



ORIGINAL RESEARCH PAPER

Medical Education

QUESTIONNAIRE FOR IDENTIFYING HYPOLACTASIA IN ADULTS

KEY WORDS: : hypolactasia – dyspepsia - questionnaire

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ABSTRACT

Objective: Create a questionnaire to identify the prevalence of intolerance milk and dairy products. **Method:** Questionnaire is arbitrary format. Negotiated with the customer research topic, objectives and expected results. Thought out questions, agreed with the customer, are included in the questionnaire and formatted. **Results:** The questionnaire developed consisted of 47 questions concerning the individual's health, personal data (ethnicity, including ethnicities going back three ancestral generations), symptoms of milk and dairy product intolerance, and attitude to milk consumption. **Conclusion:** The questionnaire for the detection of milk intolerance reveals the presence of intolerance to milk and dairy products, the volume of drinking milk and dairy products in different ethnic groups of the population, depending on the carrier genotype C/C and C/T-13910.

INTRADUTION

It is known that in mammals, including humans, lactose malabsorption or adult hypolactasia develops as breastfeeding ceases [1,2]. About 70% of all humanity is a carrier of the homozygous genotype of milk intolerance – C/C-13910 [3]. The C/C-13910 genotype is transmitted as an autosomal recessive trait. When consuming milk, carriers of the C/C-13910 genotype develop gastrointestinal symptoms: diarrhea, bloating and abdominal pain, etc. On the contrary, carriers of the alleles of the C/T and T/T-13910 genotypes have good tolerance to milk and dairy products [4,5].

The mutation of the genotype C/C to C/T - 13910, occurred approximately 10,000 years ago in the Early Neolithic period (Bronze Age), during the development of agriculture and livestock breeding [6,7]. This period is also known as the Early Neolithic Revolution in the development of human society.

A generally accepted highly sensitive method for diagnosing hypolactasia in adults is the genotyping test [8], developed a short period of time after the discovery of the lactase synthesis gene - Lactase code transcription-LCT [9].

However, genotyping and phenotyping of lactose intolerance does not answer a number of questions regarding the diagnosis of hypolactasia in adults. Issues such as determining ethnicity, health status, anthropometric indicators, patterns of consumption of milk and dairy products, gastrointestinal symptoms, etc. To conduct a study on the prevalence of milk intolerance in some population groups living on the territory of the Republic of Uzbekistan it was necessary to develop a questionnaire for study participants. We have proposed an original questionnaire to identify hypolactasia in adults.

MATERIALS AND METHODS

When developing the questionnaire, 9 points of creating an effective survey questionnaire were taken into account [10,11]. What information will be obtained from using the questionnaire?

- Task force that will answer questions
- By what method(s) will study participants be selected?
- Development of questionnaire content
- Formulating questions
- Choosing or designing a questionnaire format
- Determining the length of the interview
- Testing (piloting) the questionnaire
- Adoption of the final questionnaire format

Questionnaire consists of 5 sections and 47 questions. The first section of questions the relates to the section general information about the study participant: ethnicity, age,

gender, etc. The second section of questions concerns health status (presence of chronic diseases) and anthropometric indicators of study participants, the third and fourth sections contain questions on the consumption of milk and dairy products (volume, frequency, presence of gastrointestinal symptoms). Section 5 contains control questions for sections 3 and 4.

The following principles were followed when compiling the questionnaire:

1. Questions are designed according to the requirement of what we want to know.
2. The questions are clear to the research participant
3. Abbreviations, terms, jargon and colloquial phrases were not used

RESULTS

The questionnaire for the participant of study

#	Question	2	3
1. GENERAL DATA			
1	Full name		
2	Sex (do not ask)	1 Male	2 Female
3	Age (in years)	_____ Years	
4	Yours ethnicity/nationality	1 Uzbek	2 Tajik
		Other (please, write which one)	
5	Your father's ethnicity/nationality	1 Uzbek	2 Tajik
		Other (please, write which one)	
6	Your mother's	1 Uzbek	2 Tajik
		Other (please, write which one)	
7	Your grandfather's (on your father line)	1 Uzbek	2 Tajik
		Other (please, write which one)	
8	Your grandfather's (on your mother line)	2 Tajik	
		Other (please, write which one)	

9	Your grandmother's (on your father line)	1 Uzbek 2 Tajik Other (please, write which one)	24	If you do not drink milk, why (point the reason):	1 - do not like a taste of fresh milk 2 - I feel discomfort in abdomen after milk 3 Adults in our family usually do not drink fresh milk (only children) Other reasons (please, describe)
10	Your grandmother's (on your mother line)	1 Uzbek 2 Tajik Other (please, write which one)	25	If you don't drink fresh milk now, in what age you've stoped it?	in _____ years 99 do not remember
11	Your grandgrandfather's (on your father line)	1 Uzbek 2 Tajik Other (please, write which one)	26	After fresh milk intake, have you ever feel any discomfort?	1 Yes 2 No Go to question 32
12	Your grandgrandfather's (on your mother line)	2 Tajik Other (please, write which one)	27	If yes, what kind of discomfort do you usually feel from the following list :	1 Heartburn 2 Vomitting 3 Nausea 4 Abdominal pain 5 Meteorism, distended abdomen, gases 6 Tummy rumbling 7 Early/quick satiation 8 Diarrhea 9 Constipation Other (please, describe)
13	Your grandgrandmother's (on your father line)	1 Uzbek 2 Tajik Other (please, point which one)	28	In which age these symptoms above first time appears?	_____ Years old 99 Always
14	Your grandgrandmother's (on your mother line)	1 Uzbek 2 Tajik Other (please, point which one)	29	Has milk been a reason for skin rash, sneeze, asthma or any other allergic reactions?	1 Yes 2 No
15	Your home address	1 Oblast (province) 2 Rayon (district) 3 City/town 4 Rural village 5 House/building and appartment	30	What time after fresh milk intake the symptoms mentioned above (q29) usually appear?	1. up to 30 minutes after intake 2. within two hours after fresh milk intake Other (point certain timeframe, please)
2. General health			31	After drinking what amount of milk the above symptoms usually appear.	_____ glasses (count in glasses)
16	Do you currently count yourself as generally healthy?	1 Yes 2 No	4. Usage dairy produce		
17	Do you have any chronic diseases (or any diseases that are recorded by your GP or other doctor as chronic)?	1 Yes 2 No 6.2.3 Name those diseases, please (but do not enter in details with the diagnosis)	32	Do you eat any milk products (yogurt, cheese, sour cream etc.)	1 Yes 2 No
18	Your height (don't ask)	(in sm) _____ sm	33	If yes, how often?	1 - every day 2 - a week _____ days (write) 3 - a month _____ days (wirte)
19	Your weight (don't ask)	(in kg) _____ kg	34	If yes, have you ever felt any discomfort after it's intake?	1 Yes 2 No Go to question 40
3. Usage fresh milk			35	If yes, can you describe which kind of discomfort did you felt:	1 Heartburn
20	Do you drink fresh milk?	1 Yes 2 No			
21	If you drink fresh milk, how often usually?	1 - every day 2 - a week _____ days (write) 3 - a month _____ days (wirte)			
22	If you drink fresh milk, how many glasses in average:	1 # ____ of glasses a day 2 # ____ of glasses a week 3 # ____ of glasses a month			
23	What is a volume of this glass (ml)	_____ ML in one glass			

		2 Vomitting			4 Rarely that once a month
		3 Nausea			5 In some cases after some type of food or drinks intake
		4 Abdominal pain			14.6 Never feel such symptoms
		5 Meteorism, distended abdomen, gases			
		6 Tummy rumbling			
		7 Early/quick satiation			
		8 Diarrhoea			
		9 Constipation			
		Other (please, describe)			
36	In which age these symptoms above first time appears?	_____ Years old			
		99 Always			
37	Has dairy been a reason for skin rash, sneeze, asthma or any other allergic reactions?	1 Yes			
		2 No			
38	In which it was first time appears?	_____ Years old			
		99 Always			
39	What time after dairy intake the symptoms mentioned above usually appear?	1- In 30 minutes time			
		2 - In 2 hours time			
		Other (point certain timeframe, please)			
5. Control questions					
40	Do you think that you have any milk	1 Yes			
		2 No			
41	If yes, can you conclude about linkage between your milk intolerance and your health status, or diseases you mentioned above in 6.2.3)?	1 Yes			
		2 No			
		Write conclusion			

		99 Not sure			
42	Have you ever felt any gastro-intestinal disturbances (stomach, intestine, abdominal etc.)?	1 Yes			
		2 No			
43	If yes, which ones from the following:	1 Heartburn			
		2 Vomitting			
		3 Nausea			
		4 Abdominal pain			
		5 Meteorism, distended abdomen, gases			
		6 Tummy rumbling			
		7 Early/quick satiation			
		8 Diarrhoea			
		9 Constipation			
		10 Other (please, describe)			
44	How often do you feel such symptoms?	1 = every day			
		2 = times a week _____ (write)			
		3 = times a month _____ (write)			
45	Which of the mentioned above symptoms did you feel during last month?				1 Heartburn
					2 Vomitting
					3 Nausea
					4 Abdominal pain
					5 Meteorism, distended abdomen, gases
					6 Tummy rumbling
					7 Early/quick satiation
					8 Diarrhoea
					9 Constipation
					10 Other (please, describe)
					11 Never felt anything like mentioned above
46	How strong was mentioned by you symptoms?				1 Weak (able to not paid attention to it)
					2 Average level (could not ignor it, but it bothered me not very much)
					3 Very serious and intensive (disturb me from everyday activities)
47	How many time have you stool a week in average? Which kind?				in numbers _____ (write)
					1. Normal, usuall
					2. More solid than usual
					3. More liquid than usually
					4. Liquid
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DISCUSSION

A well-designed questionnaire is essential for a successful study. However, the researcher should develop his or her own intuition about what constitutes “good design,” as there is no one-size-fits-all approach to questionnaire design.

An effective questionnaire is one that helps directly achieve the objectives of the study; provides complete and accurate information; easy to understand for both interviewers and respondents, and designed to enable analysis and interpretation of study results [12,13].

There are at least nine effective steps to meeting the requirements of designing a good questionnaire: Selecting the required information; identification of target responders, method of selecting and reaching respondents; determining the content of questions; formulation of questions; organizing the sequence of questions; checking the duration of the questionnaire; pre-questionnaire and post-questionnaire format [14].

The experience of using a combination of interviewing for

milk intolerance and the study of nucleotide polymorphism (SNP of the LCT C/T-13910 gene) indicates the effectiveness of the combined use of these testing methods in the diagnosis of hypolactasia in adults [15,16].

Conclusion. A questionnaire to identify milk intolerance allows you to identify the presence of intolerance to milk and dairy products, the amount of milk consumption in various ethnic groups of the population, depending on the carriage of the C/C and C/T-13910 genotypes.

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