180-364 days).

The National Program did not define the sources of information for evaluating these indicators. All national programs should incorporate the indicators from inputs through impact (15). The previous National Program for the Protection and Promotion of Breastfeeding from 2015-2016 concerning measures to promote breastfeeding carried out by various entities from health system and non-governmental organizations has no available evaluation reports.

The aim of the study was to analyse the available breastfeeding data in Croatia from routine public health reports during the period from 2005–2016 and to show the trends in breastfeeding, to describe the process of gathering, collecting, recording and reporting of breastfeeding data for public health statistics in Croatia, and to identify difficulties in the process of collection, recording and reporting on breastfeeding data in Croatia.

MATERIALS AND METHODS

Settings and study design

Annual routine public health reports from primary health care (PHC) services and maternity wards data from medical birth notifications in the period 2005 to 2016 were used for breastfeeding data analysis. According to the Annual Implementation Plan of the Croatian Statistical Activities, all health institutions (PHC and hospitals) are obliged to collect and deliver data about breastfeeding, in the frame of their health reports to the Croatian Institute of Public Health.

This study was performed in Zagreb, Croatia, from November 2017 until January 2019.

The Ethics Committee of the School of Medicine in Zagreb had approved this research.

Methods

From birth until discharge from the maternity ward, data on breastfeeding in Croatia were collected including data on nourishment based on previously specified categories according to the type of feeding (breastfeeding, breastfeeding + complementary feeding and feeding with infant formula) in the age categories 0-2 months, 3-5 months and 6-11 months. Data provided from preventive general check-ups of infants published in the Health Statistics Yearbook, which were recorded in the category "breastfeeding + complementary feeding" have been renamed for the purpose of this paper as "dual milk nutrition" for infants aged 0-2 months, considering the fact that infants in this life period should not receive any other nutrition except breast milk and/or breastfeeding milk substitute. Following the same pattern of data interpretation in the next age group, i.e. infants aged 3-5 months, we renamed the category "breastfeeding + complementary feeding" to "dual milk nutrition", assuming that at least at the beginning of that period newborns receive a combination of breast milk and infant formula.

In order to depict the breastfeeding trends in maternity hospitals based on birth reports, the percentage of breastfed newborns, based on nourishment type, compared to the total number of recorded live births was computed.

Data on breastfeeding from preventive general check-ups were absent in the annual health-statistics abstract for 2012, so they are not cited in the analysis. The reason for the absence of these data is the transfer of all primary health-care teams to the Central Health Information System of the Republic of Croatia (CEZIH) (*Centralni informacijski zdravstveni sustav*) from 2010 to 2012 (14), wherein the Information Technology (IT) solution did not allow the monitoring of public health indicators from preventive general check-ups, including data on the infant feeding methods. To obtain such data, the manually maintained aggregate reports on findings from completed preventive general check-ups still needed to be delivered, which was not done by 30% of the teams, and the data on findings from preventive general check-ups were not released for 2012. Furthermore, errors were made in recording data in 2011 in which, according to the data published in the health statistics abstract (16), the total data

on feeding methods in the 0-2 months infant age group were higher than the total number of completed preventive general check-ups in the infant group, because in some paediatric reports, the case-history data on feeding outside of preventive general check-ups were also counted.

Statistical analysis

To present the breastfeeding trends, the percentages of breastfeeding according to the data from preventive general check-ups of infants in different age categories, compared to the total number of completed examinations for each infant sub-group, were calculated. The breastfeeding data were not identical to the number of completed preventive general check-ups, because the case-history information on breastfeeding is not always recorded during each examination, so the quantity of breastfeeding data gathered is lower than the number of examinations performed.

RESULTS

According to the breastfeeding data from Croatian maternity hospitals in the 2005-2016 period, there was an observable gradual decline in the breastfeeding trend from 87% in 2005 to 78.8% in 2016, with a slight upturn in 2012 (86.7%), after which a decline followed once again. In this same period, the percentage of breastfeeding + infant formula simultaneously grew in inverse proportion, from 10.3% in 2005 to 16.1% in 2016. The share of newborns receiving artificial nourishment was recorded at the constant 2% throughout the entire period. The percentage of unreported data from 2005 to 2015 generally stood at 1% to 1.8%, but significant growth of 3.5% was recorded in 2016 (Figure 1).

Breastfeeding data from preventive general check-ups at the age of 0-2 months generally showed growth in the share of exclusive breastfeeding in the 2005-2011 period, after which a considerable decrease followed in 2013, when a high percentage of unreported data was noted as in 2015. According to the data from the preventive general check-ups in 2009, exclusive breastfeeding was recorded in over 60% of the findings. The percentages of complementary breastfeeding and artificial nourishment in the 0-2 month group saw a continual decline in the 12-year period under observation (Figure 2).

The breastfeeding data from preventive general check-ups of infants aged 3-5 months generally showed continual growth in the share of exclusive breastfeeding (with the exception of 2013 due to a lack of data). According to the data from preventive general check-ups, the highest percentage of breastfed infants was recorded in 2016, when it first exceeded 50%. Almost over the entire period under observation, a continual decline in the percentage of complementary breastfeeding was recorded, with a growth in 2014 to 22.3%. The share of artificial nourishment showed a decline throughout the entire period. The percentage of unreported data fluctuated during this period, peaking in 2013 and 2015 due to a lack of data, but decreasing in 2016 to 10.1%. The most common

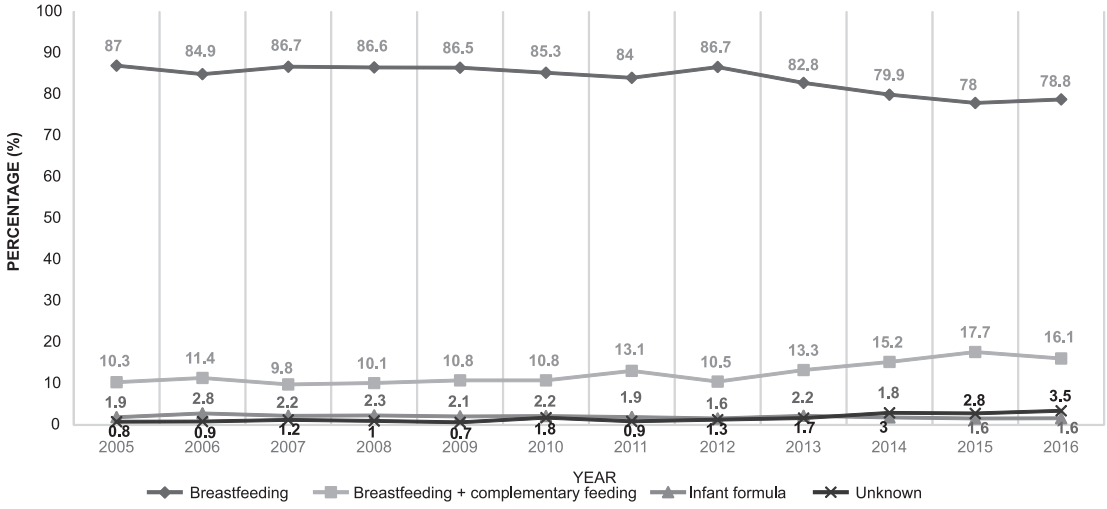

Figure 1. Trends in the percentage of breastfed newborns in Croatian maternity wards from 2005 to 2016

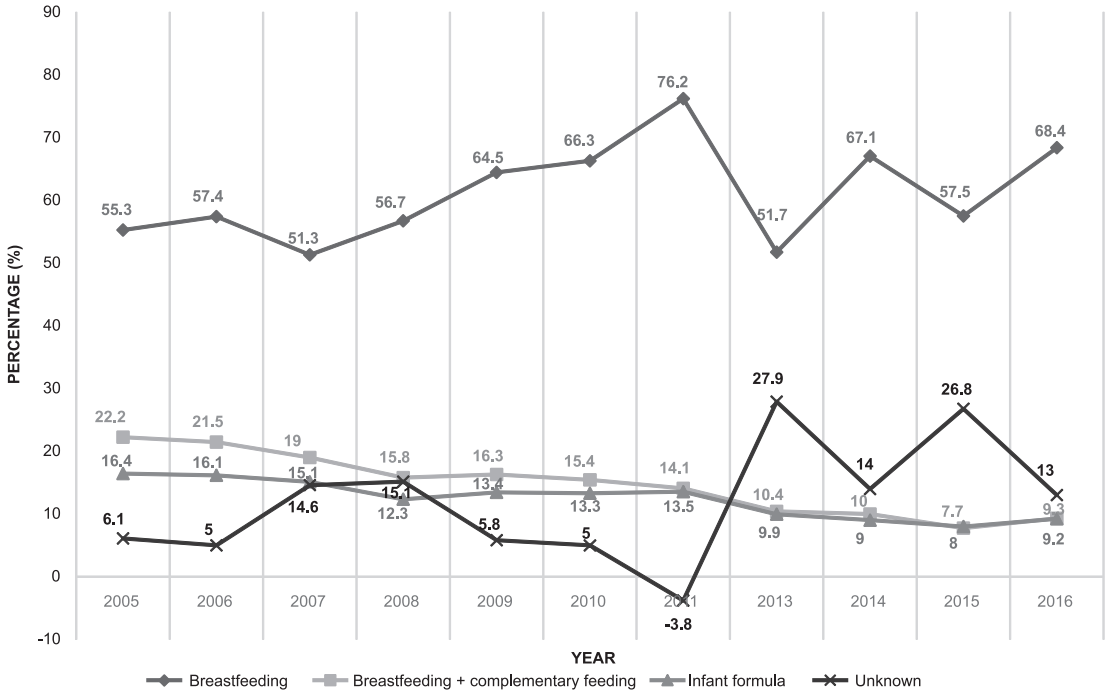

Figure 2. Trends in the percentage of breastfeeding according to data from preventive general check-ups of infants aged 0-2 months from 2005 to 2016

feeding method in infants aged 3-5 months remains exclusive breastfeeding (Figure 3).

Data on the percentage of breastfeeding from preventive general check-ups for infants aged 6-11 months show a percentage of exclusive breastfeeding ranging from 13.5%-18.5%, with the exception of 2015, in which 9.2% was recorded in preventive general check-ups. The percentage of breastfed infants who receive complementary nourishment rose to 54.9% in 2016, while the percentage of infants receiving artificial nourishment showed a decrease from 38.1% to 21.7%, with the exception of 2014 when we recorded an increase to 33.8%. As opposed to the continual gradual

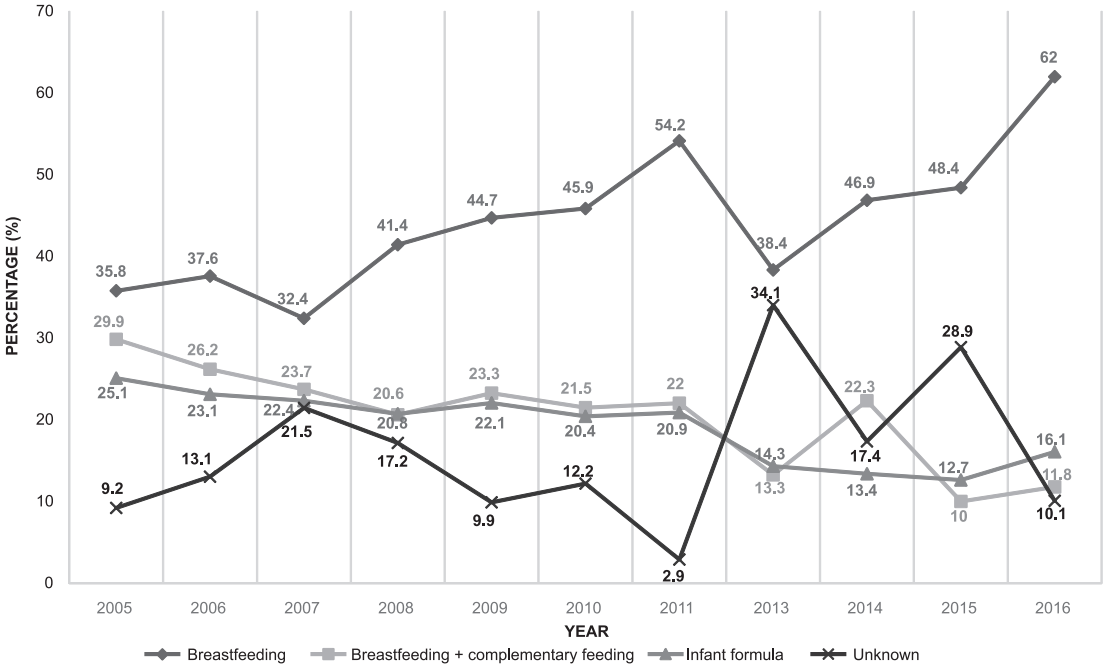

Figure 3. Trends in the percentage of breastfeeding according to data from preventive general check-ups for infants aged 3-5 months from 2005 to 2016

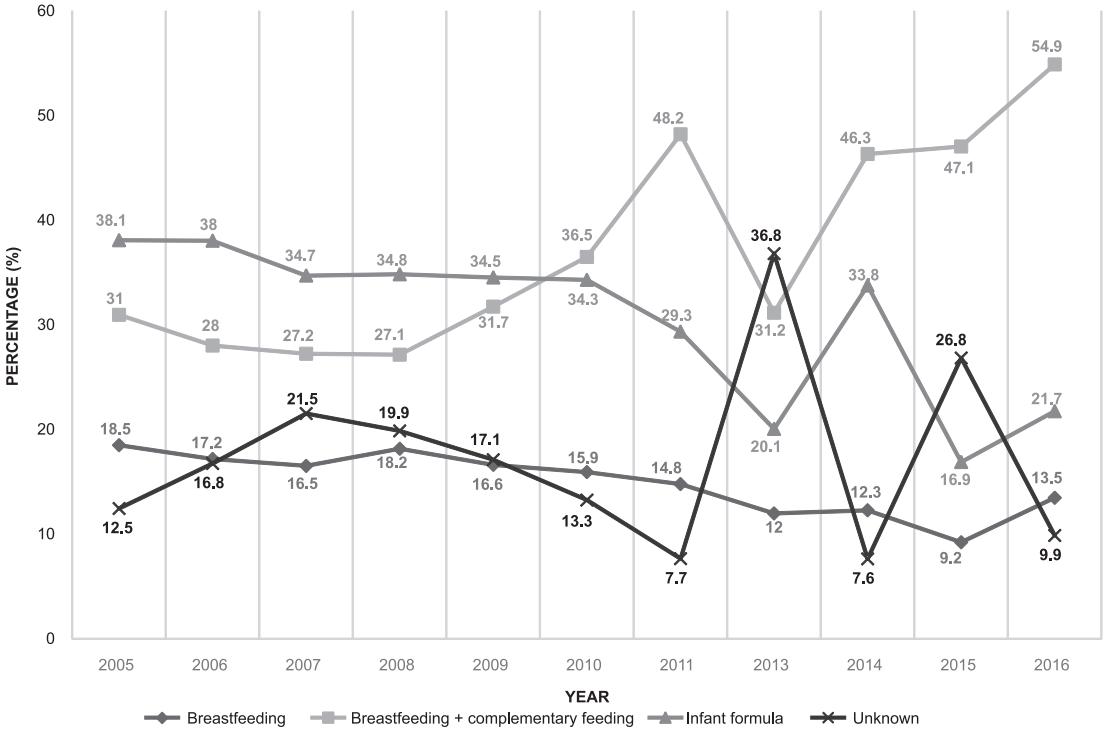

Figure 4. Trends in the percentage of breastfeeding according to data from preventive general check-ups of infants aged 6-11 months from 2005 to 2016

decline in the percentage of exclusively breastfed infants, the percentages from preventive general check-ups with data on complementary and artificial nourishment are variable over the 12-year period, and alongside the fact that at times there are no data, this indicates certain problems in the collection and classification of data (Figure 4).

DISCUSSION

The advantages of breastfeeding for the mother and child, and also for public health in general, have never been as well-known as they are today (17). Nevertheless, the practice of breastfeeding on the global level is still very modest with much room for improvement, particularly with regard to exclusive breastfeeding (9,18). The projections contained in the relevant literature indicate that the progress in the duration of exclusive breastfeeding will proceed slowly (19). Even though Croatia, according to a report by the World Health Organization, exhibits a high percentage of exclusive breastfeeding of infants in the first six months of their lives (52%) (9) compared to the European Union member states, it is necessary to take into account the methodological constraints and re-evaluate the reliability of data prior to drawing any conclusions. The Baby-Friendly Hospital Initiative that promotes and protects breastfeeding started in Croatia in 1991. For years now Croatia has been one of the leading countries regarding the percentage of maternity wards with this prestigious title, and this certainly contributes to a high rate of exclusively breastfed infants. Since 2016 all Croatian public hospitals and maternity facilities have been baby-friendly (20). But, according to the data presented, a decrease in the percentage of exclusive breastfeeding in maternity wards was apparent, accompanied by a simultaneous increase in unreported data, i.e. the number of empty fields on breastfeeding in live-birth reports was increasing. One reason could be that the focus on the implementation of 10 rules for breast-feeding promotion was not so strictly followed once the maternity ward was declared a baby-friendly institution, and the re-accreditation process happens every 5 years. The other reason for this might be attributed to the E-Newborn project (E-novorođenče) in some maternity wards in which, as in primary health-care, a mistaken interpretation aroused as to how to record these data. The question on the feeding method in the application was not designated as mandatory, so the e-form can be submitted without the feeding data, which led to an increase of unreported data.

By linking the dates of birth and the dates of preventive general check-ups in the CEZIH, accurate data on the age of breastfed children could be set aside. Data on feeding methods for children examined two or more times in the same period should be recorded from that systematic examination, in which the age of the child most closely corresponds to the age foreseen in the indicator for evaluation of the national Breastfeeding Protection and Promotion Program (21).

In the World Breastfeeding Trends Initiative (WBTi) report on Croatia for 2015, it was stressed that, according to the data from health statistics abstracts, not one child had been breastfed for more than a year. Based on everyday life it is known this is not true (22). Data on breastfeeding after the first year of life are absent from the Croatian Public Health Institute's health statistics abstracts because the instructions for recording data on infant feeding by primary health-care teams only require completion of data for the nursing period lasting from 0 to 364 days.

One of the important pitfalls is the lack of consensus regarding criteria that define selected infant feeding practices. This problem exists on the international level (23). In Croatia's everyday praxis, it is common to apply the definitions used by the American Academy of Pediatrics (APP) and the European Society for Pediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN) (13, 24-26). According to these documents, complementary feeding refers to solids and semisolids in the infant's nutrition, while WHO defines anything other than breast milk as a complementary food; thus, infants who receive infant formula are considered to have started complementary feeding, even if this is from birth.

It is recommended to evaluate feeding practices following the WHO and IBFAN criteria and definitions (9). However, there is no certainty that the data collected through the systematic examination report at ages 0-2, 3-5 and 6-11 months comply with the WHO feeding practices definitions. It is intended that the questions regarding feeding practices in these report forms refer only to the type of milk nutrition, but no clear instructions containing definitions of previously specified feeding categories were offered. Therefore, it is quite probable that some physicians filling the reports stick to their usual terminology regarding feeding practices (and not the WHO criteria), giving room for errors in the data collection. The older the infant's age, the risk of errors is more probable.

In 2016, Bagsci Bosi et al. stressed that it is necessary to exercise caution in the comparison of breastfeeding data among European Union Member States because of the absence of a standardized methodology for gathering data on breastfeeding, and inconsistent use of definitions of breastfeeding; they concluded that there was still no uniform strategy in Europe to monitor the situation and that it was necessary to align the data on and definitions of breastfeeding (8).

Similarly to Croatia, the monitoring of breastfeeding in the United States of America is conducted partially through various nationally funded investigations and there is no consolidated national system to monitor breastfeeding, which leads to the same problems as in Europe, such as differing definitions of breastfeeding and the presence of variations in breastfeeding indicators (23). In order to improve the system of monitoring breastfeeding, the Centres for Disease Control and Prevention (CDC) stress that it is essential to invest more funds in quality research, reinforce existing and develop future capacities for conducting research into breastfeeding and establish a national system to monitor breastfeeding (27). One of the examples of monitoring the status of breastfeeding is the gathering of data on breastfeeding within the framework of the National Immunization Survey conducted by the CDC's National Centre for Immunization and Respiratory Diseases (NCIRD/CDC) in cooperation with the National Centre for Health Statistics. Using a telephone survey of randomly selected households, data are gathered every year on the immunization of children, and in this framework, a question on breastfeeding was introduced in 2001, thus facilitating the monitoring of breastfeeding rates from a child's birth at the national level. The sampling consisted of respondents who have children aged 19 to 35 months, while the rate corresponding to the period from 2001 to 2015 varied from 59.2% to 76.1% (28). However, according to a research conducted by Flaherman et al. the National Immunization Survey is based on the mother's recollection of nursing, so there is a possibility of overestimation of the exclusive breastfeeding rate (29).

In order to improve the process of gathering, recording and reporting data on breastfeeding to the proper authorities in Croatia, it will be necessary to clearly align definitions, employ a uniform methodology, and upgrade the computer applications in primary health-care so that the reports required for compulsory health insurance may be obtained via the CEZIH, as well as the public health reports necessary to monitor preventive work in care of children's health, and monitoring public health indicators on their growth and development. Even though this paper deals with the problem of gathering data and monitoring the status of breastfeeding in Croatia, an overview of the relevant literature indicates that similar problems and shortcomings in monitoring the status of breastfeeding also appear at the level of the European Union and in the United States.

FUNDING

No specific funding received for this study

TRANSPARENCY DECLARATION

Competing interests: None to declare.

REFERENCES

1. Ministarstvo zdravlja Republike Hrvatske. Strateški plan razvoja javnog zdravstva 2013. - 2015. http://hzzzsr.hr/wp-content/uploads/2017/03/Strateski-plan-javnog-zdravstva-2013-2015.pdf (21 December 2017)
2. Vlada Republike Hrvatske. Program za zaštitu i promicanje dojenja. https://vlada.gov.hr/UserDocsImages/Sjednice/2015/227%20sjednica%20Vlade/227%20-%204.pdf (21 December 2017)
3. Ministarstvo zdravlja Republike Hrvatske. Pravilnik o izmjenama i dopuni Pravilnika o početnoj i prijelaznoj hrani za dojenčad. https://narodne-novine.nn.hr/clanci/sluzbeni/full/2014_02_29_502.html (21 December 2017).
4. Vlada Republike Hrvatske. Nacionalna strategija razvoja zdravstva 2012. - 2020. https://vlada.gov.hr/UserDocsImages//ZPPI/Strategije%20-%20OGP/zdravlje//Nacionalna%20strategija%20zdravstva%20-%20za%20web.pdf (21 December 2017)
5. Ministarstvo zdravlja i socijalne skrbi. Plan i program mjera zdravstvene zaštite iz obveznog zdravstvenog osiguranja. https://narodne-novine.nn.hr/clanci/sluzbeni/2002_03_30_647.html (21 December 2017)
6. UNICEF. Croatia country programme document 2012-2016. https://www.unicef.org/about/execboard/files/Croatia_final_approved_2012-2016_18_Oct_2011.pdf (21 December 2017)
7. Brajša-Žganec A, Brkljačić T, Franc R, Merkaš M, Radačić I, Sučić I, Šikić-Mićanović L. Analiza stanja prava djece u Hrvatskoj. Zagreb: Ured UNICEF-a za Hrvatsku, 2014. [Online]. https://www.unicef.hr/wp-content/uploads/2015/09/Sitan-Prava-djece-10_14-FIN-1.pdf (10 January 2018)
8. Bagci Bosi AT, Eriksen KG, Sobko T, Wijnhoven TM, Breda J. Breastfeeding practices and policies in WHO European Region Member States. Public Health Nutr 2016; 19:753–64.
9. International Baby Food Action Network. The Convention on the Rights of the Child. Session 67 / September 2014. Report on the situation of infant and young child feeding in Croatia. Zagreb: International Baby Food Action Network, 2014. http://ibfan.org/CRC/Croatia%20CRC67_IBFAN.pdf (15 February 2018).
10. Pećnik N. (Ed.). Kako roditelji i zajednice brinu o djeci najmlađe dobi u Hrvatskoj. UNICEF. https://www.unicef.hr/wp-content/uploads/2015/09/Kako_roditelji_i_zajednice_brinu_o_djeci_najmlade_dobi.pdf (15 February 2018)
11. Croatian Institute of Public Health. Croatian Health Statistics Yearbook 2015. https://www.hzjz.hr/en/news/croatian-health-statistics-yearbook-2015/ (15 November 2017)
12. WHO. Indicators for assessing infant and young child feeding practices: conclusions of a consensus meeting held 6–8 November 2007 in Washington D.C., USA. 2008. http://apps.who.int/iris/bitstream/handle/10665/43895/9789241596664_eng.pdf;jsessionid=CE4A02C5CAC5D1759B2979AF1CD14B30?sequence=1 (15 December 2017)
13. Tješić-Drinković D. Prehrana. In: Mardešić D, Barić I (Eds.). Pedijatrija. Zagreb: Školska knjiga, 2016; 232-304.
14. Ministarstvo zdravstva i socijalne skrbi. Pravilnik o načinu vođenja, čuvanja, prikupljanja i raspolaganja medicinskom dokumentacijom pacijenata u Centralnom informacijskom sustavu zdravstva Republike Hrvatske. https://narodne-novine.nn.hr/clanci/sluzbeni/2010_07_82_2344.html (15 January 2018)
15. WHO. Child health and development. 2014. http://www.emro.who.int/child-health/research-and-evaluation/indicators/All-Pages.html
16. Hrvatski zavod za javno zdravstvo. Zdravstveno-statistički ljetopis. https://www.hzjz.hr/periodicne-publikacije/hrvatski-zdravstveno-statisticki-ljetopis-za-2015-starija-izdanja/ (15 November 2017)
17. Victora CG, Bahl R, Barros AJD, Franca GVA, Horton S, Krasevec J, Murch S, Sankar MJ, Walker N, Rollins NC. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. Lancet 2016; 387:475–90.
18. Cai X, Wardlaw T, Brown DW. Global trends in exclusive breastfeeding. Int Breastfeed J 2012; 7:12.
19. Tuffrey V, Hall A. Methods of nutrition surveillance in low-income countries. Emerg Themes Epidemiol 2016; 13:4.
20. UNICEF. Sva su rodilišta u Hrvatskoj "Rodilišta prijatelji djece". https://www.unicef.hr/vijest/sva-su-rodilista-u-hrvatskoj-rodilista-prijatelji-djece/ (25 January 2019)
21. Rodin U, Draušnik Ž, Cerovečki I. Praćenje dojenja u Hrvatskoj iz zdravstveno-statističkih izvještaja. Paediatr Croat 2017; 61(Suppl 2):21-6.
22. World Breastfeeding Trends Initiative (WBTi). Assessment Report. http://www.worldbreastfeedingtrends.org/GenerateReports/report/WBTi-Croatia-2015.pdf (20 November 2017)

23. Chapman DJ, Pérez-Escamilla R. US National Breastfeeding Monitoring and Surveillance: current status and recommendations. J Hum Lact 2009; 25:139–50.
24. EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA). Scientific opinion on the appropriate age for introduction of complementary feeding of infants. EFSA J 2009; 7:1423.
25. Fewtrell M, Bronsky J, Campoy C, Domellöf M, Embleton N, Fidler Mis N, Hojsak I, Hulst JM, Indrio F, Lapillonne A, Molgaard C. Complementary feeding: a position paper by the European Society for Paediatric Gastroenterology, Hepatology, and Nutrition (ESPGHAN) Committee on Nutrition. JPGN 2017; 64:119–32.
26. Johnston M, Landers S, Noble L, Szucs K, Viehmann L. Position paper. Breastfeeding and the use of human milk. Section on breastfeeding. Pediatrics 2012; 129:e827–e841.
27. Centers for Disease Control and Prevention. How research and surveillance can support breastfeeding. https://www.cdc.gov/breastfeeding/promotion/research.htm (15 February 2018)
28. Centers for Disease Control and Prevention. Methods: breastfeeding rates. https://www.cdc.gov/breastfeeding/data/nis_data/methods.html (15 February 2018)
29. Flaherman VJ, Chien AT, McCulloch CE, Dudley RA. Breastfeeding rates differ significantly by method used: a cause for concern for public health measurement. Breastfeed Med 2011; 6:31–5.