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# The ongoing and contentious coverage of abortion in a progressive context: a long-term cross-outlet assessment of Dutch abortion news (2000–2022)

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## ABSTRACT

Utilising automated content analysis with transformer-based topic modelling (BERTopic), this study examines cross-outlet variation in volume and topics over two decades (2000–2022) of abortion coverage in seven major daily newspapers in the Netherlands. Our findings reveal an ongoing coverage of abortion. Volume of coverage was notably highest in religious newspapers, indicating that these newspapers constitute a prominent voice in Dutch abortion debate. We discerned four distinct frames used in abortion news coverage. The first emphasised political developments as well as protest and advocacy related to abortion, framing the issue as a controversial political and moral topic. The second emphasised uncommon and problematic aspects of abortion, neglecting to present it as a commonplace and safe reproductive healthcare procedure. Two other frames seek to undermine women's decision-making agency: the marginalisation of women's personal perspectives; and the highlighting of prerequisites for abortion care. The media's emphasis on a hierarchy of deservedness may consequently reduce public support for particular reasons for choosing abortion. Overall, our findings show that abortion remains a regularly covered and contentious issue, even amidst progressive legislation. This study highlights the need for balanced reporting that engages with women's diverse personal experiences and perspectives.

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Abortion; media; framing; topic modelling; news attention

## Introduction

This article studies Dutch newspaper coverage on abortion over the last two decades. News coverage plays a key role in the tripartite communication relationship between media, the public and politics. It shapes political as well as public agendas and perceptions about important societal subjects such as abortion (Valenzuela and McCombs 2019). However, the impact of news media in shaping public opinion on abortion

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remains underexplored in the Netherlands, a country which has had progressive abortion legislation since 1984.

Abortion is accessible in the Netherlands at up to 24 weeks gestation,<sup>1</sup> free of charge for legal residents or workers. Notably, the country's incidence rate of abortion is among the world's lowest (2015–2019):<sup>2</sup> at 8.7 per 1000 women (Health and Youth Care Inspectorate 2021) compared to 39 per 1000 women worldwide (Bearak et al. 2020). Nonetheless, abortion remains a subject of considerable debate in the Netherlands. Ongoing initiatives aim to improve abortion access, such as abolishing the mandatory period of reflection. However, an anti-abortion movement persists, employing tactics such as distributing plastic fetuses and staging protests near clinics (Burgh et al. 2021). Internationally, recent years have witnessed significant changes in abortion rights, such as Argentina's legalisation decriminalising abortion, Poland's introduction of severe restrictions on abortion, and the US Supreme Court's (SCOTUS) overturning of federal abortion rights, with substantial global impact (Ekerin et al. 2023; Grabowski and Damavandi 2022; Tongue 2024).

Previous research has highlighted how particular historical contexts, such as Soviet-era politics in the Czech Republic (Dudová 2010), the Communist legacy in Romania (Kirkham 2013), and the influence of the Catholic Church in Uganda (Larsson et al. 2015), shape abortion discourse. Furthermore, research has highlighted the relationship between media framing and a country's political climate, for example in the battle over abortion rights in the USA (Woodruff 2019) and in political shifts surrounding the end of Apartheid in South Africa (Macleod and Feltham-King 2012).

In this paper, we build on insights from previous research that primarily focused on contexts that at the time had limited or no access to abortion healthcare, including the Czech Republic, Uganda, South Africa, Ireland, and Mexico (Dudová 2010; Larsson et al. 2015; Macleod and Feltham-King 2012; McDonnell and Murphy 2019; Taracena 2002). In three countries—Romania, the UK, and the USA (Kirkham 2013; Purcell, Hilton, and McDavid 2014; Woodruff 2019)—abortion was available on request but more restricted compared to the Netherlands, including earlier gestational limits. We seek to expand current knowledge by focussing on the progressive Dutch context. In addition, an innovative aspect of our study is the use of automated content analysis with topic modelling, allowing us to analyse a larger body of articles, extract more topics, and identify variations between newspaper categories (DiMaggio, Nag, and Blei 2013).

Our study identifies factors in Dutch newspaper coverage that shape public opinion on abortion. Past studies have highlighted the media's pivotal role in shaping societal and political debate on this topic. For instance, media coverage of Savita Halappanavar's death in Ireland in 2012, who was denied an abortion while under medical care for a miscarrying pregnancy. Despite public protest, overall media framed it as an political issue that could bring down the government (McDonnell and Murphy 2019). This framing helped contribute to the maintenance of conservative abortion laws in Ireland until the constitutional ban was lifted six years later in 2018 due to long-standing grassroots efforts mostly by women (Fitzsimons 2021). Conversely, extensive media attention to a minor's pregnancy resulting from rape in Mexico increased public support and access to abortion (Taracena 2002).

A consistent negative framing of abortion has been documented in various countries, including the USA, the UK, Ireland, and Uganda (Larsson et al. 2015; McDonnell and Murphy 2019; Purcell, Hilton, and McDaid 2014; Woodruff 2019). Public media tend to disproportionately highlight the alleged risks associated with abortion while neglecting to convey its safety and everyday occurrence as a healthcare practice. Coverage also tends to focus on abortion controversy, leading to inaccurate perceptions of public support and/or inappropriately framing it as a political matter rather than a health issue (Purcell, Hilton, and McDaid 2014).

Research has underscored how media coverage of abortion also shapes societal perceptions of women<sup>3</sup> through thematic and linguistic choices. Larsson et al. (2015) illustrated how the Ugandan news media portrayed women both as victims of strict abortion laws and as responsible for engaging in risky, illegal procedures. In the USA, women's personal abortion stories are seldom mentioned, while language personifying the foetus is prevalent. When covered, women's stories often centre on tragedy and extreme circumstances (Woodruff 2019). Media studies in the UK (Purcell, Hilton, and McDaid 2014), Romania (Kirkham 2013), Uganda (Larsson et al. 2015), the Czech Republic (Dudová 2010), and South Africa (Macleod and Feltham-King 2012) show how abortion is consistently framed as 'deviant' and portrayed as incompatible with normative expectations of femininity, sexuality, and 'good' motherhood.

The present study investigates seven Dutch newspapers' coverage of abortion over the past two decades. We analyse news coverage in terms of (1) coverage volume, (2) the topics focused upon, and (3) their framing.

First, we study time and cross-outlet variations in the volume of abortion coverage (i.e. topical attention) and the key events reported on. Research consistently demonstrates that the public's perceived importance of an issue expands with increased news exposure (Valkenburg and Oliver 2019). Additionally, it is important to analyse key events that punctuate media coverage (Walgrave et al. 2017), as these events drive subsequent journalistic comment (Meer et al. 2019) and influence issue news prominence (Boydston, Hardy, and Walgrave 2014).

Second, we examine the topics focused on in abortion coverage, and variation across media outlets. Our objective here is to identify the topics most prominently linked to abortion, enabling us to discern overarching frames. Framing theory is helpful in assessing the causes, content, and consequences of media coverage (Scheufele and Tewksbury 2007). Media framing research involves assessing how journalists seek to 'promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation' (Entman 1993, 52). Following Ylä-Anttila, Eranti, and Kukkonen (2022), our inquiry centres on how journalists frame abortion through the emphasis given to certain aspects, while neglecting others.

This research was conducted on behalf of Fiom, a government-subsidised organisation which focuses on problems related to unwanted pregnancy and questions about ancestry. In our work, we stress the importance of free and informed decision-making. Our position is in line with that of the World Health Organisation, which states that abortion is a safe and commonplace reproductive healthcare procedure, and that restrictions on abortion can have far-reaching negative consequences for individual well-being and health (WHO, n.d.).

## Methods

This study analyses articles on abortion published in selected Dutch newspapers between January 2000 and June 2022. We employed automated content analysis (ACA) with BERTopic, a state-of-the-art topic modelling technique, to identify latent themes in large text corpuses (Grootendorst 2022). We studied which topics gained significance through their association with abortion, rather than in terms of their political stance (whether pro-abortion, against abortion, or neutral).

### Data collection

We selected seven national newspapers to focus on using three criteria: (1) high circulation rate; (2) diversity of newspaper types; and (3) frequent publishing on abortion. The selection included the five largest Dutch newspapers: *Algemeen Dagblad* (AD), *de Telegraaf*, *de Volkskrant*, *NRC Handelsblad* (NRC), and *Trouw*, as well as *het Reformatorisch Dagblad* (RD) and *het Nederlands Dagblad* (ND). The latter two are Christian newspapers that published the most frequently on abortion of the seven newspapers studied. The newspapers were grouped into three distinct types (see Table 1): quality, popular, and religious, based on the categorisation provided by the Netherlands Institute for Social Research (SCP) (SCP 2019).

We considered it valuable to include religious newspapers in our analysis. The political and media landscapes in the Netherlands typically reflect nuanced rather than stark ideological differences (Bakker and Scholten 2019; Vliegthart and Mena Montes 2014). This aligns with the tradition of political consensus-building, whereby minority parties can strategically leverage their influence on policy by granting support or opposition to other parties' positions (Andeweg, Irwin, and Louwerse 2005). Dutch politicians often engage with media outlets aligned to their political orientations, and these outlets, in turn, reflect the perspectives of the politicians they cover (Vliegthart and Mena Montes 2014; Van der Pas, Van der Brug, and Vliegthart 2017). Consequently, the minority religious press possesses the potential to wield substantial influence over policy decisions, especially concerning contentious matters like abortion (Aelst and Vliegthart 2014).

**Table 1.** Volume of coverage by newspaper category.

Newspaper category	Newspaper	Period covered	Number of articles on abortion	% of abortion articles relative to total number of articles
Quality	<i>Volkskrant</i>	01/2000–06/2022	463	0.07
	<i>NRC Handelsblad</i>	03/2002–04/2022	507	0.08
	<i>Trouw</i>	01/2000–06/2022	701	0.13
<b>Total</b>			<b>1671</b>	<b>0.09</b>
Popular	<i>Telegraaf</i>	01/2000–06/2022	210	0.02
	<i>Algemeen Dagblad</i>	01/2000–06/2022	264	0.04
<b>Total</b>			<b>474</b>	<b>0.03</b>
Religious	<i>Nederlands Dagblad</i>	06/2007–06/2022	1031	0.38
	<i>Reformatorisch Dagblad</i>	12/2005–06/2022	1151	0.37
<b>Total</b>			<b>2182</b>	<b>0.37</b>
<b>TOTAL</b>			<b>4327</b>	<b>0.11</b>

The period from 2000–2022 was selected to study temporal variations in coverage volume. This chosen timeframe also allowed for an analysis of newspaper articles leading up to the evaluation of the *Wet afbreking Zwangerschap*,<sup>4</sup> the Dutch abortion Act's, implementation in 2005, a significant moment in 21st-century discussion about abortion in the Netherlands.

The newspaper *Trouw* is classified as a quality newspaper. However, *Trouw* comes from a Protestant-Christian tradition, reflected in its contemporary focus on religion, philosophy, and belief systems (Bootsma 2018). Given the role of religion in the Dutch abortion debate, we conducted a robustness check to verify the appropriateness of its classification. We compared *Trouw*'s coverage with the quality category (*de Volkskrant* and *NRC*) and the religious category (*ND* and *RD*). Based on the outcomes of this check, we kept *Trouw* in the quality category. This robustness check is described in more detail below.

We collected newspaper articles from the Nexis Uni database, using the a broad search term 'abortus' [abortion], which was refined after several iterations.<sup>5</sup> Relevant articles were selected based on the following parameters: (1) search term present in headline or lead section(s), and (2) search term present at least twice in all fields. The initial search identified 5438 newspaper articles in total. All the articles were screened manually by the first author and two research assistants.<sup>6</sup> After removing 57 duplicates and 1054 irrelevant articles, 4327 newspaper articles remained (39% quality, 11% popular, 50% religious). Subsequently, we calculated the percentage of articles on abortion relative to the total number of articles published per year in each outlet.<sup>7</sup> Each article was treated as a document instance and grouped into a newspaper category. We trained a Dutch-language model from the SpaCy library to remove stop words that affected the clarity of topic interpretation. We then tested various parameter settings and made adjustments to improve the quality of the results.

Not all the newspapers in our study were included in the Nexis Uni database starting in 2000. The newspapers from the religious category were included from 2005 (*RD*) and 2007 (*ND*). Additionally, we did not analyse an equal number of newspapers per category: the religious and popular categories include two newspapers each, while the quality category included three.

## Data analysis

We analysed the volume of news coverage by calculating total and monthly publication counts for the entire dataset and each newspaper category. To identify key events, we detected outlier months with unusually high article counts. We determined the mean number of articles published per month, then calculated the first quartile (Q1), third quartile (Q3), and interquartile range (IQR=Q3-Q1). Using these, we set upper and lower bounds ( $Q3 + IQR * 1.5$  and  $Q1 - IQR * 1.5$ ) to identify outliers (see Appendix A). For each outlier month, we examined the titles and first paragraphs of the articles to determine key events driving the increase in coverage.

To explore how journalists framed abortion, we employed BERTopic for topic modelling. BERTopic facilitates the automated discovery and categorisation of recurring topics in media coverage (Grootendorst 2022). Topic models analyse statistical patterns of word co-occurrence to identify groups of frequently appearing words, known as

'topics'. The more often words co-occur, the more likely they are to share a similar meaning (DiMaggio, Nag, and Blei 2013).

Topic models produce word clusters, which researchers must qualitatively interpret to discern their latent meaning. Topics were labelled based on an analysis of the top ten words and three most representative articles, by two authors (AvB and SB), resolving discrepancies through discussion. If a coherent label could not be identified, all documents under the topic were reviewed.

Next, we clustered the topics into a smaller number of topic-clusters based on the similarities between them. This involved two steps: using BERTopic's hierarchical clustering function to visualise statistical similarities in a topic-tree; and then evaluating this clustering based on context-specific knowledge of the Dutch context. The authors qualitatively interpreted the latent meaning of these topic-clusters and assigned labels. Variation between news outlets was determined by examining the representation of topic-clusters across newspaper categories.

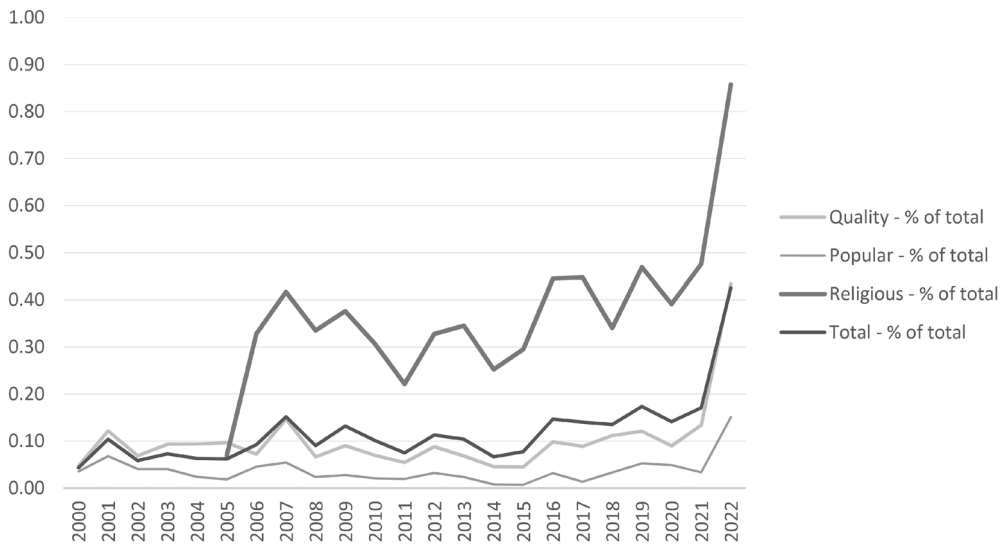
The final step in our analysis involved discerning overarching frames in newspaper reporting on abortion based on the identified topics, following the approach described by Ylä-Anttila, Eranti, and Kukkonen (2022). Using Entman's definition of framing, we studied how journalists highlight certain aspects of perceived reality in order to 'promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation' (Entman 1993, 52). Through qualitative interpretation, two researchers (AvB and SB) interpreted the topic-clusters and key events by identifying which aspects of abortion were selected, emphasised, or neglected. They compared these results with the scientific literature on abortion framing, based on a literature review whose results are described in the introduction and conclusion of this article. Eventually, resulting in the identification of four overarching frames present in Dutch newspaper portrayals of abortion.

## Results

### *Volume and key events*

Between January 2000 and June 2022, Dutch newspapers published 4,327 articles on abortion, constituting 0.11% of total newspaper output. Coverage volume varied significantly across newspaper categories. The religious category stood out for its extensive focus on abortion, both in terms of total numbers and in relative coverage (see Table 1 and Figure 1). Quality newspapers exhibited the second-greatest emphasis on abortion, while popular newspapers had the least.

We identified key events that triggered heightened news attention in eleven different months, mainly between 2019 and 2022. Peaks were tied to political developments, legislative changes, and abortion-related protests and advocacy (see Table 2 and Figure 2). Notably, newspaper categories had distinct coverage peaks, with some overlap, such as the Supreme Court of the United States overturning federal abortion rights in the USA. Quality newspapers tended to focus on political dimensions and international developments, such as European referenda. Popular newspapers highlighted illegal or harmful practices associated with abortion. The religious category uniquely focussed on issues such as the alleged claim of fraud



**Figure 1.** Percentage of articles on abortion relative to total number of articles per newspaper category.

by Dutch abortion clinics and events such as the ‘Week of Life’ anti-abortion campaign.

### Topics

We identified 51 unique topics,<sup>5</sup> which we classified into nine clusters. [Table 3](#) presents these topic-clusters and their respective significance in the overall dataset. Topics are referenced using ‘T’ followed by a numerical identifier.

#### *A. Conditions for acceptable abortion*

The largest topic-cluster focused on conditions for acceptable abortion and was prominently covered in each category (religious 19.1%, quality 18.8%, and popular 17.5%). Within this cluster, several topics explored the determinants of justifiable abortion. Most significantly, T4 and T47 addressed whether abortion should be permitted in the case of Down Syndrome diagnosis. Similarly, T12 covered political parties’ stances on abortion timing, including debates on abortion in the case of foetal anomaly. T37 focused on debates following the 2007 Coalition Agreement aiming to decrease abortion rates by facilitating adoption. Various topics (T46, T16, T17, T28, and T41) revolved around procedures and prerequisites related to abortion care, most importantly access to medical abortion –and the mandatory reflection period.

#### *B. International abortion laws*

The second-largest cluster addressed international abortion laws, highlighting interest in global, and often restrictive, developments. This cluster was most significant in the quality category (19.0%), but prominent in the religious (13.4%) and popular (10.6%) categories. Several topics (T3, T5, and T26) showed a close focus on developments

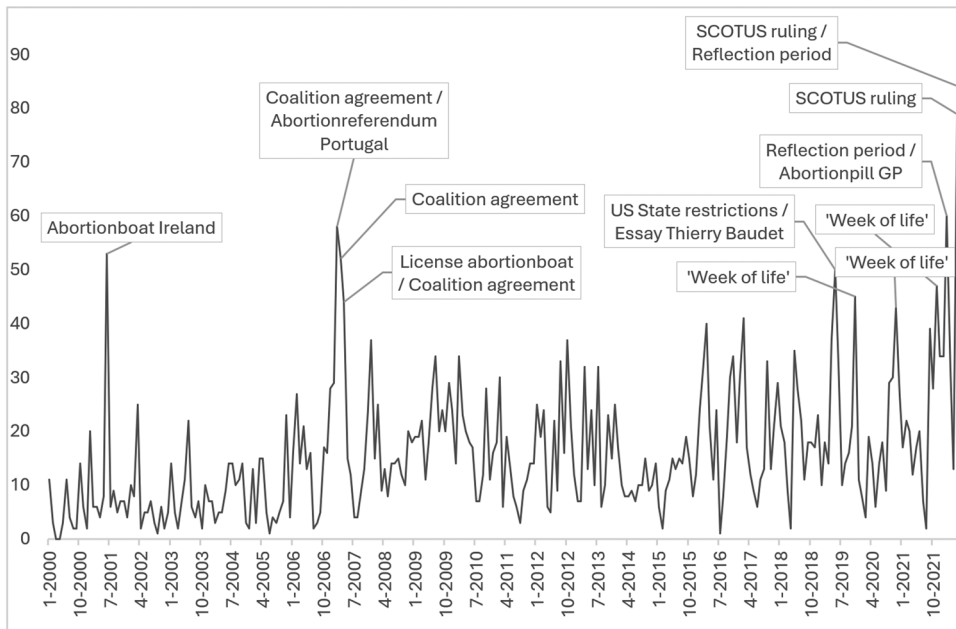
**Table 2.** Key events triggering media attention to abortion.

	Newspaper	Month and Year	Description event
1	Total; Quality; Popular	June 2001	Dutch Women on Waves 'abortion boat' sails to Ireland
2	Quality; Popular	March 2002	Increased abortion rate—the Netherlands Abortion referendum—Ireland
3	Quality	June 2003	'Abortion boat' sails to Poland
4	Quality	November 2005	Evaluation of Dutch abortion law
5	Popular	February 2006	Rotterdam politician suggests forced abortions
6	Popular	October 2006	Illegal later abortions—Spanish clinic
7	Total; Quality; Popular	February-April 2007	Dutch coalition agreement: first government participation of Christian party <i>ChristenUnie</i> and provisions to broaden adoption opportunities as an alternative to abortion
8	Total; Quality	February 2007	Abortion referendum—Portugal
9	Total; Quality; Popular	April 2007	'Abortion boat' licence granted by Dutch minister of Healthcare
10	Popular	December 2007	Dutch woman faces murder allegations for later abortion—Spain
11	Popular	October 2012	Abortion boat sails to Morocco
12	Religious	September 2017	Bankruptcy and alleged fraud by Dutch CASA abortion clinics
13	Total; Quality	May 2019	Initiatives to restrict abortion rights—US Anti-abortion essay by Dutch politician Thierry Baudet
14	Popular	November 2019	Dutch man arrested after illegal and fatal home abortion
15	Total; Religious	November 2019, 2020, 2021	Annual anti-abortion campaign 'Week of Life'
16	Quality	September 2021	Texas Senate Bill 8
17	Total; Religious; Quality	February 2022	Dutch Parliament votes to abolish mandatory five-day reflection period Parliamentary initiative to authorise Dutch general practitioners to prescribe the abortion pill
18	Total	June 2022	Dutch Senate accepts amendment to abolish the mandatory five-day reflection period
19	Total; Religious; Quality; Popular	May-June 2022	SCOTUS overturns federal abortion rights (Roe v. Wade)

surrounding abortion laws in EU countries. Coverage also frequently extended beyond Europe to places such as Latin America (T13). Most noteworthy was the attention given to developments in the USA, including Supreme Court of the United States rulings and the Texas Senate Bill 8<sup>8</sup> (T23, T39, T27, and T20).

### ***C. Christian religious objections to abortion***

This cluster encompasses objections to abortion rights rooted in Christian religious principles and beliefs. Notably, it was prominent in the religious (17.4%) and quality (15.4%) press categories, and less frequent in the popular category (9.5%). Several topics (T25, T48, T38, T30, and T19) focused on the viewpoints of Christian organisations and institutions. Other topics focused on religious moral objections to abortion (T7), and debate on women's right to self-determination versus the foetus' right to life (T22). Furthermore, this cluster included topics (T42 and T2) that highlighted the influence of Christian viewpoints in the political sphere.



**Figure 2.** Timeline of all articles on abortion in total dataset, indicating peaks in coverage and key events.

#### ***D. Protest and advocacy for/against abortion***

This cluster encompassed various forms of protest and advocacy for or against abortion rights. It received the most attention in the popular press category (17.9%), and less attention in the quality (12.9%) and religious (9.0%) categories. T44 focusses on how narratives about abortion and, mainly, anti-abortion positions were shared through various media. T31, T36, T9, and T35 focused on diverse forms of anti-abortion protests. A topic that stood out was T0, one of the largest in the overall dataset. This topic covered the ‘abortion boat’, an initiative by the Dutch pro-choice organisation Women on Waves. The abortion boat aimed to provide abortion services in international waters and to raise public awareness about issues related to access to abortion healthcare.

#### ***E. International political debate on abortion***

This cluster centred on international political debate surrounding abortion. It was most significantly represented in the religious and quality categories (9.5% and 11.7%), while the popular category devoted less coverage (6.5%). T40 delved into abortion rates, laws, and practices in non-Western countries such as Malawi and Iran. T11 focused on the European Union’s stance on abortion policy and legislation in individual member states. Most topics (T50, T6, T32, and T10) focused on US political debate about abortion.

#### ***F. Abortion data***

This cluster comprised three topics that explored research on abortion, as well as statistics and abortion rates. It received similar attention within each newspaper

**Table 3.** Representation of topic-clusters in the overall dataset.

Topic-cluster	Topic	Labels	#Articles
<b>A. Conditions for acceptable abortion</b> 812 articles; 20.56%	46	Political discussion on amendments to Dutch abortion law	180
	16	Access to contraceptives and abortion pill	141
	4	Abortion after prenatal diagnosis of Down syndrome	121
	41	Practices of Dutch healthcare professionals in abortion care	105
	12	Dutch political debate on later abortions	77
	17	Discussion on Dutch mandatory reflection period	64
	28	Dutch Parliament abolishes mandatory reflection period	63
	37	Adoption as alternative to abortion	34
	47	Gelderse Valle Hospital's policy on abortion in case of Down Syndrome	27
<b>B. International abortion laws</b> 686 articles; 17.37%	3	Discussion to relax strict abortion laws—Ireland	140
	5	Restriction of abortion rights—Poland	97
	13	Abortion laws—Latin America	93
	26	Abortion law—Spain	90
	23	State initiatives to restrict abortion rights—US	81
	20	SCOTUS overturns federal abortion rights (Roe v. Wade)	67
	27	Legal battle over strict abortion law—US (Texas)	39
	39	SCOTUS rulings on state abortion laws	30
	34	Abortion referendum—Portugal	29
	43	Legalisation of abortion—Mexico	20
<b>C. Christian objections to abortion</b> 681 articles; 17.24%	2	Influence of Christian parties on Dutch government policy	209
	22	Moral debate on right to life versus right to self-determination	136
	7	Conservative Christian objections to abortion	107
	19	Pope Francis' position on abortion	51
	38	Opposition to abortion—Catholic Church in Italy and Spain	41
	25	Unwanted pregnancy counselling by Christian pro-life organisation Siriz	39
	30	Catholic bishops' opposition to pro-choice Democrats—US	37
	48	Catholic Church's anti-abortion position	32
	42	Catholic anti-abortion advocates' appeals to Dutch parliament	29
	0	Women on Waves 'abortion boat'	186
<b>D. Protest and advocacy for or against abortion</b> 494 articles; 12.51%	9	Anti-abortion protests at Dutch abortion clinics	110
	44	Films, documentaries, and images depicting anti-abortion / pro-choice position	79
	31	Abortion compared to Holocaust	66
	36	March for Life anti-abortion protest	27
	35	Murder of abortion doctor George Tiller	26
	6	US presidents' positions on abortion	114
	50	US political battle over abortion laws	104
	10	US presidents' foreign policy on abortion	74
	11	Positioning European Commission and Parliament abortion debate	72
	40	Discussion on abortion in non-Western countries	47
<b>E. International political abortion debate</b> 445 articles; 11.27%	32	Influence of abortion debate on US president's nomination of Supreme Court Justice	34
	1	Studies and statistics on abortion in the Netherlands	258
	8	Global and (inter)national abortion rates	107
	29	Abortion rates in the Netherlands	40
	21	Bankruptcy of Dutch abortion clinics	58
	15	Prosecution of Dutch woman for illegal later abortion—Spain	55
	18	One-child policy and (forced) abortion—China	52
	24	Abortion of female foetuses—India	45
	45	Alleged selling of aborted foetuses by Planned Parenthood—US	28
	14	Negative pregnancy and abortion stories	103
<b>F. Abortion data</b> 405 articles; 10.26%			
<b>G. Criminal or harmful abortion practices</b> 238 articles; 6.03%			
<b>H. Personal abortion experiences</b> 103 articles; 2.61%			
<b>I. Information exchange on abortion</b> 85 articles; 2.51%	33	Ban on anti-abortion advertisement	54
	49	Discussion on providing (online) information on abortion	31

category (popular 10.6%, religious 9.7%, and quality 8.7%). The largest topic, T1, delved into research findings and statistics on various aspects of abortion. T29 and T8 focused on the number of abortions performed.

### ***G. Criminal or harmful abortion practices***

This cluster encompassed media focus on criminal or harmful practices surrounding abortion, including country policies, organisations and abortion clinics, and individuals. The cluster received similar attention in the popular (6.0%) and religious (6.0%) newspaper categories, and less in the quality (4.7%) category. T45, T15, and T21 focused on abortion clinics and pro-choice organisations, of which the bankruptcy and alleged financial fraud in Dutch abortion clinics received the most attention. T18 and T24 included forced abortions and sterilisations in China and sex-selective abortions in India.

### ***H. Personal abortion experiences***

This cluster consisted solely of T14: personal stories highlighting extreme and negative circumstances in which people chose abortion. It was most prominently featured in the popular press category (6.3%), and less in the religious (2.3%) and quality (1.4%) categories. The articles often included pregnancy stories marked by harsh circumstances like rape, unsafe relationships, refugee experiences, and poverty. Additionally, this topic included stories of individuals who, for instance, decided against having an abortion at the last moment or had a negative abortion experience, where factors like coercion played a role.

### ***I. Information exchange on abortion***

This cluster focused on what information about abortion can be shared and by whom. It had low significance in the popular and quality categories (both 0.6%) but constituted 3.3% of the articles in the religious newspaper category. T33 centred controversial anti-abortion advertisements, while T49 covered the provision of information about abortion. This topic also encompassed debate about what constitutes objective information.

## ***Frames***

Drawing on our findings of key events and topics, we were able to identify four recurrent frames in Dutch newspapers' abortion-coverage.

### ***Frame one: abortion as a political and moral issue***

Our analysis underscores how newspapers consistently emphasise political divisions, portraying abortion as politically and morally contested. Media attention to the topic peaked during key political events with a strong focus on aspects related to national and international politics and legislation (particularly clusters B and E). Additionally, key events as well as cluster C show that Christian religious objections to abortion received prominent attention, accentuating ongoing moral debate concerning the right to life versus the right to women's self-determination. Substantial coverage of abortion-related protest and advocacy further reinforces the perception of abortion

as a polarised and politically charged issue. This frame was present in all newspaper categories, but with differing emphases. Quality newspapers focused most on the political aspects, while the religious category gave special attention to Christian objections, and the popular category primarily highlighted popular protest.

#### ***Frame two: abortion portrayed as uncommon and problematic***

Overall, Dutch newspapers emphasised the uncommon or problematic aspects of abortion, neglecting to present it as a commonplace and safe reproductive healthcare procedure. This frame was evident for several key events and often focused on criminal or harmful practices surrounding abortion (cluster G). The sole topic that included personal experiences of abortion was characterised by extreme circumstances (cluster H). Newspapers prominently covered abortion in the case of foetal anomalies, obscuring the fact that most abortions occur under different circumstances. Quality newspapers paid the least attention to harmful abortion practices, while this received equal prominence in religious and popular categories. The latter category also most prominently featured negative pregnancy and abortion stories.

#### ***Frame three: marginalisation of women's personal perspectives***

Our analysis highlighted a lack of representation of women's personal narratives in Dutch newspaper coverage on abortion. The primary focus was on politicians, religious leaders, and pro- and anti-abortion organisations. This disparity in representation became particularly evident when we examined the topics selected and emphasised by newspapers. The most prominent topic-clusters (A–E) revolved around discussion on the morality of abortion from a political or religious viewpoint, thereby sidelining the women (and their experiences) who lay at the centre of this debate. Furthermore, newspaper coverage that did focus on women's personal stories predominantly covered negative experiences and excluded positive or more neutral perspectives, as demonstrated in cluster H. Notably, the topic 'negative pregnancy and abortion stories' was mostly represented in popular newspapers; in religious and quality newspapers there is an even greater lack of representation of women's personal narratives.

#### ***Frame four: emphasising prerequisites for abortion care***

Frame four significantly emphasised the prerequisites for accessing abortion healthcare. This was particularly evident in cluster A, and stood out across all press categories. Newspapers extensively covered criteria for having an abortion, such as the mandatory reflection period. Moreover, cluster A highlighted factors influencing the decision to have an abortion, with a focus on less common scenarios such as those involving foetal anomalies. Clusters B and E also included debates on the circumstances in which a person had the right to an abortion, such as in the case of rape or health risks. Through this frame, abortion was depicted not as an inherent right but as an option for individuals who fulfilled specific criteria and found themselves in circumstances warranting access to it.

#### ***Robustness check***

*Trouw* comes from a Protestant-Christian tradition, reflected in its contemporary focus on religion, philosophy, and belief systems (Bootsma 2018). Given the role of

religion in the Dutch abortion debate, we conducted a robustness check to validate our categorisation of *Trouw* as a quality newspaper. Comparing thematic focus through topic-clusters, *Trouw* differs from other quality newspapers by emphasising Christian religious objections (*Trouw* 19%, quality 13%, religious 17%) and conditions for acceptable abortion (*Trouw* 21%, quality 17%, and religious 19%). This has the effect of aligning *Trouw* more closely with the religious category. Coverage volume analysis shows that *Trouw's* attention to abortion<sup>9</sup> (0.13%) surpasses the quality newspaper category (0.08%) but deviates considerably more from the religious category (0.37%). Similarly, regarding key events, *Trouw* aligns more with the quality category, with eight out of twelve key events matching, while only three correspond to the religious category. Additionally, *Trouw* showed no increase in abortion coverage during the annual 'Week of Life' (2019–2021), unique to the religious category. In summary, results indicate a closer alignment between *Trouw* and the quality category, supporting its retention in that category as part of our analysis.

## Discussion

This study investigated abortion coverage in Dutch newspapers over the last two decades (2000–2022). News media has played a pivotal role in shaping political perceptions and public attitudes regarding societal topics such as abortion (Valenzuela and McCombs 2019). Nonetheless, media influence on public opinion about abortion in more progressive political contexts has received limited attention. To bridge this gap, we employed automated content analysis (ACA) with topic modelling to examine newspaper coverage on abortion and identify underlying themes and framing, marking the first occurrence of such an approach in abortion news coverage studies. Our long-term analysis examined variations across newspaper categories, and scrutinised news coverage through the lenses of volume, topics, and framing.

Our findings revealed an ongoing coverage of abortion, with substantial variations between outlet types. Particularly noteworthy was the prominence of abortion coverage in religious newspapers. Their readers are more frequently exposed to this subject, potentially resulting in higher perceived importance (Valkenburg and Oliver 2019). Overall, our research indicated that, alongside Christian parties and organisations (Burgh et al. 2021), newspapers with a Christian background have a prominent voice in the Dutch abortion debate.

Our analysis revealed that key events were primarily related to political and legislative developments, as well as protest and advocacy for or against abortion. This aligns with journalists' focus on political issues such as legislation and public issues such as protests, particularly in relation to social and political issues such as abortion, and reflects media logic, especially the journalistic tendency to highlight conflict (Harcup and O'Neill 2017; Walgrave and Vliegenthart 2012).

The recent surge in newspaper attention given to abortion can be attributed to debates surrounding abortion access in the Netherlands and recent abortion restrictions in the USA. Newspapers placed significant emphasis on international developments, particularly in the quality category. This highlights how international events continue to keep abortion in the public eye, and connects to the literature on the importance of international news flows (Wu 2003).

We identified four frames in Dutch newspaper coverage on abortion. First, our study reaffirmed an emphasis on the controversy surrounding abortion. This mirrors similar findings in the UK and the USA (Purcell, Hilton, and McDaid 2014; Woodruff 2019). In Dutch news coverage, abortion is persistently depicted as a highly contentious matter that generates significant societal divisions. This stress of divisiveness can foster a perception of limited public support for abortion, even when such division does not accurately reflect societal views (Purcell, Hilton, and McDaid 2014).

The second frame highlights problematic and uncommon aspects of abortion. Consistent with studies in the UK, the USA, and Uganda (Larsson et al. 2015; Purcell, Hilton, and McDaid 2014; Woodruff 2019), we observed that the few personal abortion stories covered were often marked by tragedy. Notably absent were topics highlighting the importance of women's right to self-determination, nor did we identify topics representing positive abortion experiences, even though most people who choose to terminate their pregnancy are satisfied with their choice (Brauer et al. 2019; Rocca et al. 2020). This type of coverage may contribute to the perception that abortion only takes place in extreme circumstances (Woodruff 2019), thereby perpetuating the stigmatisation of abortion as a deviant act (Purcell, Hilton, and McDaid 2014). Researchers posit that this framing derives from the inherent challenge that abortion poses to established societal norms surrounding reproductive behaviour and women's 'nature' as caregivers and mothers (Kumar, Hessini, and Mitchell 2009).

The third identified frame was the marginalisation of women's perspectives on abortion. Our analysis revealed the notable absence of women's personal narratives, aligning with previous findings in the UK and the USA (Purcell, Hilton, and McDaid 2014; Woodruff 2019). Instead, coverage was overwhelmingly dominated by the viewpoints of powerful figures. This pattern underscores the media's tendency to provide a platform for the powerful and visible while excluding more marginalised perspectives (Ferree 2003), even though many women may also be reluctant to share their stories due to taboos. This stark disparity in representation reinforces the notion that women are not capable of making their own decisions regarding unwanted pregnancy, portraying them as passive objects of care and unfit to make the moral decision to end a pregnancy (Jesudason and Weitz 2015; Kumar, Hessini, and Mitchell 2009).

In the fourth frame, prerequisites for abortion care were accentuated, effectively classifying certain circumstances as justifying abortion. We observed a significant focus on abortion in cases of foetal anomaly. Additionally, an emphasis on extreme reasons for choosing abortion such as coercion or rape took centre stage in personal abortion stories. This framing diverts attention from the majority of cases not involving such factors, implicitly suggesting that some rationales for abortion are more valid than others. It perpetuates the idea of there being a 'hierarchy of deservedness' (Cullen and Korolczuk 2019), grounded in the belief that there are 'good' and 'bad' reasons for seeking an abortion, and risks promoting societal disapproval of people perceived as having 'inadequate' or 'selfish' reasons for abortion (Norris et al. 2011).

Overall, our analysis reveals that Dutch newspaper coverage continues to depict abortion as highly contentious matter. Notably, there is a substantial overlap in newspaper framing between the Netherlands and other contexts, particularly the UK and the USA (Purcell, Hilton, and McDaid 2014; Woodruff 2019). Consequently, our study underscores how abortion continues to be a morally charged subject, even in countries with progressive abortion legislation. This is also evident in existing limitations

on Dutch abortion care, for instance with certain aspects of abortion legislation still falling under the Dutch Penal Code.

Overall, our study highlights clear differences in volume, topics, and framing across newspaper categories. These discrepancies are closely aligned with each category's unique profile (SCP 2019). Quality newspapers predominantly cover the political dimensions of abortion; popular newspapers prioritise entertainment over politics; religious newspapers emphasise Christian moral objections to abortion and abortion prerequisites. Consequently, future media-effects research ought to take cross-outlet variation into account.

Our research design facilitated the analysis of a large corpus of newspaper articles and enabled us to identify a greater number of underlying themes and nuanced variations across newspaper categories (DiMaggio, Nag, and Blei 2013). The internal and external validity of our results is demonstrated by the clarity of the topics and their alignment with previous research findings (Ylä-Anttila, Eranti, and Kukkonen 2022). Furthermore, our comprehensive approach employed the paired lenses of volume, topics, and framing, making an important new contribution to existing knowledge concerning the media's role in influencing public opinion on abortion, particularly in liberal abortion contexts.

### **Limitations**

This study has limitations due to the large dataset size, which constrained an in-depth qualitative examination of the issues, limiting insights into rhetorical nuances. Future research would benefit from combining automated and qualitative content analysis. Additionally, BERTopic's approach of assigning just one topic per article reduces the nuance and complexity of the discussions, as many articles address multiple topics or themes that cannot be captured by a single label.

### **Conclusion**

In conclusion, study findings reveal that abortion remains an ongoing and contentious issue in the Netherlands. Readers of a range of newspaper categories are exposed to distinct perspectives on the topic, with the perceived prominence of the topic likely differing by readership. Overall, Dutch newspaper coverage continues to frame abortion as a controversial matter, rather than as a safe healthcare procedure and a reproductive right. Despite liberal legislation, newspapers continue to marginalise women's perspectives and focus instead on the prerequisites for abortion care. This coverage likely influences public opinion through its negative depictions and its continued undermining of women's decision-making agency. Furthermore, media emphasis on a false hierarchy of deservedness likely reduces public support for women following abortion. Our study underscores the need for more balanced reporting and in particular for the greater inclusion of women's experiences and perspectives.

### **Notes**

1. The 1984 Termination of Pregnancy Act allows abortion until the 24th week, based on foetal viability outside the body.

2. In the Netherlands, these statistics cover ages 15–44, and globally 15–49.
3. To address gender inequity, we use the term ‘women’ due to its relevance to our study, while noting that all genders can experience unwanted pregnancy.
4. The termination of pregnancy act enacted in 1984 specifies how abortion care is regulated in the Netherlands.
5. Please refer to online [supplemental material](#) for the full search query, adjusted topic model parameters, and an overview of the 51 topics, including labels and top 10 words.
6. Exclusion criteria were: (a) <100 words, (b) non-articles, (c) non-Dutch articles, (d) off-topic articles.
7. To retrieve all articles, we searched Nexis Uni using ‘de’, the most common Dutch word (Tiberius and Schoonheim 2014). Though not exhaustive, this provided a robust overview of the relative distribution of abortion-related articles. Articles <100 words were excluded.
8. Texas Senate Bill 8, also known as the Texas Heartbeat Act, prohibits a physician from performing a termination of pregnancy after a “fetal heartbeat” has been detected.
9. Percentage of abortion-related articles relative to the total number of published articles.

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## Appendix 1. Descriptive statistics of key events.

	Total	Quality	Popular	Religious
Mean <sup>a</sup>	16.0	6.2	1.7	11.0
SD	12.6	5.9	2.2	6.8
Range	0–84	0–39	0–16	0–34
1st Quartile	7	2	0	6
3rd Quartile	21	8	2.75	14
Upper bound	42	17	7	26

<sup>a</sup>Mean number of articles published per month