

Stakeholders' Views on Factors Influencing Nutrition Policy: a Qualitative Study Across Ten European Countries

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The objective was to identify the main factors influencing micronutrient policies in the opinion of policy actors in ten European countries. Study was carried out during Jan–Nov 2010 in European countries: the Czech Republic, Denmark, England, Germany, Greece, Italy, the Netherlands, Norway, Poland and Spain. Semi-structured qualitative interviews were conducted with representatives of stakeholders involved in the vitamin D, folate and iodine policy making process. Fifty eight key informants representing mainly scientific advisory bodies (n=24) and governmental organisations (n=19) participated in the study. The remaining interviewees represented non-governmental organisations (n=6), industry (n=4) or were independent academic or health professional experts (n=5). Data were analysed by theoretical interpretative thematic analysis. Insights from interviewees on the development of micronutrient policies were grouped using the Public Health Nutrition Policy-making model. The main factors influencing the micronutrient policies were: systematic monitoring of nutrition and health, causal relationships between consumers' diet-related behaviours and health outcomes, scientific recommendations from national bodies (Science area); scientific recommendations from international authorities and experiences of other countries, EU legislation, cultural factors (Wider context) and political environment, national capacity to deal with the problem, national legislation, economics, stakeholder engagement, relationships between stakeholders (Policy and institutions area). The spectrum and weight of the factors influencing nutritional policy depends on nutrient, country and degree of its "advanced status" within nutrition policy, political environment, culture and socio-economic conditions as well as the point of view (who is expressing the opinion).

ABBREVIATIONS

CZ – Czech Republic; DE – Germany; DK – Denmark; EL – Greece; EN – England; ES – Spain; GOV – governmental organization; IND EXP – independent academic or health professional expert; IT – Italy; NGO – non-governmental organization; NL – Netherlands; NO – Norway; PL – Poland; SAB – scientific advisory body/expert committee.

INTRODUCTION

Public health nutrition policy is aimed at achieving desirable public health nutrition outcome(s) through a statement of values, beliefs and intentions towards shaping the food and nutrition system [Lawrence, 2007].

The global evolution of nutrition policies started twenty years ago with the "World Declaration and Plan of Action

for Nutrition" [FAO/WHO, 1992]. After that, two European Action Plans were developed [WHO, 2001; WHO, 2008] to further encourage Member States to integrate actions, bridge different government sectors, involve public and private actors and consider their own national policies in order to improve health, nutrition, food safety and food security. Moreover, many other documents and council resolutions in the European Union were endorsed, which are focused mostly on the diet and physical activity as two of the main risk factors for non-communicable diseases [EC, 2007; EC, 2005].

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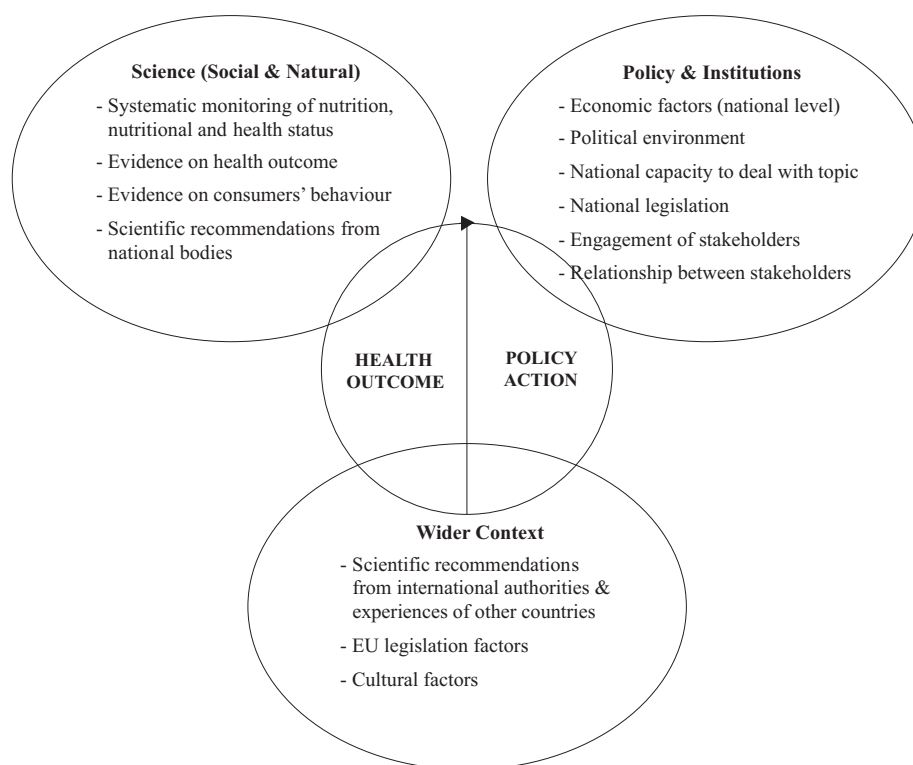


FIGURE 1. Main factors influencing nutrition policy.

Throughout last few decades some theories and models have been provided to explain how nutrition policy is made and to help the policy-makers to elaborate and implement nutrition policies successfully [Lawrence, 2007; Lang, 2006; Margetts, 2004]. The shift from a rational policy-making model toward more pronounced role of stakeholders/actors and their political interests was an important milestone in health policy development [Brugha & Varvasovszky, 2000]. Recently observed encouragement for evidence-based policy making is also aimed at increasing its transparency, acceptability and accomplishment. But the subjectivity of evidence evaluation and context may influence the final decision causing that the same evidence (“fact”) may result in action in one context and inaction in another one. The constituents of the context again vary in different environments, some may be precisely identified and controlled while others may not [Dobrov *et al.*, 2004].

The purpose of this study was to identify the main factors influencing micronutrient nutrition policy in the opinion of policy actors in ten European countries varying in their political, cultural and socio-economic environment.

METHODS

Semi-structured qualitative interviews with 58 representatives of stakeholders involved in the vitamin D, folate and iodine policy making process were conducted in ten European countries, representing different regional and socio-cultural backgrounds, namely: the Czech Republic, Denmark, England, Germany, Greece, Italy, the Netherlands, Norway, Poland and Spain. The interviewees represented government, scientific advisory bodies or expert committees, non-govern-

ment organizations, industry or were independent academic or health professional experts. They were selected based on their involvement in different areas of national policy development on vitamin D, folate and iodine, such as policy advice, coordination, decision making, and implementation. Those three micronutrients were chosen from the ten priority micronutrients identified within EURRECA network [Cavelaars *et al.*, 2010].

Researchers in the ten countries conducted interviews in their local language, either in person or on the telephone, and recorded them with prior obtained consent and transcribed verbatim. Interviews contained open questions on the participant's role in policy decisions, the process of policy making, factors involved in policy development, constraints in policy making, and evaluation of policy instruments. Participants were also asked to reflect on two draft models that could support policy making. Data were collected during Jan-Nov 2010 and then were analysed by theoretical interpretative thematic analysis [Braun & Clarke, 2006; Joffe & Yardley, 2004; Boyatzis, 1998] in two stages. The first stage was to prepare individual summary (in English) of identified common as well as distinctive themes in each country. In the second stage, summaries from all ten countries were analysed to distinguish the prominent factors influencing national policies on vitamin D, folate and iodine from the perspective of the stakeholders. The final results were discussed with all researchers from ten countries to ensure that participant's views were interpreted and reflected accurately. Data presented herein are part of the data set represented in Timotijevic *et al.* (case study #3) [Timotijevic *et al.*, 2013].

The main study findings – factors influencing nutrition policy in stakeholders' opinions – have been presented below (and in Figure 1) using the three types of evidence categories

TABLE 1. Interviewee sample and response rates.

Country	Participant group					Total	Response rates (%)
	Scientific advisory body / Expert committee	Independent expert	Governmental organisation	Non-governmental organisation	Industry		
Czech Republic	3	1	4	2	1	11	11/11 (100)
Denmark	2		2			4	4/5 (80)
England			2 ¹	1		3	3/10 (30)
Germany	4 ²					4	4/13 (31)
Greece	2 ³		3		1	6	6/7 (86)
Italy	2	1				3	3/8 (38)
Netherlands	2		1	2 ⁴	1	6	6/7 (86)
Norway	3	1	2			6	6/6 (100)
Poland	5	1	1	1	1	9	9/10 (90)
Spain	1	1	4			6	6/17 ⁵ (35)
Total	24	5	19	6	4	58	

Both participants also represented a SAB; ² Two participants represented a SAB (obligatory function) and two represented an expert committee (voluntary function); ³ Both participants represented also a NGO and their own experience; ⁴ Both participants represented also a SAB; ⁵ One interview with an industry representative was excluded from the analysis (and this table) because it was considered irrelevant for the purpose of the study.

(Science, Wider context, Policy and Institutions) identified in a Public Health Nutrition Policy-making Framework, developed by Timotijevic *et al.* [2013].

RESULTS

Description of the interview sample

Most key-informants were representatives of scientific advisory bodies/expert committees (24 out of 58) or government officials (n=19), mainly from health ministries (Table 1). In addition, representatives of relevant non-governmental organizations (n=6) and industry (n=4) were interviewed as well as individual experts (n=5). Three (EN and IT) to eleven (CZ) interviews were conducted in each country depending on a country's policy development context or response of key informants approached. The response rates were high in the Czech Republic, Norway, Poland, Greece, the Netherlands and Denmark (100–80%), while in Italy, Germany, Spain and England were much lower (37–30%).

SCIENCE

Systematic monitoring of nutrition, nutritional and health status of population and especially the risk groups, was indicated by interviewees as a crucial factor influencing the nutrition policy. The actual, regularly collected data on nutrient intake and status as well as the prevalence of nutrient-related diseases were seen as essential to define and prioritize the population needs and to start the whole process of improving their health status. As the interviewees underlined, such monitoring was satisfactory in most of the countries (especially in NL, DK and NO). However, it was believed to be insufficient specifically in relation to representative populations for folate and vitamin D in EL, PL and CZ and iodine in the UK. A deficiency of such data was considered to be an important reason for political inaction in those countries (Table 2, #1).

According to informants, identification of the problem scale, *e.g.* who is affected, the whole population or only the specific subgroups, their characterisation *e.g.* age, socio-economic status, culture/religion also influences the final decisions in nutrition policy, especially the choice of policy instrument. Food fortification (obligatory) was proposed in many countries as the way of overcoming the nutrient deficiency when the whole or a significant part of population is affected, while the use of dietary supplements was recommended for the individuals (Table 2, #2). Generally, children, elderly, and people of low socio-economic status were mentioned as the most vulnerable groups in all countries. Immigrants were perceived as the risk groups especially for vitamin D deficiency in Scandinavian countries.

Evidence on health outcome

Difficulties with problem characterisation in terms of ambiguous health consequences of inadequate nutrition were mentioned by the majority of key informants as the main reason for inaction. Lack of clear evidence was mainly stated for folate (in NO, CZ, EN, ES, DE, NL, PL) and vitamin D in the context of its roles other than in bone metabolism (in CZ, DK, EN, ES, DE) (Table 2, #3, 4). In the case of folate, the main reason for not undertaking an obligatory food fortification, according to interviewees' opinion, was the contradiction, *i.e.* neural tube defect protection in new-borns on one hand and increased colon cancer risk in elderly on the other hand with elevated folate intake. On the contrary, for iodine the evidence was considered sufficient to develop policy in almost all countries, except England (Table 2, #5). Generally, in each country at least one informant stated that nutrition policies are targeted on improving overall diet (*e.g.* increase the fruit and vegetables consumption, decrease saturated fats, salt and sugar consumption), instead of improving specific micronutrient intake/status, as the prophylaxis of many diet-related diseases, like obesity or heart diseases.

TABLE 2. Illustrating quotes in Science area.

Number of quote	The quote	Author of the quote (stakeholder and country)
Systematic monitoring of nutrition, nutritional and health status		
1.	<i>"The problem we are faced with is the lack of organized and systematic recording of data which will clearly show the needs [for vitamin D]."</i>	GOV EL
2.	<i>"There has to be a significant part of the population that has the problem before one should control it through the diet. If there is a smaller part of the population that has a need and, on top of that risk that some people will be harmed, then you shouldn't do it through the diet. In this case one has to try to encourage the use of supplements."</i>	GOV DK
Evidence on health outcome		
3.	<i>"when we were doing folic acid, folate, reduce NTDs, that's easy, that's understandable as a health outcome. Improve folate status, nobody understands that. How do you do (...) how so you get a minister's head around what improving folate status means?"</i>	GOV EN
4.	<i>"There is a general agreement that the Danes get too little vitamin D during winter time, but there is not agreement on how dangerous that is for the majority of the population. So we are not there yet where we introduce mandatory fortification with vitamin D."</i>	GOV DK
5.	<i>"(...) iodine deficiency induces completely defined, definite, and coherent disorders which are clinically described and people understand and apprehend them. There are objective tests of the saturation."</i>	GOV CZ
Evidence on consumer's attitude and behaviour		
6.	<i>"(...) We also analyzed the sources of folate in a daily diet; it appeared that people who do not eat bread consume lower amount of this vitamin than other people, which means that for this specific population fortifying bread would be of no use since those people do not eat bread whatsoever."</i>	SAB PL
7.	<i>"(...) However, by that time the industry believed that the consumer attitudes towards fortified food products had changed to the more negative and were afraid to loose market shares and was not longer prone to fortify all milk. So now only one type of milk comes with added vitamin D."</i>	SAB NO
8.	<i>"(...) if we did not take into account the consumer perception and behaviour, we would fail. It would not work, if we did not consider the consumer perception."</i>	SAB DE
9.	<i>"(...) there are needed skilled resources accredited by some authority, which would make up the information clear (...)."</i>	SAB CZ
10.	<i>"The Chief of Polish Society of Paediatrics asked the National Health Fund (NFZ=Gov) for establishing the special dietician procedures. But they answered that there is no need for this as everyone is enough educated and this is conducted by television and radio..."</i>	IND EXP PL
Scientific recommendations from national bodies		
11.	<i>"(...) the establishment of an independent institution that would use the knowledge from different spheres of science and offer them to the political sphere and to the public for use"</i>	GOV CZ

Many interviewees indicated that also the **evidence on consumer's attitude and behaviour** of different age and socio-economic subgroups should be gathered and evaluated. Lack of such information may cause implementing unsuccessful policy option(s) (Table 2, #6). Consumers' negative attitude to the fortified products was perceived as the main reason for not introducing too many of such foods in the market, especially in NO, DK and IT (Table 2, #7). Changing consumers' behaviour throughout education programs, campaigns, etc. was emphasised as one of the favourable policy instruments in most of the countries, which is in line with the political environment (liberalism) occurring in the country (Table 2, #8). In a few countries, especially PL and CZ, key informants raised the question of not sufficient and scientific-based education of consumers who are mostly educated by media (TV, internet, magazines) (Table 2, #9, 10).

Scientific recommendations from national bodies

According to interviews, conclusions and final advices of national SABs (the risk assessment) should inform the government about the nutrient-related health problems that need to be solved. Additionally, the message coming from SAB should be explicit and based on scientific evidence. Well established and systematic process of informing the government by SAB was indicated in NL, DK, NO. On the contrary,

non-harmonised recommendations from various scientific institutions impede the communication between scientists and government and often cause inaction in nutrition policy. Interviewed SAB representatives from Czech Republic, Poland, Greece and Spain called for better organisation within scientific bodies to improve the effectiveness of nutrition policy (e.g. for vitamin D and folate and generally) and to avoid misleading communication for the policy makers and for the consumers. SAB representatives proposed to establish one independent institution in those countries, which would be multidisciplinary and would prepare one clear and unequivocal opinion. According to Czech informants, a model for iodine operating in this country *i.e.* Intersectoral Committee for Solving the Iodine Deficit which gathers representatives from different public and private organizations, should be followed for vitamin D and folate policies (Table 2, #11).

WIDER CONTEXT

Scientific recommendations from international authorities and other countries experiences, EU legislation and culture are additional factors that influence nutrition policy as key informants indicated. International organisations, like WHO, FAO, EFSA, ICCIDD, UNICEF and their initiatives were noticed as very important drivers for nutrition policies at national levels, which was observed especially for

TABLE 3. Illustrating quotes in Wider context area.

Number of quote	The quote	Author of the quote (stakeholder and country)
Scientific recommendations from international authorities and other countries experiences		
1.	<i>"...micronutrients recommendations, in particular for iodine, derive fundamentally from WHO epidemiological surveys and it was scientifically proven that, through a programme of iodine supplementation there were beneficial effects (...)."</i>	SAB IT
2.	<i>"Any recommendations for micronutrients intake are based on WHO-EFSA relevant recommendations and EC's requirements for harmonization of legislation."</i>	GOV EL
3.	<i>"(...) we looked at the experiences from other countries. We put a lot of emphasis on what goes on in Europe and in particular the other Nordic countries and here the situation is similar – one has evaluated the possibility of fortification but no country has ended up implementing it. So in that way we have been a part of the European reticence."</i>	SAB NO
EU legislation factors		
4.	<i>"You would very much like to apply national oriented nutrition policy, but you are just bound, bound by European legislation."</i>	GOV NL
5.	<i>"... it is desirable a more European policy, based on global knowledge (...) that gives advice to the countries in order to prioritise the interventions. (...) The EU should steer this process by establishing guidelines [regarding micronutrients recommendations] (...). Because besides, if we are talking about recommended intakes and fortified foods for public health improvement, common policies should be established for the sake of 'free circulation for community goods'."</i>	IND EXP ES
Cultural factors		
6.	<i>"...our proposal, based on laboratory analysis of certain Greek traditional foods which proved to be very rich in some micronutrients, is: If a healthy adult follows a balanced diet in the frame of Mediterranean diet there is no need to eat enriched foods or take food supplements, because this diet can ensure not only the recommended daily intake of the three specific micronutrients but totally all of the necessary nutrients."</i>	SAB EL

iodine (CZ, IT, PL) and folate (IT) (Table 3, #1). There was a call for such initiatives also for vitamin D and folate (CZ). In Greece, the need for harmonisation with WHO/EFSA recommendations and EU legislation was seen as the fundamental motive for action in nutrition policy (Table 3, #2).

Lessons from other countries, their experiences with the effectiveness of different nutrition policy options (for iodine) or the decisions undertaken by other governments (e.g. for folate) also influenced the action/inaction at the national level in stakeholders' opinions (Table 3, #3).

On the other hand, **EU law** was perceived rather as a kind of constraint in nutrition policy, especially in NL, NO, DK and EN, and was underlined by different stakeholders but mostly by government representatives (Table 3, #4). In Spain and Greece, on the contrary, recommendations and regulations from EU were rather appreciated to establish policies at the national level (Table 3, #5).

Cultural factors

When the nutrition policy options and instruments are discussed, the culture/religious aspects of particular population/country or region cannot be neglected as mentioned by the representatives from all countries. They influence the diet, eating habits, lifestyle of inhabitants of different countries or regions, e.g. Mediterranean one (Table 3, #6).

POLICY AND INSTITUTIONS

Based on interviewees opinions, factors influencing the general approach in nutrition policy and particularly the choice of policy option(s) and instrument(s) that can be placed in this area are: economic factors (costs, budgets – at the national level), political environment (e.g. type of governing, political changes), national capacity to deal with the topic (e.g. the infrastructure and organisation, timing),

national legislation, engagement of stakeholders in decision-making and relationship between stakeholders.

Economic factors, e.g. lack of money/limited budgets, high costs of particular policy instruments, expressed also in costs to benefits relation, were noticed as powerful constraints in nutrition policy in all countries. Insufficient resources were the main reason for insufficient monitoring and up-dating the micronutrient intake or status data in various populations (Table 4, #1, 2). Limited resources on nutrition policies were connected with governmental officials' opinions that they were less significant/urgent than other public health problems (Table 4, #3).

Political environment, especially the type of governing occurring in the country was perceived as a meaningful component in nutrition policy. Liberalism was mentioned to shape the general character of nutrition policy, mainly in the context of policy instruments preferences (especially the educational programmes/campaigns and voluntary food fortification) and it was indicated in most of the countries, like in north (NL, DK, NO and EN), central (CZ) and south (ES) of Europe (Table 4, #4, 5).

This liberal attitude of government was expressed as a positive factor, nevertheless in the Czech Republic it was also seen as a kind of barrier in the nutrition policy (Table 4, #6).

Political changes in terms of changing the ruling parties as well as the time of elections when some decisions can be suspended or just opposite – can be accelerated to win the votes, also influence the nutrition policymaking as government representatives from NL, EN and EL mentioned (Table 4, #7). Greek interviewees pointed that no procedure in nutrition policy was settled that operates non-stop, independently of political changes and it rather depends on actual political leadership. Besides, the lack of political will was indi-

TABLE 4. Illustrating quotes in Policy and institutions area.

Number of quote	The quote	Author of the quote (stakeholder and country)
Economic factors		
1.	<i>"(...) the situation is not improving but getting worse – the monitoring financial resources are getting smaller which is linked to the economic crisis and pressure to decrease the national costs."</i>	SAB CZ
2.	<i>"I think that the most important factor in our country is the economic issue. Conducting good nutritional research, actualization of nutrition recommendations, or others is connected with expenses, and for these too little money is allocated."</i>	SAB PL
3.	<i>"But there are potential - it's the potential for conflict. I mean, I think that em...as a nutritionist, I just have to accept that actually there are bigger things for public health."</i>	GOV EN
Political environment		
4.	<i>"The first principle is to ensure that people just stay, as long as possible, as healthy as possible. And that they particularly do it themselves... That is the governments withdrawing themselves, what you actually see pretty much everywhere."</i>	GOV NL
5.	<i>"(...) generally speaking, the Mediterranean countries have been more permissive regarding nutrition policies. It has been based on voluntarism rather than legislation and prohibition (...). It is a matter of character, we don't like to oblige or prohibit. Also our shorter regulatory experience plays a role I guess."</i>	IND EXP ES
6.	<i>"(...) we have no rights to order people how and what to eat (...) it is not possible to restrict the freedom of human decisions (...) the excessive liberalism – this is the problem in the Czech Republic."</i>	GOV CZ
7.	<i>"(...)It sounds very strange, but also nutrition policy has a 'political colour'. We now have a minister who prefers no paternalism; hence, people have to make their choices themselves. Because actually we are, let's say, that's part of the translation into policy, that you also look at politics; that you do not only look at, okay, what is industry doing, but particularly also to who are the House of Representatives [the lower house/second chamber] and what direction/flow do they want regarding public health."</i>	GOV NL
8.	<i>"...however, whether its [SAB] recommendations will be adopted and implemented or not, it is a matter of political will..."</i>	NGO EL
9.	<i>"...that's why we've got the separation of risk assessment from...from risk management, i.e. the science from the policymaking, is so that this...so that you so the science totally without the political context, totally without the money context."</i>	GOV EN
10.	<i>"In Norway we have adapted the EFSA model were you have an independent risk assessment committee independent of both commercial and political interests."</i>	IND EXP NO
National capacity to deal with the topic		
11.	<i>"To develop Health-Behaviour-Policy framework is quite problematic; because there are not enough people who would be devoted to this and prepare something from this is not easy. The number of nutrition experts is decreasing rather than increasing, so there is no one to do it"</i>	NGO CZ
National legislation		
12.	<i>"(...) In Poland it is an obligatory process, salt iodization. (...) Iodine deficiencies are observed in all age groups, so the best way is to use a commonly consumed food product. (...)"</i>	SAB PL
Engagement of stakeholders within nutrition problem		
13.	<i>"(...) we try to involve the local government into the nutrition policy as they may allocate some money into nutritional programs e.g. nutrition education at schools, and also we cooperate with the Ministry of Health, but in our opinion the Ministry of Health has other priorities."</i>	SAB PL
14.	<i>"(...) maybe the little interest of politics on the issue, even if health care programmes mean savings in terms of money, ..."</i>	SAB IT
15.	<i>"Consumers play a marginal role in Norwegian nutritional policy. From complicated historical reasons I think, where consumer politics were oriented towards protecting but not involving consumers. Consumers therefore do not have a strong and clear voice in nutritional policy making. (...) It is not that one do not take consumer issues into consideration – there is a strong tradition in Norway for conducting nutritional policy - it is just that it is a very nutritional science driven way of thinking."</i>	IND EXP NO
Relationship between the stakeholders		
16.	<i>"From the producers' point of view, some things cannot be so easily achieved (...). There are some technological barriers, so it is good when they ask us, whether we are able to do this and that."</i>	INDUSTRY PL
17.	<i>"Stakeholders are involved at all levels. When new rules are negotiated in the EU in the food area we usually discuss them with a group of stakeholders – industry associations, consumer associations, patient associations (e.g. cancer society). There is also a formal hearing process on new rules and regulations. Stakeholders are given the chance to comment on both suggestions for new EU and national regulations."</i>	GOV DK
18.	<i>"Nutrition policy must safeguard different interests. To my mind top priority is the promotion of health and well-being of the population. At the same time the nutrition policy facilitates the task to advance the commercial interests. Employment in the agriculture and job industry should not be ignored either. And all these different interests are not always in harmony with each other. So there are some tension zones."</i>	SAB DE
19.	<i>"(...) There are things that can be changed in the policy and institutional context, at the national level, if a 'declaration of interest' were implemented for the stakeholders working in nutrition recommendations and public health. As it is already occurring at EFSA. (...) [if authorities] start asking for a declaration of interests at the meetings related to nutrients recommendations."</i>	GOV ES
20.	<i>"The role of general practitioners (...) And they are saying: 'all this extra vitamin D [that the SAB advices] is nonsense, with this you medicalize society. We are not going to do this, and we do not adopt our advice, because it is insufficiently substantiated [with evidence]. And there you are in a conflict between different lines of thought."</i>	SAB NL

cated as one of the major obstacles in developing and implementing nutrition policy (Table 4, #8).

Clear separation between risk management (*e.g.* balancing the risks and benefits, analysis of unintended consequences) which is in government hands and risk assessment – in SAB hands, was underlined by a few interviewees from northern countries (EN, NO, DK, DE) representing both government and SAB, as an important constituent improving nutrition policy throughout increasing objectivity (Table 4, #9, 10).

National capacity to deal with the topic

In a few countries, like CZ and EL, interviewees underlined that the lack of action in nutrition policy could be due to insufficient human resources that would be able to initiate, prepare and implement the policy (Table 4, #11). Also lack of clear task assignments (who is doing what) and devoted coordinator(s) was perceived as a barrier, especially in Greece. Those problems escalate in the context of time deficiency.

National legislation

In a few countries it was mentioned that national legislation was an important factor (and in some cases the only instrument) in micronutrient policy (Table 4, #12). According to informants, it was mostly applied for food re-formulation (*e.g.* obligatory fortification of table salt with iodine; margarine with vitamin D) and was perceived as a positive option, just opposite to the impact of EU legislation (“our own” decision *vs.* “we are forced”).

Engagement of stakeholders within nutrition problem

Substantial commitment of the different groups as well as individuals to nutrition policy, especially from government institutions were indicated as crucial determinant of its accomplishment. Key informants expressed that governments were quite interested and involved in nutrition policy in northern countries (EN, NO, DK, NL, DE), while in Central-Eastern (CZ, PL) as well as in Southern Europe (IT, ES, EL), this engagement could have been greater (Table 4, #13, 14). In Denmark, the commitment of the whole group of scientists in iodine policy was indicated as the main reason for its success. Individual (scientists, physicians) rather than the authorities’ initiatives were indicated as a trigger for nutrition policy development in EL, IT, ES and PL.

As some interviewees stated, also the engagement of consumer and industry groups, their desire to take part in *e.g.* consultations, shape the process of policy making, especially the choice of final option(s). Strong consumers’ interest in nutrition policy was indicated in DK, while in others *e.g.* NO, ES, CZ, IT, was suggested to be rather minimal (Table 4, #15). Engagement of industry, although derived from financial motives, was appreciated in some countries (*e.g.* PL, CZ, EL) as it gave resources and enabled to conduct nutrition studies.

Relationship between the stakeholders

In all ten countries, good cooperation among all actors involved in nutrition policy was underlined as a crucial determinant of its success (Table 4, #16). According to interviewees representing different stakeholders, cooperation among

governmental institutions, SAB, industry and NGOs was practised in NL, NO, DK and EN, whereas in some countries cooperation was less obvious and could be improved (CZ, PL), or was suggested to be completely missing (EL) (Table 4, #17). Consultation with industry was perceived as necessary if the chosen option is to change the micronutrient intake through the diet. The food producers should communicate if planned innovation is feasible and has an impact on the final price of the product.

On the other hand, conflicts of interests, lobbying were noticed as important constraints in nutrition policy making. Some kinds of ongoing lobbying, mostly from the economic organisations and industry, were indicated by informants from DE, EN, ES and PL (Table 4, #18). As key informants from ES and EL suggested, the cure for such situation may be following EFSA practices and applying “Declaration of Interest” to make the process more transparent and to ensure the independence of different stakeholders’ opinions (Table 4, #19).

A few interviewees stated that some problems may occur when the implementers *e.g.* physicians, do not agree with the recommended policy option, which also indicates the need to include those groups into the decision making process (Table 4, #20).

Summarising, there can be found some similarities among all countries and the patterns of differences between countries in perceiving factors influencing the micronutrient policy.

In all ten countries interviewees underlined that economic factors, (lack of) evidence of health outcome, engagement of all actors within nutrition policy and a good cooperation between them, experiences of other countries are important determinants for development of nutrition policy.

In Western Europe, the countries are more advanced in the development of nutrition policy as they have longer policy history *per se* and thus the history and tradition was a meaningful factor. Representatives from the Netherlands, Denmark, Norway and England stated that the European legislation is the main constraint for the nutrition policy at national level and that the clear separation between risk assessment and risk management is a crucial factor of its success. Besides, in the Netherlands and England, the political change was mentioned as an important factor in nutrition policy development.

In Poland and Czech Republic, there were indicated similar barriers, like insufficient monitoring of nutrition, nutritional and health status of different populations, insufficient human resources, thus the key informants appreciated the exterior sources of recommendations, especially from international authorities (WHO, FAO, EFSA, *etc.*). Also in both countries the engagement of food producers that financially support the nutritional surveys was perceived as important for micronutrient policy. In Greece, analogous elements were pointed out, but additionally administrative barriers (fragmentation of responsibilities, lack of coordination among several authorities), extensive bureaucracy and lack of political will were crucial for inaction in nutrition policy. In contrary to western countries, in Greece EU legislation was perceived positively as it imposes the need for law harmonisation and thus triggers the action.

DISCUSSION

Micronutrient nutrition policy depends on a combination of many factors, operates on many levels and includes many actors. High-quality, purpose-specific surveys [Margetts, 2004], preferably systematic reviews of randomised experiments [Nutley, 2002] are an important information source for making nutrition policy that allows the definition of nutritional goals for policymakers. The nutritional problem should be clearly linked with the health outcome and should be integrated into the overall health and other relevant policies of the government [Margetts, 2004] but as our study revealed it is not so obvious for many micronutrients and constitutes an important obstacle for taking any action. Our key informants underlined that the task of problem characterisation (risk assessment) lays within SAB and usually is made by government request. The way in which SAB are appointed, how their work is organised, and how problems are framed and solved, shapes their final conclusions [Timotijevic *et al.*, 2011]. This in turn will influence the policy-makers' decisions who may take up the scientific advice or give less weight to it compared to other factors [Dhonukshe-Rutten, 2013; Timotijevic *et al.*, 2011]. Besides, not only *what*, but also *in what way* is submitted to authorities, influences the process. The review of interview studies with policy-makers showed that personal contact between researchers and policy-makers was the most commonly mentioned facilitator while the absence of such personal contact was the most often recognised barrier to the use of research evidence in policy-making [Innvær, 2002]. Special training programmes for scientists in order to increase their communication and advocacy skills [Lawrence, 2007; Choi *et al.*, 2009] or invitation into the process "knowledge brokers" [Choi *et al.*, 2009] who will be a bridge between scientists and policy-makers may further help to introduce the scientific evidence into the process and to accomplish the policy goals.

The results of our study indicate that clear separation between risk assessment and risk management, according to EFSA model, is an important factor in improving the process. Our study and others [Timotijevic *et al.*, 2011] indicated that such an approach is in place mostly in the Northern Europe where advanced policy development is achieved [Trübswasser & Branca, 2009]. Such division is not always clear and a "grey area" may exist between them as at some point the evidence should be evaluated in a broader context, *i.e.* what is achievable in particular realities. According to the qualitative study on EFSA performance [Assessment..., 2004], the covering of "grey area" should be the priority for science and scientific panels to minimize the politics in the management process.

As the key informants pointed out in the present study, when preparing the risk management politicians consider, beside scientific-based evidence, many other factors mostly connected with the limited budgets, political conditions, timing and organizational capacity as well as existing regulations. Analysis of policy documents from 46 Member States of WHO European Region revealed that obstacles in implementing nutrition policies were mainly limited financial resources, lack of coordination, lack of political support and lack of expertise as well as insufficient legislation and lack

of scientific support because of lack of information from surveys [Trübswasser & Branca, 2009]. It is worth underlying that our study based on interviews with key informants confirms those results coming out of desk research. Another reality in nutrition policy is that it is usually a part of preventive services which in most countries receive a small proportion of the overall health budget [Margetts, 2004]. That is at least partially connected with the timing as the benefits of such policies might be seen in the long-term and the politicians need the successes for their political expedience in close future [Margetts, 2001].

Our interviewees stressed that changes in political situation and in ministries hampered the collaboration and the development of nutrition policy. Those reasons as well as the lack of coordination and lack of clearly defined responsibilities were reported to contribute to the lack of inter-sectorial collaboration in five out of 46 WHO European region countries [Trübswasser&Branca, 2009]. Political instability or high turnover of policy-making staff was also one of the reported barriers to the use of research evidence in policy-making [Innvær *et al.*, 2002].

Not only good cooperation among governmental sectors, but also with other groups of interests, especially scientists, industry, consumers, *etc.* is required for nutrition policy success. Our results from this qualitative study confirm data from desk research [Timotijevic *et al.*, 2010] that such partnership is still not applied in some European countries although it has been recommended by international authorities like WHO from the very beginning of nutrition policy development [FAO/WHO, 1992]. Again, it is more commonly practiced in the countries with longer history of democracy, like Norway, Denmark, United Kingdom, the Netherlands than in central or south Europe.

As our study revealed, involvement within the nutrition issues of groups or even individuals, especially governmental officials, scientists and consumers has a positive impact on the process. Lawrence [2007] suggested that coordinating responsibility for public health nutrition policy should be located at the central or cabinet level of government to increase the political will and accomplish a whole-government commitment to the policy. When the political will is missed the interest should be generated based on the national context, including potential "winners" and "losers" of recommended policy [Maetz & Balić, 2008].

Involvement of whole-government, community and other groups and sectors is recommended by WHO to implement successfully the Action Plans [FAO/WHO, 1992; WHO, 2008]. Active civil society is proposed to be a third important force, next to state and supply chain, in the relationship between food, the law and public health (the 'triangular dynamic' model) [Lang, 2006]. Improvement of the public involvement process can be achieved by accessible information, accountability, inclusiveness and openness and visibility of the government infrastructure [McGregor, 2003]. Well educated and informed consumers may be crucial determinants of policy outcomes [Boaz *et al.*, 2008]. Involvement of different stakeholders will also improve transparency of the process, which is nowadays perceived as a democratic right [Timotijevic *et al.*, 2010; McGregor, 2003].

According to our interviewees, food manufactures may have a dual influence on the nutrition policy. In some countries, where nutrition issues are underfinanced by state, the sponsoring of surveys by industry were well appreciated. On the other hand, lobbying from this group may push the nutrition policy into the wrong direction. Besides, they influence the nutrition policy by constant reformulation of their products to attract the (new) consumers and to gain the financial profits. The reformulation of products is a consequence of constant competition between food manufactures. These “new products” although catching consumers with health-related attributes are not always as healthy as the producers persuade them to be [Golan & Unnevehr, 2008]. International food companies administrate huge financial resources they spend on marketing and advertising products regardless of their healthiness; this creates a tension zone and contradiction with nutrition policies.

The key informants in the present study emphasised that liberal politics, occurring in many countries, is not in line with the state interference into the citizens lives, thus the role of consumers education and their conscious choices in a matter of nutrition and lifestyle is extremely important. In such priorities, the knowledge how consumers behave, what, when and why they choose is crucial for successful implementation of nutrition policy [Ozimek *et al.*, 2009]. Nevertheless, some protectionist principles should be undertaken by the state, otherwise the dietary choices will increasingly be set by marketplace and the enormous forces and subtle lobbyist of large commercial players [Lang & Rayner, 2007]. Review of applied policies to promote healthy eating in Europe indicated that the majority constituted the interventions supporting more informed choice (82 policies out of the total 121), especially public information campaigns (38 policies) and nutrition education for schoolchildren (31 policies) [Cappaci *et al.*, 2012].

STRENGTHS AND WEAKNESSES OF THE STUDY

The present qualitative study bridges information achieved from other surveys in the area of nutrition public health but as the results are based on the perceptions of people they might not represent the totality of policy making and would need the external validity in future research projects.

Some limitations of this study are the low responding rates in a few countries, like England, German, Italy and Spain as well as low representatives of some stakeholders (independent experts, NGO and industry).

CONCLUSION

The spectrum and weight of the factors influencing nutritional policy depends on (micro)nutrient, country, especially its “advanced status” in policy generally, and public health nutrition policy particularly, political environment, culture and socio-economic conditions as well as the point of view (who is expressing the opinion). Lack of money, lack of clear evidence on health outcome, lack of systematic monitoring of nutritional and health status as well as lack of political will were perceived as powerful constraints in nutrition policy. On the other hand, according to interviewees good cooperation

among stakeholders and their engagement, especially officials within nutrition problems, clear separation between risk assessment and risk management may improve nutrition policy.

One should be aware that the presented results are based on people’s opinions, which always includes a subjective bias. Nevertheless, authors believe that this work may help the policy-makers, as it is essential to have a sense of factors and forces that may influence nutrition policy.

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