

Romanian parents' social representations of children's vaccination

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The current research aimed to explore Romanian parents' social representations of vaccination in children and to identify how they fluctuate across gender and degree of reliance on information regarding this practice learned from media and, respectively, medical experts. The first study was conducted on a sample of 80 mothers and fathers of children who were supposed to receive the inactivated polio vaccine (IPV) later that year. The analysis of the data gathered upon the completion of the Associative Network Task (de Rosa, 2002) revealed that the nucleus of the social representation of vaccination comprised the evocations *health*, *conspiracy* and *immunization*, revealing a positive valence of this representation. The second study was conducted on another sample of 80 parents with the same characteristics as the previous sample and revealed that fathers had significantly more positive social representations of vaccination as compared to mothers, and that participants who relied more on doctors as a source of information on vaccination were significantly more likely to have more positive representations as compared to those who did not. In addition to this, parents who relied more on media sources had more negative representations of vaccination. Results are discussed in the light of their contribution to the social representations theory and of their implications for comprehending Romanians' motivations for adopting or rejecting this practice.

Keywords: social representation, vaccination, media, children, parents

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Over the last ten years, the public health authorities in Romania have ranked among their first priorities the alignment of the national epidemiological surveillance system to the regulations already existent in the European Union (World Health Organization Regional Office for Europe, 2002). Constantly improving the manner of surveying and controlling for potential disease outbreaks is considered to be one of the most needed national measures, thus making the prevention of transmissible diseases a paramount priority for each and every nation (Rafila & Pițigoi, 2014). One of the ways employed by public health authorities to prevent the spreading of communicable diseases is by ensuring the population's access to vaccination. However, recent research conducted on the Romanian population shows that vaccines may be met with a great deal of reluctance from the general public, which translated both into negative attitudes regarding this practice and into parents' refusal to allow their children to get vaccinated (e.g. Crăciun & Baban, 2012; Pența & Baban, 2013).

The context that best allows us to shed light on the beliefs, attitudes and positions regarding vaccination held by Romanian laypeople is the introduction of the vaccine against the human papillomavirus (HPV) in Eastern Europe. Many studies have since documented the possible causes and correlates of the Romanians' extremely low uptake rates of this vaccine, despite the two national campaigns offering free vaccination to girls aged 10-14 and despite the fact that Romania has the highest incidence of cervical cancer and the highest number of deaths caused by it (International Agency for Research on Cancer, 2008; World Health Organization, 2012). Crăciun and Baban (2012) revealed the main causes for which mothers refused their daughters' vaccination to be: fear of side effects of their daughters' being used as experimental subjects; their associating HPV vaccination to hidden interests of influential people to decrease the world population, as perpetrated by conspiracy theories; a fundamental lack of trust in the health system. Another example to that effect is found in Pența and Baban (2013), who investigated the

Romanians' constructions of the HPV vaccine by conducting a thematic analysis on 2240 on-line forum comments people made on this topic between 2007 and 2012. Their findings revealed that their parents were divided into three groups: *information seekers* (who did not have a specific opinion on the matter), *supporters* and *opponents of this vaccination*. The forum discussions analyzed were polarized around supporters and opponents of vaccination, which lead to antagonistic and aggressive dialogues that also included personal attacks with emotional overtones. Essentially, while the information seekers were merely trying to form an opinion as to the health benefits and risks associated to the HPV vaccine, its supporters and the opponents defended and provided arguments for their already formed representations on this type of vaccination. Thus, the central themes of its opponents' discourse focused on mainly anecdotally documented side effects of the vaccine, such as it being associated with high worldwide mortality and morbidity rates, and promoted the use of existing medical drugs (e.g. Cervugid) and alternative practices (e.g. diets, prayer) to prevent and treat cervical cancer. Meanwhile, the supporters of the vaccine centered their discourse around minimizing the side effects of the vaccine and explaining the severity of cancer. Also, the ones endorsing vaccination were more science-oriented and more prone to using evidence-based forms of medicine.

This portrayal of the Romanians' attitudes, beliefs and opinions regarding vaccination against HPV can be easily understood from the perspective of the Social Representations Theory (SRT). Particularly, one theoretical frameworks from SRT may be employed to best capture and comprehend this phenomenon, that is the socio-dynamic paradigmatic approach – namely, the organizing principles of individual position taking (Doise, Clemence, & Lorenzi-Cioldi, 1992). The socio-dynamic approach (Doise et al., 1992) highlights the social nature of social representations, arguing that sharing a representation is inherently tied to being part of a group and to being distinguished from individuals belonging to out-groups that hold different representations. This is why “social representations can be considered as organizing principles of symbolic relationships between individuals and groups” (Doise, Spini, & Clemence, 1999, p. 2). In accordance to this theory, Pența and Baban (2013) found that, for Romanians, their different social representations of the HPV vaccine functioned as the principle that organized the nature of their relationships, as these representations turned them into either advocates of this practice or skeptics regarding it. Thus, based on their attitudes for or against the vaccine and on their levels of trust in the health system (Gibson & Molan), they naturally fell into the two aforementioned categories. Moreover, the supporters were more science-oriented and trusted the health system more, while the opponents were not interested in scientific arguments and exhibited high levels of distrust toward the health system, positioning often identified when explaining social phenomena according to this paradigmatic approach (Sarrica & Wachelke, 2012). The transmission system of their social representations employed by the participants was propaganda, as both the opponents and the supporters of the vaccine sought “to impose uniformity on the representations and behaviours of the recipients of the communication” (de Rosa, 2012, p. 16), by using

manipulative tactics meant to discredit and dismiss the other group's representation. Such tactics were the appeal to ridicule (the supporters of the vaccine declared that they were fighting against obscurantism and primitivism, cheap philosophies and irrational mentalities relying on erroneous and unscientific information), aggressive personal attacks (“Dear madame, you have no cure!”) and categorizing the other group as condoning murder (the opponents of the vaccine claimed that the supporters were endorsing the murder of their own daughters by allowing them to get vaccinated) and being abnormal (the supporters of the vaccine stated that the vaccine was the only normal thing to do). Apparently, this situation is not without precedent, nor is it restricted to the Romanian people. In France, for instance, although the large majority declare they agree with the practice of vaccination and slightly over 50% of the general population considers that all vaccines should become mandatory (Baudier & Léon, 2006; Nicolay, Lévy-Bruhl, Fonteneau & Jauffret-Roustide, 2008), less than 40% of the children get vaccinated (Fonteneau, Guthmann, & Lévy-Bruhl, 2010). This highlights the existence of a discrepancy between attitudes and behaviours, which is argued to lie within people's fear of the potential side effects of vaccines (Taylor et al., 2002). Such fears are claimed to be the result of the insufficient information to which people have access in the context of ever-changing official policies that end up eliciting mistrust toward this practice from doctors themselves (Sardy et al., 2013).

Social representations of vaccination

Studies exploring people's beliefs and attitudes about vaccination have generated similar findings across cultures and nationalities (e.g. Mills, Jadad, Ross & Wilson, 2005; Newman et al., 2011; Sardy et al., 2013; Setbon & Raude, 2010). Sardy et al. (2013) have studied the social representations of vaccination on both laypeople and general doctors in France and found several similarities between these populations. Both doctors and laypeople considered children to be the main target of this practice, while also associating vaccination with economic interests of pharmaceutical industry, which was a source of distrust among the participants. Moreover, both populations seemed less interested in the scientific grounds for the administration of a certain vaccine than they were in its effectiveness in preventing a disease, which reveals an overall pragmatic orientation of their representations. The health benefits arising from the prophylactic function of vaccination constituted the central nucleus of the social representation of this practice for both groups, although the doctors had more positive representations as compared to laypeople and were less interested in the current controversies surrounding the side effects vaccines may have. Laypeople with children were especially prone to fearing the potential negative side-effects of vaccines, which is also supported by another study conducted in France in 2004 that found people were extremely scared of being injected with a new vaccine, while questioning whether the manufacturing of the product was safe (Institut national de prévention et d'éducation pour la santé – INPES, 2004).

Another study conducted this time on a population from Ontario, Canada, showed that when it came to vaccine trials for HIV, people's social representations were mainly construed around themes such as fear of the side

effects of the vaccine, of potentially unfair recruitment protocols, of enhanced risk for the trial participants and worries regarding informed consent (Newman et al., 2011). These results are similar to the ones found in France, where the aforementioned studies focused on vaccination in general. Thus, Newman et al. (2011) also revealed as central themes people's fear of side effects when it comes to vaccination and people's distrust of potential hidden interests on the part of the promoters of vaccines. Fear of side effects was also encountered on an English population of health workers regarding vaccination against influenza (Rachiotis et al., 2010; Smedley et al., 2007), while lack of trust in the medical system also emerged as a central theme in the attitudes toward HPV vaccination held by the population in Ohio Appalachia (Katz et al., 2009).

Given that children are the main target of vaccination (Sardy et al., 2013), a great proportion of the scientific literature investigating how society perceives this phenomenon is conducted on parents. For instance, in the controversies surrounding the HPV vaccination, parents were the main social actors, as they were the ones deciding whether their daughters would receive the vaccine or not. A review of several qualitative studies regarding parents' beliefs and attitudes toward vaccination showed that they associate vaccination with issues of harm, lack of trust and worries regarding access to this type of medicine (Mills et al., 2005). Representations of vaccines as being unsafe and ineffective, as well as negative beliefs regarding the health care system, which was perceived as untrustworthy, were also found by Brown et al. 2010 in their systematic review of the factors underlying parental decisions concerning vaccination. In Romania, mothers played a pivotal role in the family's decision to vaccinate their daughters and the arguments they employed to reach this decision were found to rely on the following themes: risks associated to the vaccine, their responsibility to ensure their daughters' future health and ability to reproduce, conspiracy theories, the belief that the vaccine was used as a part of a larger hidden experiment and the inefficiency of the health care system (Crăciun & Baban, 2012).

Study 1

The aim of this study is to investigate the structure and content of Romanian parents' social representations regarding their children's vaccination, and to highlight both the central elements pertaining to the nucleus and the elements pertaining to the peripheral zone.

Method

Participants

We aimed to choose a sample of participants for whom their children's vaccination was particularly salient. As such, we chose 40 fathers and, respectively, 40 mothers of children born in 2008, who are / will be 6 in 2014, because they were set to receive the inactivated polio vaccine (IPV) during the course of this year, according to the legislation in force (Romanian Ministry of Health, 2013). Our participants were aged 25 to 50 ($M = 37.29$, $S.D. = 7.68$), from Huși, Romania. Mothers' ages ranged from 27 to 50 ($M = 37.43$, $S.D. = 7.92$), while the ages of fathers ranged from 25 to 49 ($M = 37.15$, $S.D. = 7.53$).

Instruments

To identify the structure of our participants' social representations regarding their children's vaccination, we used the Associative Network Technique developed by de Rosa in 2002. This technique is a projective verbal one and it allows the exploration of "the content, structure, polarity and stereotyping dimension of the semantic field evoked by <<stimulus words>>" (de Rosa & Holman, 2011). First, participants are asked to write the first words of which they can think when reading the inductor expression, which in our case was "children's vaccination", and to mark in Arabic characters the order of the words produced. Then, each word is assigned a negative, positive or neutral valence by the participant, who also connects these words graphically among them, as he/she sees fit. Finally, the words are ranked according to the importance the participant believes they have in describing the stimulus word.

Previous research has shown that doctors hold more positive social representations of vaccination as compared to laypeople (Sardy et al., 2013), and that people who associated vaccination with the conspiracy theory according to which vaccines are a way of reducing the world's population reached this conclusion upon consulting Internet sources and / or televised programs (Crăciun & Baban, 2012). Therefore, we operationalized contact with these two sources as two direct questions that asked the participant to rate on a Likert type scale in 6 points ranging from 1 – Not at all to 6 – Very much how much they were exposed to these sources.

Procedure

Participants were asked to fill in a socio-demographic questionnaire which asked to state their age and gender, upon which they were presented with the Associative Network Technique. Finally, they filled in the items which asked them to state their main sources of information on vaccination: doctors or media (such as TV and Internet).

Results

We reduced the variability of the associations by using two criteria: synonymy and word families. According to DEX, all the words with the same meaning were represented by one linguistic label (e.g. we compiled under "side effects" the following: negative consequences, adverse reactions, adverse effects, bad effects etc.). The same method was employed for the words pertaining to the same word families; for example, we retained the term "immunization" for the terms "immunized", "to immunize", "immunizing" etc.

In order to derive the structure of the social representation of vaccination held by the parents who participated in our study, we analyzed the collected data in EVOC 2000, which revealed the findings presented in Table 1. We only presented the associations with a frequency higher than or equal to 5. The cutting points for the mean ranks and for the frequencies were 3.1 and, respectively, 10. The top left cell compiles the words that most likely belong to the core of the social representation, while the bottom right cell reveals the terms that most likely pertain to the periphery of the social representation, while the other two cells present evocations with an ambiguous status within the representation.

The total number of evocations was 571, of which 93 were different. Thus, the stereotyping index, (de Rosa, 2002), which is calculated according to the formula $x = [(2Y) - 1] / 100 * (-1)$, where Y is the total number of different terms / total number of words evoked * 100 was -0.32 for our evocations. The value of the stereotyping index may fluctuate between -1 and +1, where +1 is the maximum value of the stereotyping (de Rosa, 2002). Since our value is lower than 0, it shows that the degree of differentiation of the evocations we obtained was high, revealing increased diversity in the dictionary expressed by our participants in relation to children's vaccination.

Table 1: Structure of the free associations for the inductor phrase "children's vaccination"

Evocations for the inductor phrase "children's vaccination" (N = 80 participants)

		Mean rank	
		< 3.5	≥3.5
Frequency	≥10	conspiracy (12): 3.42 health (47): 2.45 immunization (39): 2.974	administration (10): 6.40 children (10): 6.200 disease (11): 4.55 doctor (22): 3.55 growth (10): 4.20 harm (12): 3.50 physical resistance (10): 3.60 prevention (16): 4.56 reactions (14): 4.14 risk (12): 3.58 safety (14): 3.64 side effects (44): 3.82 unsafe (10): 4.60
	<10	age (6):3.333	antibodies (8): 4.250 bed (6): 6.67 care (5): 8.00 compulsory (5): 6.00 cruelty (5): 6.60 development (5): 6.60 economic interests (8): 5.13 experiment (8): 4.13 fear (9): 5.00 fear of doctor (5): 4.60 hidden (5): 7.00 inefficient (7): 5.57 injection (9): 4.00 malpractice (5): 6.20 murder (8): 4.00 no stress (5): 4.80 physical development (7): 4.71 positive effects (8): 4.13 prayer (5): 4.40 precaution (5): 5.60 responsibility (5): 7.40 secret (9): 4.56 suspicion (9): 5.44 treatment (5): 3.60

The inductive power (number of elicited expressions / number of participants) for our sample of 80 participants was 7.14, which shows a relatively high breadth of the semantic corpus evoked by our participants, and thus, a decreased homogeneity in Romanian parents' discourse about children's vaccination (de Rosa & Holman, 2011).

The polarity index, calculated as (total number of positive words – total number of negative words) / total number of words (de Rosa, 2002) was 0.05, which means that most words were connotated positively. However, this value is very close to the inferior limit of the interval which describes positive connotations of the evocations (+0.4 to +1), which shows that, in fact, the number of positive evocations (286) and the number of negative evocations (259) are not very different. The neutrality index we obtained (-0.002) supported the fact that our evocations had a low neutrality, as the index was lower than -0.05 (de Rosa, 2002).

Study 2

We aimed to compare mothers' and fathers' social representations on this phenomenon and also the representations of people who collected the majority of information on this topic from medical professionals to the social representations of people who gathered data from other sources (e.g. the Internet, televised programmes).

Method

Participants

For this study as well we aimed to choose a sample of participants for whom their children's vaccination was particularly salient. As such, we again chose 40 fathers and, respectively, 40 mothers of children born in 2008, who are / will be 6 in 2014, because they were set to receive the inactivated polio vaccine (IPV) during the course of this year, according to the legislation in force (Romanian Ministry of Health, 2013). Our participants were aged 24 to 51 ($M = 36.9, S.D. = 7.84$), from Husi, Romania. Mothers' ages ranged from 24 to 51 ($M = 37.2, S.D. = 8.27$), while the ages of fathers ranged from 25 to 49 ($M = 36.6, S.D. = 7.48$).

Instruments

Based on the findings of Study 1 in which we explored the structure and content of our participants' social representations of children's vaccination, we constructed a questionnaire in which each of the associations composing the social representation of vaccination was transformed into a statement. For instance, for the central element "conspiracy" found in the nucleus of people's social representation of vaccination, the item "There is a conspiracy surrounding children's vaccination." was constructed. We applied the same procedure for each of the elements, our questionnaire being comprised of 28 items. Participants were asked to provide their answers on a Likert type scale ranging from 1 to 4, where 1 – total agreement and 4 – total disagreement.

Results

A pilot study was conducted on 30 participants in order to assess the reliability of our instrument, which was shown to be satisfactory at $\alpha = .84$. We then investigated the normality of the distributions of the total scores that participants obtained at the questionnaire evaluating their social representations of children's vaccination by performing a Shapiro-Wilk test, which showed that the total scores were significantly not normally distributed, $W = .97, p = .006$. Hence, we employed a series of robust

methods in R 3.0.2 in order to compare independent means as follows:

The effect of gender on social representations of children's vaccination

A test of independent means based on 20% trimming showed that there was a significant difference between men and women in the scores obtained at the questionnaire evaluating their social representations of children's vaccination, $T_y(60.10) = 9.71, p < .001$ (large-sized effect $r = .61$) results supported by the findings of a bootstrap test of independent M-estimators, $p < .001$. Thus, we may conclude that on average, men's social representations of children's vaccination ($M = 72.50, SD = 18.57$) were significantly more positive as compared to the women's social representations of children's vaccination ($M = 44.85, SD = 13.53$).

The effect of the amount of contact with doctors concerning vaccination on social representations of children's vaccination

In order to investigate this relationship, participants' scores on the item concerning how much they discussed vaccination with doctors were split into two categories, high contact and low contact, based on the value of the median ($Mdn = 2.5$). A test of independent means based on 20% trimming showed that there was a significant difference between people who discussed vaccination more with doctors and people who talked less with their doctors regarding this topic in the scores obtained at the questionnaire evaluating their social representations of children's vaccination, $T_y(30.70) = 2.89, p < .001$ (large-sized effect $r = .79$), results supported by the findings of a bootstrap test of independent M-estimators, $p = .005$. Thus, we may conclude that on average, people who received more information on vaccination from doctors ($M = 67.30, SD = 24.16$) had significantly more positive social representations of children's vaccination as compared to the ones who talked less to doctors about this issue ($M = 51.53, SD = 12.15$).

The effect of the amount of contact with media concerning vaccination on social representations of children's vaccination

In order to investigate this relationship, participants' scores on the item concerning how much information on vaccination they acquired from media sources were split into two categories, high contact and low contact, based on the value of the median ($Mdn = 2.5$). A test of independent means based on 20% trimming showed that there was a significant difference between people who got more information on vaccination from media sources and people who did not get as much information on vaccination from the media in the scores obtained at the questionnaire evaluating their social representations of children's vaccination, $T_y(40.36) = 7.83, p < .001$ (large-sized effect, $r = .60$), results supported by the findings of a bootstrap test of independent M-estimators, $p < .001$. Thus, we may conclude that on average, people who acquired more information on vaccination from media ($M = 71.82, SD = 13.43$) had significantly more negative social representations of children's vaccination as compared to the ones who acquired less information from the media on this topic ($M = 44.9, SD = 13$).

Two Mann-Whitney tests were conducted in order to investigate the relationships between gender and how much contact people had with doctors and, respectively, media sources regarding children's vaccination. Results were significant for media contact, $U = 546, p < .001$ and insignificant for doctor contact, $U = 1569, p = .208$. Thus, men ($Mdn = 3$) were more likely to have acquired less information about vaccination from media sources as compared to women ($Mdn = 2$), while both men ($Mdn = 1$) and women ($Mdn = 5$) acquired similar amounts of information on this topic from doctors.

Discussion

The issue of children's vaccination has aroused a fair amount of controversy among the Romanian general population; people largely situated themselves either pro this practice or against it, and let themselves guided by their positive or negative attitudes toward it in their decisions of whether to allow their children to be vaccinated (e.g. Crăciun & Baban, 2012; Pența & Baban, 2013). As this topic is currently a source of debate among the general public, and as children of six years old are set to be vaccinated in 2014 with the inactivated polio vaccine (Romanian Ministry of Health, 2013), we set out to explore their parents' social representations of vaccination, since this issue is particularly of relevance to them.

In our first study, we aimed to investigate parents' social representations of their children's vaccination. The results showed that the elements comprising the central nucleus of their social representation of vaccination were: *conspiracy, health and immunization*. As is evident, one of the core elements is suspicion; parents experience doubt towards the safety of vaccines, and worry that the intentions behind their administration may be questionable. There is fear surrounding the hypothesis that vaccines might be part of a conspiracy to decrease the world population in order to re-establish the equilibrium between the population and world resources available. Another two core elements which are related are *health and immunization*. Favourable attitudes on vaccination (the evaluative dimension of social representations, according to de Rosa, 2013) are based on the idea that they accomplish the function for which they were released on the market, that is, they prevent illness, promote health, and contain the spread of contagious illnesses. Moreover, they immunize children and favour their optimal physical development.

The peripheral zone contains both negative and positive associations, clearly delimiting the two radical positions people usually display on this topic. On the one hand, there are the negative social representations of vaccination, as illustrated by the terms *fear, hidden, inefficient, injection, malpractice, murder, cruelty, secret, suspicion, economic interests, precaution, prayer*. On the other hand, there were the positive social representations of vaccination, as showed by the evocations *antibodies, care, development, no stress, physical development, etc.* Supporters of vaccination regard this practice as safe, as a responsibility they have toward their children, as having benefits on one's health and leading toward their children's optimal development. Opponents of vaccination believe the opposite: that allowing one's children to get vaccinated means harming them, that vaccines are part of a conspiracy

and the substances they contain are harming. The latter group is also afraid of the economic interests into play when it comes to the marketing of vaccines – they suspect that the weight of the benefits may overcome any moral impediments that may arise to selling contaminated substances. Their fear is a product of suspicion, doubt and lack of trust toward the health system. The term *murder* was also used to describe the practice, this being an illustration of how strongly people endorse the legitimacy of the conspiracy theory in the matter of vaccination. In line with the findings presented by the Special Eurobarometer report (2007) on European social issues, over 65% of Romanians do not have trust in any political institutions, and this obviously contributes to the formation of people's negative reactions toward the products released by such institutions.

There were significant differences between men and women's positions on vaccines, women showing significantly stronger doubt and opposition toward the practice as compared to men, who had substantially more positive social representations on this topic. Namely, while men had social representations of vaccination as being a medical measure for maintaining health in the general public, women produced more evocations revealing fear, doubt, suspicion and distrust. Apparently, the arguments of the opponents of vaccination in this controversy raise more suspicion in women and infiltrate their social representations of vaccination more profoundly than in the case of men. One explanation for this may stem from the differences between men and women when it comes to risk (Booth & Nolen, 2009). Essentially, the controversy surrounding vaccination brings up the health risks that could be involved in having the procedure performed. All the suspicions raised in relation to the hypothesis of a conspiracy create significantly more risk aversion in women than in men, as women are naturally more sensitive to the dangers associated to a given risky choice.

Finally, our findings regarding the influence of participants' main sources of information on their social representations of vaccination were that people who obtained their information mainly via media sources (TV, Internet) had significantly more negative social representations of vaccination as compared to people who acquired little or no information from these sources. Furthermore, people who acquired information from a doctor regarding vaccination had more positive representations of vaccination as compared to those who got little or no information from a doctor on this topic. These findings are in line with the research of Sardy et al., (2013), who compared the differences between doctor's social representations of vaccination and patients' social representations on the topic on a French population, and found that patients are more worried about the potential negative effects of vaccination as compared to physicians. Since physicians are better informed in regard to the effects of vaccines, they tend to perceive them as doing more good than harm, and as such to consider the associated potential side effects as more marginal and minimal as compared to the benefits, thinking that the latter far outweigh the risks. Thus, people who obtain their information on vaccination from doctors are more likely to form an overall positive social representation on this phenomenon as compared to those who obtain little or no information from doctors. This is what we found to be true in our population: more

information from doctors was linked with more positive social representations on this phenomenon. In what regards participants who got their information mainly from media sources, the results were as expected: these participants held more negative social representations of vaccination as compared to participants who relied little or not at all on media sources.

Pența and Baban conducted a study in 2013 in which they investigated people's constructions of the HPV vaccine by analyzing forum comments people made on the topic in the period 2007-2012, and found that those comments were structured according to the two main opinions on the issue – either people were strongly for the practice or against it. As such, we expected that people who relied on these sources to have more suspicion toward vaccination, seeing as they would have been exposed to more virulently expressed points of view – both supporting and opposing it – but which would have increased their risk saliency and, in turn, created more reluctance. Future research should replicate our results using larger samples – we used a convenience sample, to which access was easy, seeing as the participants were all parents of kindergarten children. This is why these findings should be taken with prudence, since a wide degree of generalization would require a larger number of participants than the one we had in our studies.

Conclusions

Social Representations Theory has a long standing tradition of being employed in both the study of health and illness (e.g. de Rosa, 1987, 2012; Jodelet, 1989), and also in the study of the dynamics of social phenomena, which gain society significance when an already existing hegemonic social representation of a certain object (in this case, vaccination) into a polemic social representation, thus dividing society into new groups based on how they position themselves concerning the object of the representation (Ben-Asher, 2003). The social representation of vaccination used to be hegemonic in the sense that all groups and members of the society accepted this practice without questioning it; the factor that changed the status of the representation into a polemic one was the dissemination of different views on this topic and on medicine in general, which translated into the development of two groups: the one that continued to endorse and to employ traditional medicine and the one that prefers homeopathic, natural or spiritual remedies, as described by Penta and Baban in 2013 regarding the HPV vaccination. The conflicting relationships between these two groups reveal the transformation of the previously hegemonic social representation of vaccination into a polemic representation, because rivalry has risen between the groups, as described in the analysis of the forum discussions conducted by Penta and Baban in 2013.

The findings of the second study seem to suggest that the change which occurred in the social representation of vaccination on this population had as a consequence a shift in social practices as well. Thus, not all people turn to doctors or to medical references to get information regarding curative practices; women, for instance, are more likely than men to obtain knowledge about this issue from media sources, which probably leads them to be more reluctant concerning vaccinating their children. It may be

concluded that attitudes toward vaccination depend on the knowledge of the topic, as also shown by Lage (2012). In any case, people's motivations for (non)acceptance of vaccination can stem from a variety of sources, as revealed by Streefland, Chowdhury and Ramos-Jimenez in 1999 or by Paulussen, Hoekstra, Lanting, Buijs and Hirasing in 2006.

Regarding the limits of these two studies, as previously mentioned, future research should be conducted on larger samples of participants. Moreover, the samples employed in these studies were highly homogeneous, because all participants shared the same regional and cultural background. Hence, the term "Romanians" was employed in this article loosely and the findings should be interpreted while taking into account the fact that the samples are not representative of the entire Romanian population.

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