

Article

**Organ Donation in Romanian
Online Media**DOI: 10.47368/ejhc.2022.302
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CC BY 4.0**A Content Analysis****Oana A. Petre** , **Adriana Băban**

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Abstract

Mass media represents the primary source of information about organ donation for the general public. The present study explored the content of Romanian online media concerning organ donation. We conducted a content analysis of 313 media materials published online between October 2012 and October 2019 in Romanian. The coding categories were year of publication, media outlet, type of material, type of evidence, valence, topic, and proximity of the story. A semestral web-search was conducted between February 2016 and November 2019. The analysis revealed that the Romanian online coverage of organ donation was modest across time. Regarding the valence, results indicated that 57.2% of the materials presented organ donation in a positive way, 14.1% were neutral, 12.5% were negative, whereas 16.3% of the materials were mixed. Moreover, the valence of the materials varied across media outlets, proximity of the story and publication year. Promotion, information about organ donation and system were the topics that occurred most frequently, followed by events, policy, and legal categories. Findings provide insight into how media may shape people's opinions about organ donation. The study also contributes to understanding the Romanian organ donation macro-social environment and provides valuable information for practice.

Keywords

Organ donation, content analysis, online media, media analysis, Romania.

Findings from the organ donation research field show that most people generally have favourable attitudes towards organ donation (Morgan & Miller, 2002; Morgan et al., 2008; Tian, 2010). However, there is a significant gap between attitudes and behaviours, namely positive attitudes are not reflecting donor registration or consent for next-of-kin organ donation (Morgan et al., 2008; Falomir-Pichastor et al., 2013; Siegel et al., 2014). This inspired researchers to ask how the general public forms an opinion about organ donation. In many

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studies, participants named mass media as the most used and influential information source about organ donation (Feeley & Servoss, 2005; Feeley & Vincent, 2007; Morgan et al., 2005; Quick et al., 2007). This is not surprising since not many people have personal experience with the organ donation and transplantation process. Thus, organ donation represents a good example of a "second-hand reality" (Morgan et al., 2007).

Social representation theory (SRT, Moscovici, 1984) asserts that information from mass media about a new or mysterious phenomenon, which only few people can access directly, as for example organ donation, constitutes the first step in developing social representations and forming public opinion about that specific phenomenon (Flick, 1998; Moscovici, 1998). SRT provides an ideal framework for understanding the joint role of mass media, interpersonal communication and individuals' cognitions in shaping behaviours (Morgan, 2009). Thus, most researchers applying the SRT, usually start by examining the content and the nature of information regarding a particular phenomenon in the media (Moscovici & Hewstone, 1983). Consequently, analysing the media coverage of organ donation may provide insight into how social representations about organ donation are formed. Also, it may help to better understand the discrepancy between attitudes, intentions and behaviours concerning organ donation.

Organ Donation in Mass Media

A frame analysis study of organ donation of Australian print news found various frames used for organ donation, such as "doctors as messiahs", "doctors as vultures", "children as most deserving to be transplant recipients" (Maloney & Walker, 2000). Feeley and Vincent (2007) carried out a content analysis study of 715 American newspaper articles on organ and tissue donation. Regarding the newspaper articles' valence, the analysis revealed that 57% were positive, 29% were neutral, and 14% were negative. The most prominent topics were post-transplantation welfare and information about the organ shortage for transplantation. Another content analysis study conducted by Quick et al. (2009) reviewed three American television networks that had news coverage of organ donation between 1990 and 2005. Results indicated that the organ donation topic received modest exposure. However, the news was mostly positive, and the stories about living donors and deceased donors had approximately equal coverage. A subsequent content analysis study by Feeley et al. (2016), applied the theory of newsworthiness to examine newspaper stories published in the United States. The analysis showed that front-page, as well as longer articles, were more deviant regarding organ donation. Also, the negative stories were more likely to have front-page coverage and were high on significance and deviance. Moreover, stories about negative events concerning organ donation were more likely to be published in popular newspapers.

Compared with newspaper articles and television news, entertainment television programs were shown to present organ donation in a dramatically different way (Feeley & Vincent, 2007; Maloney & Walker, 2000; Morgan et al., 2007;). Entertainment television generally depicted fictionalised stories rather than factual events (Morgan et al., 2007). Also, most of the time, stories were presented in a narrative form, enabling a different type of cognitive processing where the audience becomes completely absorbed in the narrative (Green & Brock, 2000; Kellerman, 1984;). For instance, Morgan et al. (2007) used the framing theory to analyse the organ donation storylines depicted during entertainment television programs broadcasted on four networks, from 2004 to 2005. The results revealed two meta-frames, namely "the moral corruption of the powerful" and "organ donors are good people". The negative meta-frame was

more present than the positive one and included four secondary frames: "rich people can buy anything (including organs)"; "corruption in the medical system"; "undeserving or ungrateful recipients"; "donors are only sources of spare parts". This study illustrated that entertainment media often fuelled myths about organ donation. Another study by Morgan et al. (2005) investigated the interpersonal interactions of family dyads discussing organ donation. The study showed that the individuals who were against organ donation frequently cited arguments they had seen on entertainment television, saying that, although it is fiction, "there is always a kernel of truth" (Morgan et al., 2005).

Tian (2010) went one step further to explore the media framing of organ donation in the new communication field of Web 2.0, by analysing YouTube videos about organ donation. The study revealed that organ donation content on YouTube was mostly positively framed (95.8%). Results suggested that YouTube could be an efficient outlet for entertainment education in the organ donation field (Tian, 2010).

Organ Donation in Romania

Currently, Romania ranks at the bottom of the European ranking of deceased organ donor rates. The situation is similar for the living donor rate (Domínguez-Gil, 2020). Figure 1 presents the evolution of organ donor rates (i.e., for both deceased and living organ donors) in Romania over the last 20 years.

At present, Romania has an opt-in legislative system. In November 2007, the Romanian Parliament put forward a legislative initiative about changing the organ donation informed consent to presumed consent. The Senate Chamber of Parliament adopted the amendment. However, in May 2008, the Romanian Government rejected this legislative proposal and recommended better documentation, deliberation with the civil society and the implementation of a National Organ and Tissue Donor Registry (Grigoras et al., 2010). The amendment triggered a public debate, which was reflected and nourished by Romanian media. Grigoras and his colleagues (2010) assessed the public opinions expressed in the online Romanian media related to the proposed change. Their analysis indicated that Romanians were not prepared to accept an opt-out system at that moment, and, most likely, changing the legislation would not have improved the donation rate. The study highlighted that public attitudes about organ donation and transplantation are more influential than legislation.

According to a Health Ministerial decision from 02.02.2021, published by the National Transplantation Agency [NTA] (2021), there are currently only 36 institutions accredited for the identification and declaration of potential brain-dead donors for the organ/ tissues/ cells procurement for transplantation purpose across Romania. Compared to a previous report, the present list contains nine institutions fewer (e.g., the accreditation of some institutions was suspended or expired) (NTA, 2021). During the last five years, the Romanian Transplantation System activity was affected by several irregularities and scandals that drew the media's attention. Some of the most salient negative topics were: accusations concerning lack of transparency of criteria for organ allocation; violations in using public funds; irregularities regarding the accreditation and functioning of certain transplant centres; irregularities found in the administration of the National Transplant Register; a transplant surgeon accused of fraud and forming an organised crime group. The negative representation of organ donation and transplantation may have determined sceptical attitudes among the general public, reflected in the decreasing annual deceased organ donors rate since 2017.

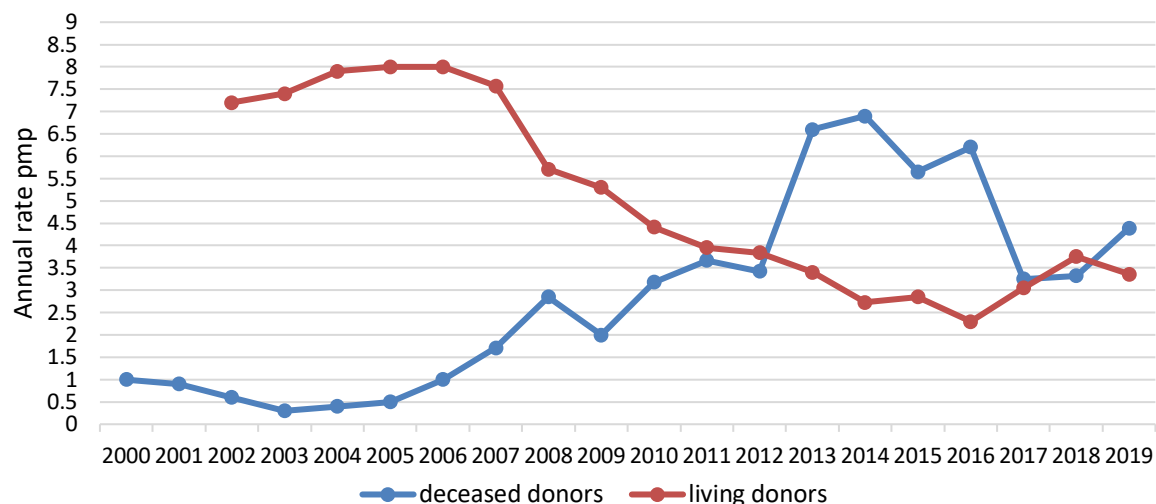


Figure 1. Organ Donor Rates Evolution in Romania Between 2000 and 2019

Note. Data for producing this chart were extracted from The International Registry of Organ Donation and Transplantation [IRODaT] (2020).

Concerning Romanians' reluctance to organ donation, a Eurobarometer survey from 2010 showed that only 31% of Romanians would be willing to donate their own organs after death compared with 55% at the European level (Eurobarometer 72.3, 2010). Also, only 34% of the Romanians include in the survey, would consent to donate the organs of a deceased family member (compared with the European average of 53%). As for the respondents' reasons for not wanting to donate, 48% of them could not state why they do not want to donate, and 17% of them invoked a religious reason (vs. 7% European average). Moreover, the research showed that just 18% of Romanians were aware of Romania's regulation about organ donation and transplantation (compared with 28% European average) (Eurobarometer 72.3, 2010). Another survey investigated Romanians' willingness to give next-of-kin consent and its determinant factors (Holman et al., 2013). Results showed that the belief in the possible reversibility of brain death, the belief in the need to maintain bodily integrity after death, the belief that the donor continues to live through the recipients and concerns about body mutilation after organ donation were significant predictors of unwillingness to give next-of-kin consent (Holman et al., 2013). These results suggest that there is a need to increase Romanians' knowledge and reduce misconceptions/ superstitious beliefs about organ donation in order to decrease their reluctance.

Moreover, there is still little information about the efficiency of organ donation promotion interventions in Romania. To our knowledge, no intervention type study on this topic was conducted until now in our country. Also, there were very few organ donation media campaigns organised in Romania. Therefore, in the absence of a coherent organ donation campaign, media remains the primary source of information on organ donation and transplantation for Romanians (Frunză et al., 2019).

The Present Study

The purpose of the present study was to explore the content of Romanian online media related to organ donation. The study is part of a larger formative research project for a social marketing campaign to promote post-mortem organ donation. Formative research represents a process

that informs the development of effective behaviour change programmes by gaining an understanding of the local context where the behaviours happen as well as the barriers and facilitators of the behaviour (Cunningham-Erves et al., 2020). This study may contribute to a better understanding of the macro-social factors (i.e., political, legal, religious, demographic, socio-cultural, economic) related to organ donation in Romania from the point of view of the stakeholders. This analysis of the macro-social environment constituted an essential step in developing effective and culturally tailored organ donation campaigns (Lauri, 2008).

We opted to focus on online media because its content and quality of the information might differ from that of traditional media. Nowadays, online media represents one of the top sources of news, reaching a huge audience. Web 2.0 allows everyone to share their opinions about any news or topic and even create their own content (Kamel Boulos & Wheeler, 2007). Consequently, this allows fake news to appear and spread much faster than in traditional media. Moreover, Web 2.0 also changed the field of health communication and health campaigns (Tian, 2010). The Internet became the main source of health-related information for an increasing number of people (Nazir & Soroya, 2021). For instance, Prestin et al. (2015) found that approximately 70% of people use the Internet as their first source for seeking health-related information.

Our choice for the online search was also motivated by the high percentage of Romanians who use the Internet. According to the National Institute of Statistics, in 2020, 91.3% of Romanian people between 16 and 74 years old had used the Internet during the last three months before the survey, and 79.1% of them used the Internet daily or almost daily. Among the study participants, 47.7% used it for reading online news websites newspapers and magazines, while 38.8% searched for health-related information (Iagar, 2021).

Taking all the above into consideration, our main research questions were:

RQ1: What is the valence of materials concerning organ donation?

RQ2: Does the valence of materials differ by the media outlet, the proximity of the story or year of publication?

RQ3: What organ donation topics are more likely to be prominently featured in Romanian online media?

RQ4: How is the distribution of the materials by topic over the years?

Method

Search Strategy and Data Collection

Utilizing the Google search engine, we used the term “organ donation” to search for media reports published online between October 2012 and October 2019 in Romanian. The rationale for selecting this time interval was to include the period when organ donation started to receive media attention following the Ministerial Order released in November 2012 regarding the foundation of the Romanian National Registry of organ donors, tissues and cells and the legislative proposal of implementing the electronic health card and introducing the organ donation option on it. Also, this time frame includes several important measures and events within the Romanian organ donation and transplantation system (for example, the accreditation of new organ procurement centres; problems with the functioning of some transplant centres; the illegal administration of the National Transplant Register by a private company; a reputed

kidney transplant surgeon suspected of embezzlement and creating an organised crime group). Therefore, this would allow us to examine the dynamic process and the trends in organ donation reporting.

We opted for Google search because this is the most popular search engine in Romania, with a market share of 97.53% in 2020 (StatCounter, 2021). Hence, it allowed us to select the most readily accessible information sources about organ donation for Romanians. For data analysis purposes, we chose to include the first 20 pages generated by Google because people, in general, are looking just at the results on the first pages (Eysenbach, 2002). The search was made semestral, between February 2016 and November 2019. We considered that a semestral search would reduce the risk of some materials becoming unavailable or being withdrawn. For instance, six web pages could not be accessed at the moment of search (i.e., the 404-error appeared, or it said that the page is not available anymore).

The following online materials were considered eligible: newspapers, magazines, informational websites, videos (audiovisual information) and blog pages. The informational websites category included: health-related websites, law-related websites, religious websites (e.g., the official site of the Romanian Patriarchate), websites of different public institutes (e.g., Health Ministry, National Transplantation Agency) and non-governmental associations (e.g., Association of Romanian Transplant Recipients' page). The "newspapers" and "magazines" categories contained both online versions of traditional publications and online-only newspapers/ magazines. The "video" category included local and national TV news, debate-type shows, interviews and documentaries about organ donation streamed on Romanian online TV stations (we also included the ones in a foreign language with Romanian subtitles) and two TV adverts promoting organ donation. Some of the video materials had a written description, but we coded them only as videos.

We excluded materials that: (1) were duplications ($n = 38$); (2) contained less than one paragraph about organ donation and transplantation ($n = 9$); (3) were not in Romanian language ($n = 5$); (4) were posted on online discussion forums ($n = 7$); (5) the links could not be accessed anymore ($n = 6$); (6) the publication date did not appear ($n = 8$). After applying these exclusion criteria, we removed 73 items and our final sample consisted of 313 materials.

Coding Plan

The coding instrument contained a set of codes used in previous media content analysis research (Feeley et al., 2016; Feeley & Vincent, 2007; Quick et al., 2009) and codes established by the authors after the independent examination of a subsample of 60 materials (drawn randomly from the final sample). The coding categories were: (1) year of publication, (2) media outlet (i.e., newspaper, magazine, informational websites, videos and blog pages), (3) type of material (i.e., informative, interview, argumentative, discussion) (See Appendix 1 for more details), (4) the valence of the material (namely, positive, neutral, negative and mixed), (5) the topic of material (was measured using the taxonomy described in Table 1), (6) the proximity of the story (i.e., national, local, international), (7) type of evidence (i.e., statistics, narratives or both). Regarding the coding of the material type, we decided based on the overall nature of the article. For instance, if the material had mainly the structure of a conversation where one participant asked questions and another provided answers regarding organ donation, it was coded only as "interview type", even if the provided answers presented factual information about organ donation or represented a stance regarding organ donation. Similarly, if a material

presented more sides of the organ donation issue, it was coded as “discussion”, even if it contained factual information about organ donation. The topic of the material category allowed the assigning of more than one code. It was measured dichotomously (namely, the topic appears vs. the topic does not appear) in order to provide a more nuanced analysis of the organ donation online content.

Table 1. The Topics of the Materials, Their Definitions and Illustrations

Topic	Definition	Illustration
Need	Refers to the overall view of the need for organs for transplantation purpose.	“More and more patients are on transplant waiting lists, while the number of donors has begun to decline.” (realitatea.net) “Thousands of patients are clinging to hope and waiting to be called for a transplant.” (digi.24.ro)
Promotion	The material promotes organ donation; encourages the idea of organ donation.	“Health specialists urge Romanians to register in the Register of Organ Donors, to give their consent during their lifetime, for organ procurement. Thus, when a person dies, he automatically becomes a donor, without the need for family consent.” (www.rri.ro)
Information	The material aims to educate and includes many facts about organ donation and transplantation.	“Tissue and/or organ transplantation means that complex medical activity that, for therapeutic purposes, replaces morphologically and functionally compromised human tissues and/or organs in the body of a human subject with other similar structures, proven to be healthy.” (romedic.ro)
Event	An event, meeting or celebration about organ donation.	“The Romanian Transplant Association (ATR) has launched the 2014 edition of the <<Say YES! Support organ donation!>>. The first city where the caravan stopped was Oradea.” (crisana.ro)
Recipient	A story about organ transplant recipient(s).	“After two heart attacks and his liver almost blocked by a rare blood disease, Răzvan was also on the same waiting list. Nearly a month ago, he received a liver from a brain-dead donor. <<I was so desperate to do it that I honestly didn't think about it; I wasn't scared. I was really laughing on the way to the operating room>>, he says.” (digi.24)
Policy	A material related to law, policy or bill on organ donation and transplantation (e.g., proposal, amendment, Ministerial Order).	“The Ministry of Health has publicly debated a draft order related to organ donation. Organ procurement could be realised without the consent of family members if during the lifetime the deceased person has expressed this option in writing. The measure is valid only on the basis of a notarial deed for registration in the National Register of Organ Donors.” (bucurestifm.ro)
System	The material presents information related to the organ donation and transplantation process, a transplant centre or organ procurement hospital.	“<<Approximately 38 hospitals in Romania are accredited for organ harvesting. "But only 11 work, that's the big problem. Doctors fail to identify donors>>, says Pantiş.” (stirileprotv.ro)

Table 1. The Topics of the Materials, Their Definitions and Illustrations (continued)

Altruism	The material refers to the voluntary and altruistic nature of the organ donation act.	“The transplant is actually a story about altruism, continuity, gratitude and high medical professionalism. Each of those involved in this story expresses his gratitude in different ways every day.” (crestemidei.ro) “In the last three years, at least 400 people have survived because of the courage, altruism and generosity of other people.” (agerpres.ro)
Donor	The material features the story of a deceased organ donor or donor's family.	“At the age of 31, when life is just beginning to decant its meanings, death can only mean something absurd and unjust. And yet, last night, at the Oradea County Emergency Clinical Hospital, the family of the young man who was brain dead decided that suffering could be changed into hope and death into life. So they agreed to donate his organs and save the lives of others on the scales.” (oradeaindirect.ro)
Waiting list	The material presents stories about the patient(s) on the transplant waiting list.	“For several weeks, Emilia Hurducaș has been on a waiting list that is growing day by day. She has several serious liver problems and she understands that another liver is her only salvation.” (digi24.ro)
Legal and ethical issues	The material discusses illegal actions and/ or ethical issues related to organ donation and transplantation	“The declaration of <<brain death>> or <<cardiac death>> - is made without our consent, taking into account only the evil instruments of modern medicine that have completely forgotten their oath[...] instead of saving and alleviating the pain of the suffering has chosen to kill.” (www.catacombeleortodoxiei.ro)
Religion	The material discusses religion in relation to organ donation and transplantation.	“It is a performance of medical science and practice that the Church blesses as long as, through transplantation, the crisis caused by the lack of other healing solutions is resolved and the normal life of one person is restored, without raising it to another: no one should be killed. for someone else to live.” (Patriarhia.ro)
Romania's case	The material present organ donation situation in Romania compared with other countries (e.g., organ donation rates).	“In 2016, Romania was in the penultimate place in terms of the number of donors per million inhabitants. This year, 102 kidneys, 46 liver, 3 lung and 5 heart transplants were performed, while 60 heart transplants were performed in Hungary earlier this year.” (radioromaniainternational.ro)
Other country	The material discusses organ donation and transplantation situation (e.g., system, policy) in other(s) country(s).	“A new law redefining organ donation has just entered into force in Switzerland.” (darulvietii.ro) “Spain has held the world record for organ donation for over 24 years” (miscareaderezistent.ro)
Other	The material does not belong to any of the other categories.	

Note: The taxonomy is an adapted version of the topic categories used by Feeley and colleagues (2016).

Procedure

Copies of the online materials were saved in a Word document for analysis purposes. The video materials were previously transcribed verbatim by the first author and included in the analysis. Each material was coded manually using a pen and paper approach. The analysis was conducted by two independent coders (namely, the first author and another coder) and audited by the second author, an experienced qualitative researcher. The other coder was trained in content analysis and was familiar with the organ donation field, but she was blind to the study's research questions. The two coders have practiced using a random subsample of 40 materials¹ from the final dataset in order to pre-test the coding scheme. Inter-coder reliability was calculated for this subsample (the Cohen's kappa coefficients were between .76 and 1), and the differences in interpretation were discussed until an agreement was reached. After the pre-test phase, the two coders independently analysed all materials, and the inter-coder reliability was calculated again. The Cohen's kappa coefficients ranged between .81 and 1 for all variables. The differences in coding were reviewed and discussed with the second author.

Data Analysis

The unit of analysis was each whole material (article) published online. The materials were analysed mainly for their manifest content. All statistics were performed using IBM SPSS Version 21.0.

Results

General Characteristics of the Sample

Three hundred and thirteen materials were included in the final analysis of the study. Regarding the year of publication, our data show two peaks in organ donation coverage (see Table 2). The first one was in 2016 when interest in organ donation increased due to the fact that the Romanian Transplant Recipients Association (a patients' association) celebrated 20 years of activity. On this occasion, the members declared July to be the "Organ Donors Month", organising events dedicated to the organ donors in twenty locations from Romania. Most of these events consisted of religious ceremonies for deceased organ donors, among other activities of raising awareness and promoting organ donation. The second peak was in 2018 when most materials discussed the dramatic decrease of the donors' rate in Romania.

As for the media outlet, 65.8% of the materials were published in newspapers, followed by websites (16.9%), magazines (6.4%), blogs (6.4%) and videos (4.5%). The majority of the materials had an informative structure (78.9%). Regarding the proximity of the story, 40.3% were national, 37.4% were at the local level, and 22.4% of materials presented an international story. Table 2 presents more information about these variables.

Valence of the Materials

Concerning the valence of the materials, results indicated that 57.2% ($n = 179$) of the materials were positive towards organ donation, 14.1% ($n = 44$) were neutral (i.e., the material contained neither approving nor disapproving statements about organ donation), 12.5% ($n = 39$) were negative, whereas 16.3% of the materials ($n = 51$) were mixed (i.e., included both approving and disapproving aspects concerning organ donation).

Valence in Relation to Media Outlet

A chi-square test for association was conducted between valence and media outlet. There was a statistically significant association between the two variables, $\chi^2(12) = 76.88, p < .001$. Table 3 presents the contingency table. To note that for this analysis, we have not met the assumption that all expected cell frequencies should be greater than 5. However, we decided to run the analysis based on the following information: "Although it is acceptable in larger contingency tables to have up to 20% of expected frequencies below 5, the result is a loss of statistical power (so, the test may fail to detect a genuine effect)" (Field, 2009, p. 692). We also tested the strength of association with Cramer's V coefficient, which is suitable for variables with more than two categories. There was a moderate association between the two variables, $\phi_c = .28, p < .001$.

Table 2. General Characteristics of the Sample

Variable	<i>N</i>	%
Year of publication		
2012*	24	7.7
2013	34	10.9
2014	46	14.7
2015	39	12.5
2016	54	17.3
2017	34	10.9
2018	59	18.8
2019*	23	7.3
Media outlet		
Newspaper	206	65.8
Magazine	20	6.4
Website	53	16.9
Video	14	4.5
Blog	20	6.4
Type of material		
Informative	247	78.9
Interview	28	8.9
Argumentative	35	11.2
Discussion	3	1
Type of evidence		
Statistics	114	36.4
Narratives	62	19.8
Statistics + narratives	137	43.8
Proximity of the story		
National	126	40.3
Local	117	37.4
International	70	22.4

Note: *N* = 313 material for each variable; *the search for 2012 and 2019 was not realised for the entire year.

Table 3. The Contingency Table Between Valence of the Material and Media Outlet

		Valence of the Material				Total	
		Positive	Neutral	Negative	Mixed		
Media outlet	Newspaper	Count	131	21	21	33	206
		% within media outlet	63.6%	10.2%	10.2%	16.0%	100.0%
		% within valence	73.2%	47.7%	53.8%	64.7%	65.8%
		% of Total	41.9%	6.7%	6.7%	10.5%	65.8%
	Magazine	Count	8	1	3	8	20
		% within media outlet	40.0%	5.0%	15.0%	40.0%	100.0%
		% within valence	4.5%	2.3%	7.7%	15.7%	6.4%
		% of Total	2.6%	0.3%	1.0%	2.6%	6.4%
	Informative website	Count	26	21	2	4	53
		% within media outlet	49.1%	39.6%	3.8%	7.5%	100.0%
		% within valence	14.5%	47.7%	5.1%	7.8%	16.9%
		% of Total	8.3%	6.7%	0.6%	1.3%	16.9%
Blog	Count	5	0	10	5	20	
	% within media outlet	25.0%	0.0%	50.0%	25.0%	100.0%	
	% within valence	2.8%	0.0%	25.6%	9.8%	6.4%	
	% of Total	1.6%	0.0%	3.2%	1.6%	6.4%	
Video	Count	9	1	3	1	14	
	% within media outlet	64.3%	7.1%	21.4%	7.1%	100.0%	
	% within valence	5.0%	2.3%	7.7%	2.0%	4.5%	
	% of Total	2.9%	0.3%	1.0%	0.3%	4.5%	
Total	Count	179	44	39	51	313	
	% within media outlet	57.2%	14.1%	12.5%	16.3%	100.0%	
	% within valence	100.0%	100.0%	100.0%	100.0%	100.0%	
	% of Total	57.2%	14.1%	12.5%	16.3%	100.0%	

Valence and Proximity of the Story

Another chi-square test was carried out between the valence of the material and the proximity of the story. We found a statistically significant association between the valence and the proximity of the story, $\chi^2(6) = 52.98, p < .001$. Table 4 presents the contingency table of the two variables. The Cramer's V coefficient value indicated a moderate association between the two variables, $\phi_c = .29, p < .001$.

Valence of the Materials Across the Years

We were also interested in how the valence of the materials varies across the years. As shown in Figure 2, in 2014, organ donation started to receive more online coverage compared with the previous years. Analysing the materials, we found that the increased media interest in organ donation took place following the start of distributing electronic health cards among the population. The organ donation option was supposed to be included on those cards. However, it was decided to drop this plan because of the negative reactions of the public. Most of the positive, neutral and mixed materials published during that period refer to these aspects. At the same time, the frequency of the negative materials increased. The analysis of these negative

materials by media outlet showed that from the total of 12 materials, three materials were from newspapers, six from blogs, two from magazines and one was a video. The majority of them depicted organ donation in a frightening, sensational way. For instance, some of these negative titles include: "The urgent problem of transplantation - brain-dead donors are alive" (graiulortodox.ro, 05.04.2014), "The brain death issue; donation or murder?" (cuvantulortodox.ro, 31.01.2014), "The brain death and organ donation's fraud" (feli-popescu.blogspot.com; 14.01.2014); "A brain dead patient woke up right during the surgery for organ procurement" (stirileprotv.ro; 9.07.2014); "China: when the human body becomes a commodity for organ transplantation" (epochtimes-romania.com, 19.10.2014).

The prevalence of negative materials increased in 2017 when 10 materials were identified. Most of these articles reiterated the negative aspects mentioned in 2014 and criticised the possibility of introducing the opt-out system in Romania. Some of the negative titles were: "The transplantation- we murder "the donors" to "save lives" (ortodoxiainfo.ro, 4.05.2017); "Is the 'nationalization of the organs' coming? 8 NGOs protested against the possible introduction of the 'opt-out system' arguing that it would encourage abuse and illegal organ trafficking. Silence does NOT mean agreement" (activenews.ro, 8.12.2017); "Introducing the opt-out system will favour human trafficking" (stiripentruviata.ro; 12.12.2017); "A new and false definition of death" (darulvietii.ro, 6.12.2017). Concerning the media outlet of these materials, five were from newspapers, two from blogs, one from a magazine, one from a video and one from an informational website. As for the proximity of the story, five materials were national and the other five were international.

In 2017 a considerable number of mixed materials were also published. Most of them discussed aspects related to the organ donation and transplantation system, illegal actions found in the system, policy (e.g., opt-out system) and the religious perspective. Examples of titles are: "Education for organ donation: a Romanian failure" (viata-medicala.ro, 19.05.2017); "Organ donation to be performed just between Orthodox people- opinion of a priest" (observator.ro, 27.08.2017); "France- all citizens are donors after death if they have not registered their refuse during their lifetime" (cursdeguvernare.ro, 4.1.2017); "No liver transplantation at Sf. Maria Centre in 2017! Official data: 'donors in Romania have decreased to one third compared to 2016'- Why do families no longer consent for organ donation?" (tolo.ro, 12.04.2017).

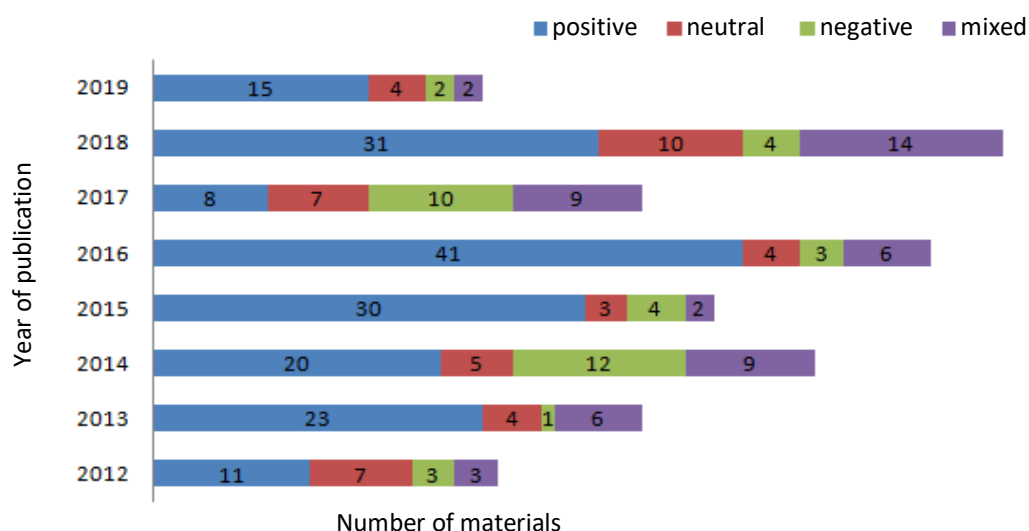


Figure 2. Distribution of the Materials by Valence over the Years

Table 4. The Contingency Table Between Valence of the Material and the Proximity of the Story

		Valence of the Material				Total	
		Positive	Neutral	Negative	Mixed		
Proximity of the story	National	Count	61	26	11	28	126
		% within proximity	48.4%	20.6%	8.7%	22.2%	100.0%
		% within valence	34.1%	59.1%	28.2%	54.9%	40.3%
		% of Total	19.5%	8.3%	3.5%	8.9%	40.3%
	Local	Count	90	8	6	13	117
		% within proximity	76.9%	6.8%	5.1%	11.1%	100.0%
		% within valence	50.3%	18.2%	15.4%	25.5%	37.4%
		% of Total	28.8%	2.6%	1.9%	4.2%	37.4%
	International	Count	28	10	22	10	70
		% within proximity	40.0%	14.3%	31.4%	14.3%	100.0%
		% within valence	15.6%	22.7%	56.4%	19.6%	22.4%
		% of Total	8.9%	3.2%	7.0%	3.2%	22.4%
Total	Count	179	44	39	51	313	
	% within proximity	57.2%	14.1%	12.5%	16.3%	100.0%	
	% within valence	100.0%	100.0%	100.0%	100.0%	100.0%	
	% of Total	57.2%	14.1%	12.5%	16.3%	100.0%	

Regarding the positive materials, Figure 1 illustrates a peak reached in 2016. As mentioned earlier, in 2016, an ample campaign on "Organ Donors Month" was carried out in 20 Romanian localities. Examples of titles for positive materials are: "July - the month of the organ donor; religious ceremonies will be organized in 20 localities" (www.agerpres.ro, 24.06.2016); "The campaign: <<Say YES! Supports organ donation>> arrived in Calarasi" (observatorcl.info, 15.11.2016); "The first organ procurement at the Moinesti Municipal Emergency Hospital" (desteptarea.ro, 29.03.2016); "Religious ceremony for organ donors in Cluj" (monitorulcj.ro, 28.07.2016). However, most of these materials had local coverage.

Neutral materials were more prevalent in 2018. These articles generally provided facts about organ donation, information related to the organ donation system and policy or the need for organs. One example of a neutral valence material is the following title: "New organ transplant law: Private centres could receive funding like the public ones" (stirileprotv.ro, 6.06.2018).

Proximity of the Story Across the Years

In addition, Figure 3 presents the distribution of materials by the proximity of the story across the years to better contextualise the data and understand the reporting trends. Results indicated that during the landmark years for organ donation (i.e., when a legislative measure or another important event concerning organ donation and transplantation happened), materials depicted more national or international stories and these were published more in media outlets with national coverage. For instance, in 2012, the Ministerial Order of November 2012 regarding the founding of the Romanian National Registry of organ donors, tissues and cells was issued. In 2014, the distribution of electronic cards started. The year 2017 was marked by some scandals and irregularities regarding the organ donation and transplantation system (e.g., allegations of bribery and organ trafficking involving a reputed kidney transplant surgeon,

problems with the accreditation of a pulmonary transplantation centre). In 2018 a new scandal regarding organ donation and transplantation was the focus of media attention. The Directorate for Investigating Organized Crime and Terrorism [DIICOT] examined the dysfunctions that appeared at the National Transplant Register (i.e., the National Register for Transplantation was administered for several years by a private company). Moreover, in 2017 and 2018, organ donation became more prominent in the media because of the considerable decrease in organ donation rates.

Topics of the Materials and Their Valence

Further, we were interested in what topics were more prominently covered in the materials. Stories about the transplantation system, organ donation promotion and information were the most common topics (see Table 5). Materials about events, policy, legal and ethical issues were also frequent. The "Other" category included materials about living donation ($n = 4$), incentives for living donors or deceased donors' families ($n = 9$), celebrities that are organ donors/recipients or involved in public organ donation campaigns ($n = 7$), cellular memory and the transfer of characteristics from donor to recipient ($n = 2$), public opinion about organ donation ($n = 3$), debunking organ donation myths ($n = 6$) and advancement of medical techniques in the transplantation field (e.g., creating livers from stem cells) ($n = 2$).

When adding the emotional valence dimension to the analysis, the results indicated that most of the positive materials were related to organ donation promotion, events, information and the transplantation system. Regarding materials with a negative valence, the most frequent were those from the legal and ethical issues category, followed by the "Other" and system categories. The mixed materials depicted more stories about the system and legal and ethical issues, whereas the neutral materials contained more stories related to policy and informative facts about organ donation (Table 5).

Table 5. Frequency of Topic Categories

Topic	<i>f</i>	Positive	Neutral	Negative	Mixed
Need	60	40	4	2	14
Promotion	93	88	1	0	4
Information	90	57	19	2	12
Event	82	78	3	0	1
Recipient	43	36	1	0	6
Policy	78	33	29	5	11
System	117	66	17	9	25
Altruism	24	18	0	0	6
Donor	48	30	4	5	9
Waiting list	28	22	1	1	4
Legal and ethical issues	67	5	2	38	22
Religion	38	19	0	6	13
Romania's case	40	25	3	2	10
Other country	18	6	3	6	3
Other	33	13	1	10	9

Note: *f* = total frequency of the category; Positive = number of materials coded as positive within the category; Neutral = number of materials coded as neutral within the category; Negative = number of materials coded as negative within the category; Mixed = number of materials coded as mixed within the category.

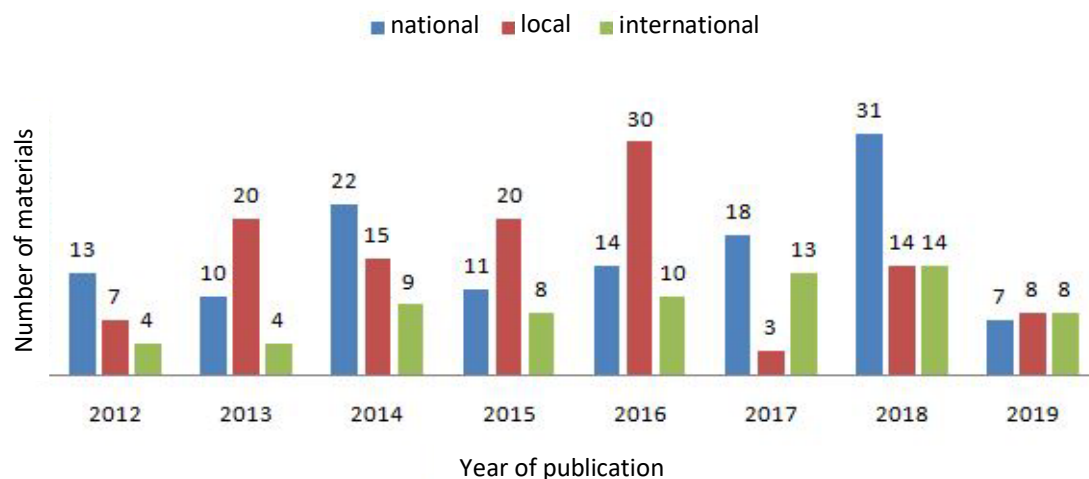


Figure 3. Proximity of the Stories over the Years

Topics of the Materials Across the Years

To gain a better understanding of the trends and the dynamic process depicted in organ donation reporting, we also analysed the topics contained within the materials across the years (see Table 6). Thus, in 2012 the policy category was most prevalent and included eight materials. In 2013, stories related to events ($n = 11$) and promotion ($n = 10$) occurred most frequently. In 2014, legal and ethical issues stories ($n = 18$) were more prominently featured. During 2015 more materials covered promotion ($n = 18$) and events ($n = 17$). Similarly, in 2016 most materials depicted stories about events ($n = 27$) and promotion ($n = 26$). In 2017 the most prominent stories were about the system ($n = 16$), policy ($n = 14$) and legal and ethical issues ($n = 13$). In 2018, results indicated that the materials about the system ($n = 36$) and need for organs ($n = 28$) occurred most frequently. As for 2019, the information category was the most prominent.

Table 6. Topic of the Materials Over the Years

Topic	2012	2013	2014	2015	2016	2017	2018	2019
Need	2	4	5	6	6	4	28	7
Promotion	2	10	11	18	26	5	18	2
Information	6	9	13	12	12	8	18	12
Event	3	11	8	17	27	3	9	4
Recipient	1	3	3	5	17	2	9	3
Policy	8	9	11	3	10	14	17	6
System	6	8	13	8	23	16	36	7
Altruism	4	3	3	2	5	1	5	1
Donor	1	2	4	6	9	4	19	3
Waiting list	0	0	1	4	3	3	13	4
Legal and ethical issues	3	5	18	6	6	13	14	2
Religion	4	6	8	3	5	4	6	2
Romania's case	3	5	9	6	5	4	6	2
Other country	1	0	2	1	3	5	4	2
Other	6	3	10	6	2	1	3	2

Other Mentions

The analysis revealed that Romanian online coverage of organ donation was modest across time ($N = 313$). Also, we noticed an interesting aspect related to the duplicated materials that were eliminated from the analysis, namely these were more likely to have a negative valence. For instance, the material with the title "The brain death and organ donation's fraud" (feli-popescu.blogspot.com; 14.01.2014), which depicts organ donation as extremely negative and in a frightening way, was repeatedly distributed. Although we did not have an explicit aim to examine the accuracy and validity of the content because some of the information presented in materials exceeded our expertise (e.g., many negative materials were discussing medical aspects about brain death, what happens with the organ donor during organ procurement). Occasionally, we encountered obviously inaccurate, misleading content. For instance, in more than 15 materials, some even stemming from newspapers with national coverage, brain death was confused with clinical death or coma. Other misinforming materials presented stories about organ trafficking that were denied by the Romanian police.

Discussion

The deceased organ donor rates from the last few years place Romania at the bottom of the European ranking (Domínguez-Gil, 2020). Moreover, according to the Romanian National Transplant Agency [NTA] (2020), between 2012 and 2019, 455 potentially eligible deceased organ donors were lost due to family refusal to consent. Meanwhile, the patients' waiting lists for transplantation are increasing every day. For instance, only in 2019, 816 new patients were added to the waiting lists for solid organ transplantation (NTA, 2020). Given Romania's organ shortage crisis, media coverage surrounding organ donation is of particular interest. Therefore, this study sought to provide an overview of the organ donation representation in the Romanian online media. Next, we will discuss the main results in relation to our research questions.

RQ1 addressed the valence of materials about organ donation. Our analysis indicated that most of the materials were positive (57.2%), 14.1% were neutral, 12.5% were negative, and 16.3% were mixed. The percentage of positive materials is similar to the one reported by Feeley and Vincent (2007) for the US newsprint media (57%), where they found a slightly higher percentage of negative articles (14%). However, the results need to be compared with caution because they did not include in their analysis the mixed-valence category (i.e., materials with both approving and disapproving ideas regarding organ donation). Also, our analysis indicated that many negative materials appeared as duplications and were not included in the final dataset. Therefore, Romanian media users may be exposed to more negative organ donation materials than reflected by the actual reported percentage. Furthermore, the impact of reading a positive, neutral, negative or mixed material about organ donation is most likely not the same for all readers. The negative messages about organ donation might have a more powerful impact than the positive or neutral ones, congruent with the psychological principle of "bad is stronger than good" that was demonstrated across a variety of situations (Baumeister et al., 2001).

RQ2 asked if the valence of the organ donation materials differed by media outlet, the proximity of the story and the year when it was published. Regarding the media outlet, our analysis indicated a tendency, especially for blogs, to represent organ donation more negatively. These materials tended to be very long, quoted different doctors' opinions and

testimonials, used medical terminology and evoked vivid images of the organ donation procurement process, that seemed highly credible but also instilled a strong sense of fear.

As for the proximity of the story, results indicated that local stories about donation were more positive. In contrast, the national or international ones were mostly negative. These results are in line with the findings of Feeley and colleagues (2016). Moreover, their analysis also showed that the national and international stories were more likely to have front-page coverage compared to the local ones. This happened most likely because of the sensational or deviant character of these national and international stories (Feeley et al., 2016). However, we were not able to properly test this hypothesis in our study because we focused only on online media.

The analysis also showed some variations in the valence of materials by time frame. For example, between 2014 and 2017, organ donation coverage was more negative compared to the other years. The negative pattern from 2014 corresponded with the distribution of electronic health cards in the population that included the question about the organ donation option. It is possible that, given the Romanians' mistrust in the health system and government, the introduction of organ donor status on this card may have increased the suspicion and fear concerning organ donation. Indeed, public reactions were so negative that the authorities abandoned this action shortly after it had been introduced. In 2017, some scandals and irregularities within the organ donation and transplantation system made the organ donation topic more salient and negative. Considering that donor rates dropped, this negative representation of organ donation may have decreased public confidence in the transplantation system and increased doubts about organ donation (IRODaT, 2020). However, this is just a supposition based on the authorities' media declarations and previous studies showing an influence of negative reporting on public attitudes toward organ donation and willingness to become a donor (Maloney & Walker, 2002; Morgan et al., 2005). Our study did not test any causal relationship between media representation and the organ donors' rates.

RQ3 inquired what organ donation topics were more prominently featured in Romanian online media. Findings indicated that materials about the transplantation system, promotion and information about organ donation were the categories that occurred most frequently, followed by events, policy and legal and ethical issues. The majority of these materials included both statistics and narratives (namely, individual cases of donors and their families, recipients and patients on the waiting list for an organ transplant). Using both statistical and narrative evidence in organ donation messages may be a more efficient strategy, given the contradictory findings of their respective persuasive effect. For instance, Kopfman et al. (1998) indicated that statistical evidence produces a greater impact than narratives. However, Feeley et al. (2006) replicated this study and found that narratives have exceeded the statistical evidence.

RQ4 was about the distribution of the materials by topic across the years in order to better understand the dynamic process in organ donation reporting. Results indicated that during the years when a legislative measure was proposed/ implemented or some actions took place in the organ donation and transplantation system (e.g., the activity of a centre of transplantation was suspended or a centre was accredited) the policy, system or legal and ethical issues categories were most prevalent. Also, these materials depicted more national or international stories and were mostly published in media outlets with national coverage. In the years when no major action, especially of political nature, took place in the organ donation and transplantation field, stories related to promotion, events and information occurred most frequently. Conversely, these were more likely to present local stories and to be published in local coverage media.

However, given the nature of online reading materials, the readership is not limited to only the region of that particular media outlet.

Some other findings from our analysis need to be mentioned. Firstly, although we did not have a research question about the accuracy and validity of the information because some of these were exceeding our expertise or were very difficult to verify (e.g., stories and anecdotes regarding organ donation procurement process, brain dead patients, how deceased donors are reacting when the organs are removed), we encountered materials with obviously inaccurate and misinforming content. For instance, we found some materials depicting a story about a black ambulance that is stealing children for organ traffic purpose. This myth circulated for years in Romania without any evidence, fuelling public fears and mistrust in organ donation. Some materials from our dataset denied this fake news. However, we consider that further media actions are needed in order to correct such information (e.g., trying to recurrently and openly debunk the myths in national coverage media outlet, making the organ donation procurement process clearer for the public, persistently reporting the fake news materials). The fuelling of fears and doubts may reduce public willingness to donate or discourage next-of-kin consent for organ donation, and indirectly, decrease the survival chances of the patients from transplantation waiting lists. As Morgan et al. (2005) showed, these organ donation myths have an impact on people's perception of organ donation even when they acknowledge their fictional nature. The thought that "there is a kernel of truth" triggers uncertainty and resistance towards the idea of registering as an organ donor.

Another example of inaccurate content was using the clinical death or coma terms instead of brain death when presenting information about deceased organ donors. This is a critical mistake and it suggests the necessity of increasing the media rigour in documentation and transmission of information about organ donation. This also represents an alarm signal for those responsible for scientific education (e.g., doctors, psychologists) to get more involved in influencing/ forming the organ donation perspective offered by media. Media represents one of the best opportunities for educating the general public about organ donation (Matesanz, 2002). Education involves responsibility, and thus, it is essential to offer accurate, evidence-based information. In this context, a better collaboration and communication between media, health authorities and public health researchers is needed.

Moreover, based on the overview provided by our analysis, it is presumptive to say that there were moments when the Romanian media influenced the legislative measures concerning organ donation registration. For instance, when the organ donor option was introduced on the health card, the public reactions were so adverse that the authorities abandoned this plan. A possible explanation for this negative outcome may be the inefficient communication between officials and media representatives at that time.

Our study has some limitations that warrant attention. First, we only used the "organ donation" search term to identify the media content. We opted for this approach because it allowed us to investigate the type of content that an individual who is actively seeking out information about organ donation will be exposed to. Second, we focused only on the Google search engine. However, this decision was based on the overwhelming popularity of the Google search engine among Romanians (StatCounter, 2021). We consider that using other search engines would not change the results.

The strengths of the current study comprise the inclusion of different media outlet materials in the data analysis. Using this approach offered the opportunity to understand the experience of an Internet user interested in the organ donation phenomenon. It provided a complex picture

of the variety of sometimes contrasting messages, that are covered online. At the same time, it offered a possible explanation for the different general public representations of organ donation. The inclusion of different media outlets materials also contributes to a better understanding of the Romanian organ donation macro-social environment (i.e., political, legal, religious, demographic, socio-cultural, economic), and brings valuable insight for formative research. The organ donation context of each country is shaped by the health system, the religious and legislative context, cultural particularities and country specific social representations (Alsalem et al., 2020). Thus, culturally based insight-oriented studies represent a prerequisite for developing suitable, insightful and achievable promotion campaigns for a certain target population (Brennan et al., 2014).

In conclusion, this research provides an overview of organ donation representation in the Romanian online media. The results of scanning media materials across seven years show the paucity of references about organ donation. Despite the predominant positive tone, the communication is rather dominated by a background characterised by confusion and ignorance, sometimes even resembling fake news. Thus, the study results provide important information for policymakers concerning where and how they could intervene to clarify and increase the persuasive power of media messages. Additionally, results describe how landmark social events (such as publicly exposed irregularities in the Romanian donation and transplant system or deficiencies in the organ donation card distribution) influence attitudes concerning the organ donation topic. However, the research method allows only a speculative answer regarding this relationship. Future studies require the use of experimental methods to examine the impact of exposure to different materials and organ donation frames. Another important future research direction may be to conduct a more in-depth analysis of media content, using, for example, social representations theory or framing theory as the research framework.

Note

1. Six materials overlapped with those from the subsample used to establish the codebook.

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