

BREASTFEEDING INTENTION AND KNOWLEDGE IN SECONDARY-SCHOOL STUDENTS

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SUMMARY – Breast milk makes the world healthier and better. Deaths and suffering of thousands of children and mothers each year could be prevented through universal breastfeeding, along with enormous economic savings. The aim of this study was to examine the knowledge of breastfeeding and intention to breastfeed in third-year secondary school students from various high schools and to make a conclusion on the unique and structured education program on breastfeeding in secondary schools. A total of 252 third-year secondary school students from 4 high schools in Bjelovar, Kutina and Pakrac completed an online questionnaire on the knowledge and intention to breastfeed. The results were presented by descriptive statistics methods. Kruskal-Wallis test was conducted for intention scale and χ^2 -test for questions about knowledge. Logistic regression was used to predict probabilities of a response. The results showed the responses of students from individual schools to be statistically significantly different in some questions of knowledge and some items of intention of breastfeeding. Insufficient breastfeeding information in schools does not provide a basis to third-year secondary school students to make an informed decision about breastfeeding in adulthood. We propose development and use of a unique structured educational program on breastfeeding for secondary school students.

Key words: Milk, human; Schools; Breast feeding; Education; Croatia; Surveys and questionnaires

Introduction

Unquestionable advantages of breast milk over any other substitute food for infants^{1,2} come from several facts. Human milk and its key components, including proteins, change continuously over time and breast milk adapts to the child's developmental needs³. Biochemical features of breast milk are unique and specifically adapted to the needs of the child⁴. Mother's body produces antibodies transmitted to the child through breast milk⁵. Breastfed children are less prone to corpulence in adulthood, diabetes development, lipid metabolism disorder and higher blood pressure⁶. Breastfeeding develops a specific emotional and com-

municational mother-child relationship⁷, which also provides medical benefit for the mother⁸.

Despite the said advantages of breast milk and numerous promotional programs, breastfeeding data for the Republic of Croatia are not quite satisfactory⁹. The possible cause lies in the fact that the majority of continued and well-organized breastfeeding promotion activities are postadolescent-oriented and related to pregnancy or postpartum period^{10,11}. Activities oriented towards preadolescent and adolescent population are neglected¹², and this fact is important because the attitude towards breastfeeding is forming early in adolescence¹³⁻¹⁵. Attitudes are expressed through beliefs, emotions and intentions¹⁶, and particularly intentions represent a link between attitude and behavior¹⁷, i.e. strong behavioral predictor¹⁸.

The aim of this research was to analyze comparison of breastfeeding knowledge and intention among four groups of secondary school students from the Croatian

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cities of Bjelovar, Kutina and Pakrac, and to make a conclusion on the education program on breastfeeding in secondary schools.

Subjects and Methods

Subjects

The research consisted of a convenience sample of 252 third-year students from four secondary schools including Bjelovar Medical School (n=85), Bjelovar School of Economics (n=69), Pakrac Medical School (n=50) and Kutina School of Economics (n=48). Participants from different schools did not differ significantly according to gender, age, place of residence, parental education level, breastfeeding experience in childhood, or stated interest in breastfeeding education at school. The mean age of the students was 17.21 years; there were 61 (24.21%) male and 191 (75.79%) female students; 141 (55.95%) from the rural area and 111 (44.05%) from urban area; the mean school achievement in the previous school year was 3.9 (on 1-5 scale). Interest in breastfeeding education at school was expressed by 61.18% of Bjelovar Medical School, 60.87% of Bjelovar School of Economics, 54% of Pakrac Medical School and 64.58% of Kutina School of Economics students ($p>0.05$). As the most important source of information about breastfeeding, Bjelovar Medical School students stated school and their mothers (those two sources of information were rated as equally important); Bjelovar School of Economics rated school as second, those from Kutina School of Economics as the last (sixth), and students from Pakrac Medical School as the first source of information.

Methods

Data were collected during a three-month period, from March to May 2016. The questionnaire consisting of items regarding breastfeeding intention and knowledge was administered to third-grade students in four secondary schools from Bjelovar, Kutina and Pakrac. The investigators visited the schools and provided information on the aim of the study, type of survey application, anonymity/rights protection, and freedom of choice for participation in the research. After informing the students, the survey was administered to those that accepted to participate in the study, without

the presence of the authors. The survey was applied online on school computers, thus avoiding the possibility to reveal participant identity *via* home computer IP address. The children participating or not participating in the study were not stimulated in any way. Before survey application, participants were informed on the constructs of exclusive breastfeeding, milk formula, public breastfeeding, and emotional attachment. The survey applied in the study consisted of sociodemographic items, desire for learning about breastfeeding at school, ranking of information sources about breastfeeding, items about intention (Table 1) and knowledge about breastfeeding (Table 2). Items regarding intention to breastfeed were constructed following the model of IIFAS questionnaire¹⁹. For male participants, items of intentions were formed in terms of support to their partner.

Statistical analysis

The study examined the relation between dependent (breastfeeding intention and knowledge) and independent (participant school) variables. Since intention items I, III and VIII were formed in opposite direction compared to the rest of the items, they were re-coded. 'True' responses regarding knowledge items were assigned 1 point and 'False' responses 0 point. The possible range of points for intention items was 8 to 40 and for knowledge items 0 to 15. Results were sorted by schools and correlated.

Procedures regarding homogeneity and asymmetry of distribution, including graphic appearance, showed that survey results for each level of independent variable followed abnormal distribution. Therefore, further statistical procedures consisted of nonparametric methods. For testing differences in responses among four school students, we used Kruskal-Wallis test. Significance of differences at the school level was tested by χ^2 -test and Fisher exact test²⁰. On testing the significance of difference, we applied two-way test, with the difference lower than 5% considered statistically significant. In the prediction model with explanatory variables, the effect of changes in the independent variable 'School' on the dependent variable 'Intention to breastfeed' was examined by ordinal logistic regression. We applied binomial logistic regression to determine the impact of school as an independent variable on the chosen responses regarding knowledge items, i.e. probability that the participant would have chosen

one alternative over the other. Our tested hypothesis was that there were no significant differences among four school participants in the items regarding intentions and knowledge about breastfeeding.

Ethical considerations

On planning the study, Ethical Standards for Research with Children²¹ and International Code of Medical Ethics²² were respected and approval from the Ethics Boards of the schools was obtained prior to the study, meaning that the study was conducted in compliance with ethical principles and professional standards valid in our country. Before the students started to fill in the survey, they were informed about the possible risks, as well as about measures to safeguard the participant rights^{23,24}. Anonymity of student data was guaranteed.

Results

Table 1 shows the participant data from four schools regarding intention items, expressed as frequencies and percentages. The intention of breastfeeding in maternity hospital was most supported by students from Pakrac Medical School (96.00%) and most refused by students from Bjelovar Medical School (4.71%). The mother's and father's intention of making joint decisions about breastfeeding was most affirmed by students from Bjelovar School of Economics (56.52%) and most refused by students from Pakrac Medical School (40.00%). The intention of breastfeeding in public was most refused by students from Bjelovar School of Economics (62.32%). The results indicating the intention of greatest support to breastfeeding by concrete question in Table 1 are marked with double line. Shadowed results are those denoting the most expressed negative intention. Looking it as a whole, most indecisive subjects were in the group of students from Kutina School of Economics (21.27%).

Differences in responses among four school students were found in the items regarding intention to breastfeed at the child's age of one year ($\chi^2=8.356$; $p<0.05$) and intention to breastfeed in accordance with doctor recommendation regardless of close family member opinion ($\chi^2=8.633$; $p<0.05$). There were also near-significant statistical results on the items of intention to breastfeed in public ($p=0.062$), mutual deci-

Table 1. Responses to breastfeeding intention items

Intention	Bjelovar School for Nurses					Pakrac School for Nurses					Bjelovar School of Economics and Business Administration					Kutina School of Economics				
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
I	71.76	21.18	2.35	4.71	0.00	82.00	14.00	0.00	4.00	0.00	71.01	18.84	10.14	0.00	0.00	68.75	22.92	6.25	0.00	2.08
II	2.35	1.18	5.88	31.76	58.82	0.00	0.00	4.00	30.00	66.00	1.45	8.70	14.49	26.09	49.28	2.08	4.17	6.25	35.42	52.08
III	11.76	17.65	35.29	16.47	18.82	2.00	10.00	38.00	30.00	20.00	8.70	17.39	11.59	33.33	28.99	10.42	14.58	20.83	14.58	39.58
IV	15.29	17.65	27.06	24.71	15.29	14.00	26.00	20.00	24.00	16.00	7.25	11.59	24.64	34.78	21.74	10.42	12.50	29.17	27.08	20.83
V	2.35	1.18	32.94	27.06	36.47	6.00	2.00	24.00	46.00	22.00	2.90	7.25	28.99	34.78	26.09	2.08	4.17	37.50	39.58	16.67
VI	9.41	23.53	25.88	28.24	12.94	8.00	12.00	20.00	28.00	32.00	11.59	18.84	23.19	24.64	21.74	0.00	20.83	27.08	20.83	31.25
VII	1.18	1.18	15.29	41.18	41.18	2.00	0.00	26.00	36.00	36.00	2.90	10.14	18.84	36.23	31.88	0.00	8.33	27.08	43.75	20.83
VIII	5.88	4.71	25.88	28.24	35.29	6.00	14.00	18.00	30.00	32.00	2.90	5.80	26.09	27.54	37.68	2.08	14.58	25.00	33.33	25.00

5 = strongly agree; 4 = agree; 3 = neither agree nor disagree; 2 = disagree; 1 = strongly disagree; I = after delivery, I would not try to establish breastfeeding. I would bottle-feed my child with formula milk; II = I would breastfeed my child even if the child's father does not support my decision to breastfeed; III = I would not breastfeed in public, for example in a restaurant or in a park; IV = the child's mother and father should make a joint decision about breastfeeding; V = returning to work would not make me stop breastfeeding; VI = I find it acceptable to breastfeed after the child turns one if the child so desires; VII = I would breastfeed my child in accordance with doctor recommendations, regardless of close family member opinion; VIII = I would not breastfeed my child after he/she turns two.

Table 2. Answers to questions about knowledge of breastfeeding

	Bjelovar School for Nurses		Bjelovar School of Economics		Pakrac School for Nurses		Kutina School of Economics		χ^2 or Fisher* p value		
	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect	Correct	Incorrect			
Questions about knowledge of breastfeeding	n	81	4	65	4	4	42	8	2	0.103*	
Mother's milk is poor in iron.	%	95.29	4.71	94.20	5.80	16.00	84.00	16.00	95.83	4.17	
A child needs to be breastfed on schedule, every three to four hours.	n	16	69	5	64	22	28	28	8	40	0.000
Medicinal experts recommend exclusive breastfeeding (without adding water or solid food) until a baby is 6 months old.	%	18.82	81.18	7.25	92.75	56.00	44.00	44.00	16.67	83.33	
Breastfeeding protects a child from infectious diseases and allergies.	n	51	34	57	12	45	5	5	34	14	0.000
Breastfeeding accelerates children's brain development.	%	60.00	40.00	82.61	17.39	90.00	10.00	10.00	70.83	29.17	
Education on breastfeeding should start before a mother's pregnancy.	n	76	9	67	2	47	3	3	43	5	0.224*
Mother's milk is not sometimes of a sufficient quality, so it is necessary to introduce formula feeding alongside breastfeeding.	%	89.41	10.59	97.10	2.90	94.00	6.00	6.00	89.58	10.42	
Breastfeeding has proved to be useful for developing emotional attachment between a mother and a child.	n	63	22	64	5	42	8	8	45	3	0.001
If a mother is ill and takes medication, it is necessary to stop breastfeeding.	%	74.12	25.88	92.75	7.25	84.00	16.00	16.00	93.75	6.25	
If the child is fed by formula milk in the maternity ward, it is not possible to establish successful breastfeeding at home.	n	67	18	54	15	48	2	2	38	10	0.041
The substitute formula milk is equally nutritious and of the same quality as mother's milk.	%	78.82	21.18	78.26	21.74	96.00	4.00	4.00	79.20	20.80	
Father's support, such as his presence during the delivery, facilitates the establishment of breastfeeding.	n	24	61	21	48	23	27	27	21	27	0.103
When a child is able to start eating baby porridge, breastfeeding is not necessary.	%	28.24	71.76	30.43	69.57	46.00	54.00	54.00	43.80	56.30	
A child needs to be given water alongside breastfeeding from birth.	n	78	7	66	3	46	4	4	43	5	0.624*
Breastfeeding has a positive impact on a child's health later in life.	%	91.76	8.24	95.65	4.35	92.00	8.00	8.00	89.58	10.42	
	n	24	61	13	56	14	36	36	6	42	0.126
	%	28.24	71.76	18.84	81.16	28.00	72.00	72.00	12.50	87.50	
	n	75	10	66	3	45	5	5	42	6	0.376*
	%	88.24	11.76	95.65	4.35	90.00	10.00	10.00	87.50	12.50	
	n	78	7	64	5	46	4	4	40	8	0.357*
	%	91.76	8.24	92.75	7.25	92.00	8.00	8.00	83.30	16.70	
	n	35	50	36	33	31	19	19	29	19	0.051
	%	41.18	58.82	52.17	47.83	62.00	38.00	38.00	60.42	39.58	
	n	39	46	41	28	40	10	10	21	27	0.001
	%	45.88	54.12	59.42	40.58	80.00	20.00	20.00	43.80	56.30	
	n	32	53	33	36	39	11	11	22	26	0.000
	%	37.65	62.35	47.83	52.17	78.00	22.00	22.00	45.83	54.17	
	n	83	2	66	3	44	6	6	44	4	0.099*
	%	97.65	2.35	95.65	4.35	88.00	12.00	12.00	91.67	8.33	

* Fisher p value

sion regarding breastfeeding ($p=0.08$) and persistent breastfeeding without partner support ($p=0.075$).

In the prediction model with explanatory variables, ordinal logistic regression examined the effect of changes in the ‘School’ predictor on the ‘Intention to breastfeed’ criteria. There was a significant difference between participant responses to the intention items 6 ($\chi^2=8.42$; $p<0.05$) and 7 ($\chi^2=8.56$; $p<0.05$). Using data from the Parameter Estimates Table, we extrapolated cumulative logit values to achieve cumulative odds and probabilities (Tables 3 and 4). Results showed the probability of choosing responses 5, 4, 3, 2 and 1 to the intention item regarding breastfeeding at the child’s age of one, and on the item regarding the intention to breastfeed in accordance with doctor recommendation regardless of close family member opinion for students from each school.

Binomial logistic regression determined the impact of school on chosen responses to items regarding knowledge about breastfeeding. In other words, we examined the probability that the participant would choose one alternative over the other based on the in-

dependent variable (Table 5). The odds and odds ratios of student correct responses are shown for each school.

Discussion

In health education curriculum for primary and secondary school²⁵, little attention is paid to breastfeeding, however, in the proposal of national curriculum on health subject, breastfeeding is mentioned in the context of knowledge regarding responsible parenthood, which participants need to acquire during their education²⁶. As a source of information regarding breastfeeding, school is very differently ranked in our results and literature, ranging from the lowest rank, as ‘other sources’²⁷ to secondary rank, after a family member, television or magazines²⁸. Nevertheless, there is an increasing number of authors that classify school as the most important source of information and who strive for implementation of breastfeeding education in curriculum²⁹. In some countries, even religious education is used to encourage breastfeeding³⁰. Education and experience of educators who conduct education

Table 3. The probabilities of answers to the item of intention to breastfeed after the child turns one if the child desires so

	Answers*				
	1	2	3	4	5
Bjelovar Nursing School					
Cumulative logit		-2.836	-1.343	-0.286	0.908
Cumulative odds [exp(Cum.logit)]		0.059	0.261	0.751	2.479
Cumulative proportion [1/(1+exp(Cum.logit))]	1	0.945	0.793	0.571	0.287
Category probability	0.055	0.152	0.222	0.284	0.287
Pakrac Nursing School (-0.690)					
Cumulative logit		-2.146	-0.653	0.404	1.598
Cumulative odds [exp(Cum.logit)]		0.117	0.52	1.498	4.943
Cumulative proportion [1/(1+exp(Cum.logit))]	1	0.895	0.658	0.4	0.168
Category probability	0.105	0.238	0.257	0.232	0.168
Bjelovar School of Economics (0.102)					
Cumulative logit		-2.938	-1.445	-0.388	0.806
Cumulative odds [exp(Cum.logit)]		0.053	0.236	0.678	2.239
Cumulative proportion [1/(1+exp(Cum.logit))]	1	0.95	0.809	0.596	0.309
Category probability	0.05	0.14	0.213	0.287	0.309
Kutina School of Economics (-0.474)					
Cumulative logit		-2.362	-0.869	0.188	1.382
Cumulative odds [exp(Cum.logit)]		0.094	0.419	1.207	3.983
Cumulative proportion [1/(1+exp(Cum.logit))]	1	0.914	0.705	0.453	0.201
Category probability	0.086	0.209	0.251	0.252	0.201

*5 = strongly agree; 4 = agree; 3 = neither agree nor disagree; 2 = disagree; 1 = strongly disagree

Table 4. The probabilities of answers to the item of intention to breastfeed on doctor advice and contrary to the opinion of family members

	Answers*				
	1	2	3	4	5
Bjelovar Nursing School					
Cumulative logit		-3.701	-2.256	-0.533	1.18
Cumulative odds [exp(Cum.logit)]		0.025	0.105	0.587	3.254
Cumulative proportion [1/(1+exp(Cum.logit))]	1	0.976	0.905	0.63	0.235
Category probability	0.024	0.071	0.275	0.395	0.235
Pakrac Nursing School (0.889)					
Cumulative logit		-4.59	-3.145	-1.422	0.291
Cumulative odds [exp(Cum.logit)]		0.01	0.043	0.241	1.338
Cumulative proportion [1/(1+exp(Cum.logit))]	1	0.99	0.959	0.806	0.428
Category probability	0.01	0.031	0.153	0.378	0.428
Bjelovar School of Economics (0.556)					
Cumulative logit		-4.257	-2.812	-1.089	0.624
Cumulative odds [exp(Cum.logit)]		0.014	0.06	0.337	1.866
Cumulative proportion [1/(1+exp(Cum.logit))]	1	0.986	0.943	0.748	0.349
Category probability	0.014	0.043	0.195	0.399	0.349
Kutina School of Economics (-0.266)					
Cumulative logit		-3.967	-2.522	-0.799	0.914
Cumulative odds [exp(Cum.logit)]		0.019	0.08	0.45	2.494
Cumulative proportion [1/(1+exp(Cum.logit))]	1	0.981	0.926	0.69	0.286
Category probability	0.019	0.056	0.236	0.404	0.286

*5 = strongly agree; 4 = agree; 3 = neither agree nor disagree; 2 = disagree; 1 = strongly disagree

about breastfeeding are of great significance³¹. If children are provided with appropriate information on breastfeeding at school, they will probably become adults with greater capacity to choose the best nourishment for their child³². It is widely believed that after graduation, healthcare professionals acquire sufficient knowledge about breastfeeding, which is untrue^{33,34}. Even though the subject of breastfeeding is as old as human history³⁵, we are constantly facing new understanding of the importance of breast milk and breastfeeding. A significant portion of students (60.31%) expressed a desire for additional breastfeeding education at school, which is important because there is high probability that the majority of participants will face the decision about infant nutrition in the future. One of the goals of contemporary education is “training the citizens for successful managing in society...”³⁶, i.e. “educating from the point of transcended human needs is wanted”³⁷. The obligation of the schools is to give children all of the information regarding breastfeeding, to properly equip them for the time when they will need to choose³⁸.

Breastfeeding is especially important for a newborn; 16% of infant deaths could be avoided if they would be breastfed starting within the first day and 22% if they were breastfed within the first hour³⁹. For that reason, it is surprising that we had six participants from medical school who strongly disagreed with the intention to breastfeed even in the delivery room. On the contrary, none of the students from other schools strongly agreed with that statement. Papers on the subject imply insufficient medical school programs in education about breastfeeding⁴⁰.

The highest agreement scores (‘strongly agree’ and ‘agree’) for the item regarding the intention to breastfeed without partner support were recorded for students from medical schools in Bjelovar (90.58%) and Pakrac (96%). For the item regarding mutual partner decision to breastfeed, 40% of medical school students agreed (‘strongly agree’ and ‘agree’), in contrast to students from two schools of economics (47.92% and 56.52%). There was low negative correlation between the intention to breastfeed without support from part-

Table 5. Answers to questions about knowledge of breastfeeding

Question	Omnibus tests of model coefficient	p value	Nagelkerke R^2	Percentage correctly classified	Wald	p value	Exp(B) = odds ratio		
							1	2	3
1	6.288	0.098	0.061	92.9	34.493	0.000	0.259	0.802	1.136
2	23.914	0.000	0.143	79.8	27.743	0.000	3.388	0.337	0.863
3	18.892	0.000	0.107	74.5	3.354	0.067	6.000	3.167	1.744
4	4.451	0.217	0.042	92.5	36.629	0.000	1.885	3.967	1.018
5	16.338	0.001	0.111	85.3	18.049	0.000	1.833	4.470	7.857
6	10.621	0.014	0.068	82.1	24.509	0.000	6.448	0.967	0.994
7	6.121	0.106	0.033	64.9	14.987	0.000	2.165	1.112	1.883
8	1.763	0.623	0.017	92.5	37.333	0.000	1.032	1.974	0.772
9	6.033	0.110	0.036	77.4	14.987	0.000	0.988	0.590	0.363
10	3.639	0.303	0.031	90.4	35.822	0.000	1.200	2.933	0.911
11	2.089	0.554	0.018	90.8	37.333	0.000	1.032	1.149	0.513
12	7.816	0.050	0.041	58.2	2.619	0.106	2.331	1.558	2.302
13	20.004	0.000	0.103	61.4	0.575	0.448	4.718	1.727	0.874
14	22.184	0.000	0.113	61.0	5.080	0.024	5.872	1.518	1.458
15	5.870	0.118	0.063	94.0	27.108	0.000	0.177	0.530	0.256

1 = Pakrac Nursing School; 2 = Bjelovar School of Economics; 3 = Kutina School of Economics

ner and intention to mutually decide about breastfeeding (Spearman's $\rho = -0.259$; $p < 0.01$), and low positive correlation between responses to the items regarding intention to breastfeed without father's support and intention to breastfeed regardless of close family member opinion (Spearman's $\rho = 0.248$; $p < 0.01$). Father's role in breastfeeding is very important^{41,42} and it is wrong to neglect the impact of family members on initiation and duration of breastfeeding, such as a grandmother or older sister⁴³. This is particularly important for future healthcare professionals. Such approach affects not only their personal implications but also their professional work⁴⁴. Education of older healthcare professionals results in knowledge and professional behavior changes⁴⁵, but less in their personal attitude⁴⁶.

Fewer participants affirmed the intention to breastfeed in public, which is also an issue in other settings⁴⁷. When discussing public breastfeeding, social context is highlighted and at the same time, the impact of hunger of an infant is neglected, as well as the importance of breastfeeding for the elimination of stressful reactions in infants⁴⁸⁻⁵⁰. There is a conflict between the socially defined role of a woman and sexualized image of the female body, specifically "the breasts as a food for infants and breasts as a symbol of sexuality"⁵¹. Thus, we

interfere in woman's identity and behavior, sociocultural and other differences, which have different implications on breastfeeding around the world⁵². We cannot allow being involved in maternal or sexist determinism because a woman cannot break but unite her identity⁵³. Ignoring sociocultural, economic and other determinants on the account of rigid insistence on medical advantages does not facilitate woman's decision about breastfeeding; if anything, it scares her and confuses her⁵⁴. In these circumstances, confused and scared woman can try to find a solution in all sorts of 'getaways', such as the insufficient milk syndrome⁵⁵. The purpose of education is not to make pressure on a young woman, but to provide support and help her overcome historical, cultural, economic and other factors affecting the decision on breastfeeding.

With minor differences among schools, approximately 60% of our participants expressed the intention to breastfeed after returning to work. Data from the field state that return to work is noted as an important issue in initiating and maintaining breastfeeding and, depending on law, economic and cultural circumstances, there are offers of part-time working hours, breast pump usage, breast milk storage, etc.⁵⁶⁻⁵⁸. Participants significantly differed in the items regarding intention

to breastfeed longer than one year, where most of positive intentions were expressed by students from Pakrac Medical School (60%), and least by those from Bjelovar Medical school (41.8%). Intention to breastfeed longer than two years was highly supported by Pakrac Medical School (20.00%) and least by Bjelovar School of Economics (8.8%) students. Available data regarding breastfeeding duration for Bjelovar are approximately consistent with data from the research conducted in 2010 on a pediatric dispensary sample from Bjelovar, where 42% of children were breastfed for 12 months and 8% for 24 months⁵⁹. Because of health benefits from breast milk², the World Health Organization recommends exclusive breastfeeding for a period of 6 months, with continuation of partial breastfeeding until the child reaches the age of two years, or longer if the mother and the child decide to prolong breastfeeding⁶⁰. Research shows that optimal breastfeeding until the age of two years has a potential of preventing up to 13% of fatality in infants younger than 5 years⁸.

Statistically significant differences among participant responses to the items regarding knowledge are shown in Table 2. Fewer students knew that mother breastfed on demand (20.24%); however, looking only medical student responses, this percentage is considerably lower (28.15%) than for professional nurses (45–56%) who finished schooling⁶¹. As a professional recommendation, exclusive breastfeeding was poorly perceived by Bjelovar Medical School students (60%), which is still within the frame of adolescent knowledge data^{62,63}. Students from both schools of economics showed greater knowledge compared to students from medical schools concerning recognition of the positive effect of breastfeeding on brain development. When answering items about the need of starting education about breastfeeding before pregnancy, Pakrac Medical School students alone (98%) were significantly more correct in comparison to students from other schools (<79%). Even though the age at which the education of children should begin depends on numerous factors (target group, intervention purpose, holders of activities, place for conducting education, type of communication with end-users, associates and collaborators of activities, etc.^{64,65}), breastfeeding promotion activities should start from kindergarten age and continue to grandparent age⁶⁶. Participants also significantly differed in responses regarding justifica-

tion of adding water during exclusive breastfeeding, ranging from 37.65% to 78% of correct answers. This rate is consistent with the study by Abdel-Hady *et al.* conducted in students of medicine⁶⁷, which tells us how much attention is given to this framework in the education of future healthcare professionals.

Statistically significant differences in participant responses indicate that considering schools where the survey was conducted, education about breastfeeding has not yet been implemented in a unique program of education about breastfeeding. International^{68,69} and national authors⁷⁰ report on inadequate knowledge about breastfeeding in adolescents and thus reinforce the need for educational training of youth. The role of school as a standardized venue for gaining new knowledge is under-used in adolescent education about breastfeeding⁶⁹, thereby depriving the youth of essential information for future situations when they will have to make the right choice regarding breastfeeding⁷⁰. Appropriate breastfeeding education will provide a view of breastfeeding not only as a food, but will also provide insights into other aspects of breastfeeding. Numerous authors encourage implementation of nursing education in primary and secondary schools^{71,72}.

Conclusion

In this paper, the obtained degree of positive intentions and knowledge about breastfeeding, with significant differences in particular intentions and knowledge items among students from different schools, does not seem to be a satisfactory basis for students to make an informed decision on breastfeeding in the future. We propose development of a unified and structured breastfeeding education program for secondary school students.

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Sažetak

NAMJERE I ZNANJE UČENIKA SREDNJIH ŠKOLA O DOJENJU

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Majčino mlijeko čini svijet zdravijim i boljim. Smrti i patnje tisuće djece i majki svake godine mogu se izbjeći dojenjem, uz enormne ekonomske uštede. Cilj ovoga rada bio je ispitati znanje i namjere dojenja učenika trećih razreda različitih srednjih škola, na osnovi čega možemo zaključiti o jedinstvenosti i strukturiranosti programa obrazovanja o dojenju u srednjim školama. *On-line* upitnik namjera i znanja o dojenju su ispunila 252 učenika iz 4 srednje škole u Bjelovaru (2), Kutini i Pakracu. Rezultati su prikazani metodama deskriptivne statistike. Kruskal-Wallisov test je korišten za obradu razlika rezultata u upitniku namjere, a χ^2 -test za razlike u testu znanja. Rezultati pokazuju da se odgovori ispitanika pojedinih škola statistički značajno razlikuju po pojedinim pitanjima namjere i znanja o dojenju. Nedovoljna informiranost o dojenju učenika trećih razreda srednjih škola ne daje zadovoljavajuću osnovu za informiranu odluku o dojenju u odrasloj dobi. Autori predlažu izradu i uporabu jedinstvenog strukturiranog programa o dojenju namijenjenog učenicima srednjih škola.

Ključne riječi: *Mlijeko, humano; Škole; Dojenje; Izobrazba; Hrvatska; Ankete i upitnici*