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Characteristics of Incel Forum Users: Social Network Analysis and Chronological Posting Patterns

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ABSTRACT

Incels, *Involuntary Celibates*, are men who both struggle with lack of sexual and romantic relationships and participate in online communities espousing a misogynistic ideology. This study characterizes users of three popular Incel forums. Using network analysis and community detection, we identify their main issues and interests and assess whether interests predated or followed their initial participation in an Incel forum. Results indicate that users commonly engage with content concerning mental health and relationships, but also participate in other hateful forums. Contributions to hateful forums mostly predated their earliest engagement with an Incel forum. Implications for prevention and intervention are discussed.

ARTICLE HISTORY


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Introduction

Involuntary Celibates, better known by the acronym “Incels”, are members of an online community that has received increased attention from both media and academia. The growing interest may be explained by the misogynistic nature of the discussions found on their online forums, high-profile acts of real-world violence committed by self-identified Incels, and the fear that this community might radicalize other men into committing acts of violence against women.¹

Incels are part of a broader conglomerate of anti-feminist groups called the Manosphere, which includes “Men’s Rights Activists” (MRA), “Pick-Up Artists” (PUA), and “Men Going Their Own Way” (MGTOW). While an analysis of each group is outside the scope of this paper, it has been noted that they all share a common belief in what is called the “Red Pill” ideology.² This metaphorical term refers to the 1999 movie *The Matrix*, and is a popular internet meme with no unified definition: It is commonly used to describe the realization of unpleasant truths and/or the rejection of mainstream perspectives or ideologies.³ In the context of the Manosphere, however, it came to be associated with the “awakening” to the reality that men are the oppressed

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group, and that men are in “crisis” due to the rise of feminism, which is seen as hypocritical and oppressive.⁴ From this perspective, feminism is construed as a sexual strategy that seeks to place women into the advantageous position of being able to select wealthy and attractive male partners, thus enabling them to fulfill their genetically determined impulses.⁵ Therefore, “taking the Red Pill” allows men to “awaken” to this reality and liberate themselves from the influence of feminism.

Like other manosphere groups, members of Incel communities believe that women are more privileged than men in society and use this advantage to select their favored romantic and sexual partners. They believe that physical attractiveness plays a pivotal role in structuring society (i.e. a social hierarchy based on “lookism”), with the most attractive/desirable males (“alphas”) at the top, average-looking “normies” in the middle, and them “Incels”, or “beta males”, at the bottom.^{6,7} However, Incels distinguish themselves from the other manosphere groups by placing greater emphasis on the immutability of this social hierarchy, which they rationalize using biological arguments.⁷ Incels believe that certain unalterable physical traits (e.g. one’s height, forehead size, etc.) will permanently prevent them from improving their position in the hierarchy and one day establishing a romantic or sexual relationship with a woman, which they describe as their primary struggle. This defeatist view is encapsulated in an offshoot of the Red Pill, termed the “Black Pill”. Stijelja and Mishara⁸ previously proposed an operational definition of “Incels,” which recognized that while “involuntary celibacy” can describe the state of anyone who feels as though their lack of sexual relations is not chosen – as defined by the work of Donnelly, et al.⁹ on reluctant celibates – the term “Incel” has come to refer to the specific subgroup of male involuntary celibates who are both struggling with a lack of sexual activity and are also members of an online community espousing the “Black Pill” ideology.

Survey-based data currently provide the best (albeit partial) available description of the sociodemographic and psychological characteristics of Incels.¹⁰⁻¹³ These studies suggest that Incels are predominantly young males, united in their lack of sexual and romantic relationship, and who do not differ demographically from the broader population based on geographical, ethnic, or religious identification data. However, compared with the general population, they are significantly overrepresented in self-reported rates of several mental health issues, such as depression, anxiety, autism, posttraumatic stress, and suicidal ideation. Linguistic¹⁴ and content analyses¹⁵⁻¹⁹ of Incel discussions have reported on the presence of several themes concerning the Black Pill, namely elements related to romantic and sexual challenges, physical attractiveness, and anti-feminist and misogynistic themes. However, these findings are limited by several methodological concerns, including small sample sizes, the self-reported nature of the data, selection bias, emotional contagion²⁰, and the performative aspect of online personas which can conceal the complexity of the person writing online under the veil of anonymity.²¹ The performance obligations of Incel forums can also be an important research issue, since users are welcomed in these forums only insofar as they use a certain vernacular and express certain ideas congruent with the dominant narrative (i.e. the Black Pill ideology).

The present study seeks to overcome previous methodological limitations by adopting a computational social science approach²² to characterize all the contributors to the three most popular Incel forums, the subreddits (i.e. forums in Reddit): *r/Braincels*, *r/Incels*, and

r/IncelsWithoutHate. Reddit is the platform that has hosted the most Incel-related forums, many of which have been the focus of previous studies (e.g. ^{15,16,23}). While all three subreddits were banned due to repeated violations of Reddit's policy prohibiting incitement to violence: *r/Incels* in 2017 (more than 42,000 subscribers before the ban), *r/Braincels* in 2019 (more than 41,000 subscribers before the ban), and *r/IncelsWithoutHate* in 2021 (more than 30,000 subscribers before the ban) their data remains available for analysis.

Reddit is a social media platform comprised of more than 3.5 million forums, called "subreddits" ²⁴, and it is the 20th most visited website in the world, with more than 430 million monthly active users.^{25,26} Each subreddit is related to a specific topic (e.g. *r/movies*, *r/sports*, *r/news*), where users can freely post (i.e. start a new conversation thread) and comment (i.e. contribute to previously existing conversation threads). Moreover, Reddit enables individuals to contribute to different subreddits using the same account. Since each user's posting and commenting history is publicly available, this allows for the collection of information about all the other subreddits to which they have contributed, effectively allowing for their characteristics to be identified through an analysis of their main interests and issues. The study reported in this paper has two objectives.

Objective 1: To characterize the main interests and concerns of Incels who participated in *r/Incels*, *r/Braincels*, and *r/IncelsWithoutHate* by analyzing the other public subreddits to which they contributed (i.e. wrote a post or a comment). Then, using a community detection algorithm, subreddits will be clustered into subgroups of shared interests to identify communities of subreddits suggestive of different Incel profiles.

Objective 2: To identify the chronological patterns of contributions (i.e. posts and comments) of each user over their entire contribution history in Reddit. This will allow for the identification of the evolution of their main interests and issues over time, thus allowing for the identification of interests and issues that preceded and succeeded their participation in an Incel forum.

It is hoped that the results from this study may improve the detection of online radicalization and help to understand how Incels can progress toward more extreme content even in the absence of a recommender system (i.e. the absence of algorithmic radicalization). Additionally, it is hoped that the findings of this study may facilitate the development of more enlightened, targeted, and timelier approaches to prevention and intervention with Incels, to reduce the incidence of their involvement in real-life violence.

Methods

Ethics and Data Collection

According to the "Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans—TCPS 2" (2018), which applies to research conducted in Canada, analyses of publicly available data with no possibility of identifying individuals do not require ethics board approval nor the use of informed consent procedures. Since only publicly available data were used, this study was exempt from Institutional Review Board (IRB) approval. However, to further ensure respect of privacy, we made sure that data were only collected from publicly available profiles of users; that no identifying data were collected (e.g. name, address, phone number), and that no participants were contacted.

Participants

We extracted (“scraped”) all our data using PSAW: a Python Pushshift.io API Wrapper (Python Software Foundation). PSAW wrapper allows for the automation of searching of public Reddit posts and comments in the archiving platform Pushshift.²⁷ First, we scraped all the written posts and comments (i.e. contributions) made in each of the three subreddits, from their founding to the date they were banned. In total, we collected 116,266 unique contributors to these Incel forums (after removing bots, which are automated programs, e.g. “*I am a bot, and this action was performed automatically.*”). Then, for each user, we scraped their entire posting/commenting history, from the creation of their account to December 31st, 2021. We set this upper boundary because data collection was carried out in January 2022. For each post and comment, we extracted the title, full text, time of posting, and the name of the subreddit in which it was written. This procedure yielded 178,154,785 contributions, starting January 2006, in 289,275 unique subreddits.

Objective 1: To Characterize the Main Interests and Concerns of Incels

This analysis adopted an approach previously used in a study on eating disorders.²⁸ In line with this previous work, we focused our analysis on a subset of subreddits, due to the difficulty in interpreting a network composed of the entirety of the 289,275 unique subreddits. To facilitate the interpretability of results, we retained subreddits that were used by at least 10% of our participants. Also in line with the aforementioned study, we did not include r/AskReddit, since it is the most popular subreddit in terms of posts and comments²⁹ and would thus be strongly associated with all subreddits. To prevent potential biases caused by high-frequency posters and commenters, multiple contributions to the same subreddit were counted as one (i.e. one unique subreddit per unique user). With the subreddits retained (i.e. used by 10% of users and more), we estimated a weighted and undirected network analysis using the R package qgraph.³⁰ The layout of the nodes (i.e. subreddits) of the network was selected in accordance with the Fruchterman-Reingold force-directed placement algorithm.³¹ The algorithm positions nodes with the most connections in the center of the graph, and the least connected nodes in the periphery. We then used the walktrap algorithm³² to identify communities, or subgroups, of densely connected nodes (i.e. identify subreddits with similar contributors within the structure of our network). The algorithm works by identifying communities *via* random walks, where shorter random walks tend to stay in the same community.^{30,32} Walktrap was used in a previous study to detect communities of subreddits among users with eating disorders²⁸, and has shown to be more reliable than other algorithms when the number of nodes is inferior to 1000.³³

Objective 2: To Identify the Chronological Patterns of Contributions

To attain our second objective, we ordered chronologically the first (earliest) contribution of each user to every subreddit. The date of each user’s first contribution to a non-Incel forum was compared to his first contribution to an Incel forum. For every subreddit, the median difference in the number of days was computed, along with

confidence intervals, based on the sign test.³⁴ For every subreddit, one-sample sign tests were used to determine whether the median difference in the number of days was significantly different from 0 (i.e. the day of the first contribution in an Incel forum). A visual presentation was provided to aid in the interpretation of the results.

Results

Objective 1: To Characterize the Main Interests and Concerns of Incels

We retained 144 subreddits to which 10% or more users have contributed. The full list of subreddits, along with their descriptions, are available in [Supplementary Material S1](#). The result of the network analysis with community detection is presented in [Figure 1](#). The percentage of users who commented in one or many subreddits comprising each identified community, along with the percentage of user overlap between communities, is presented in [Table 1](#). The walktrap algorithm detected 6 distinct communities of

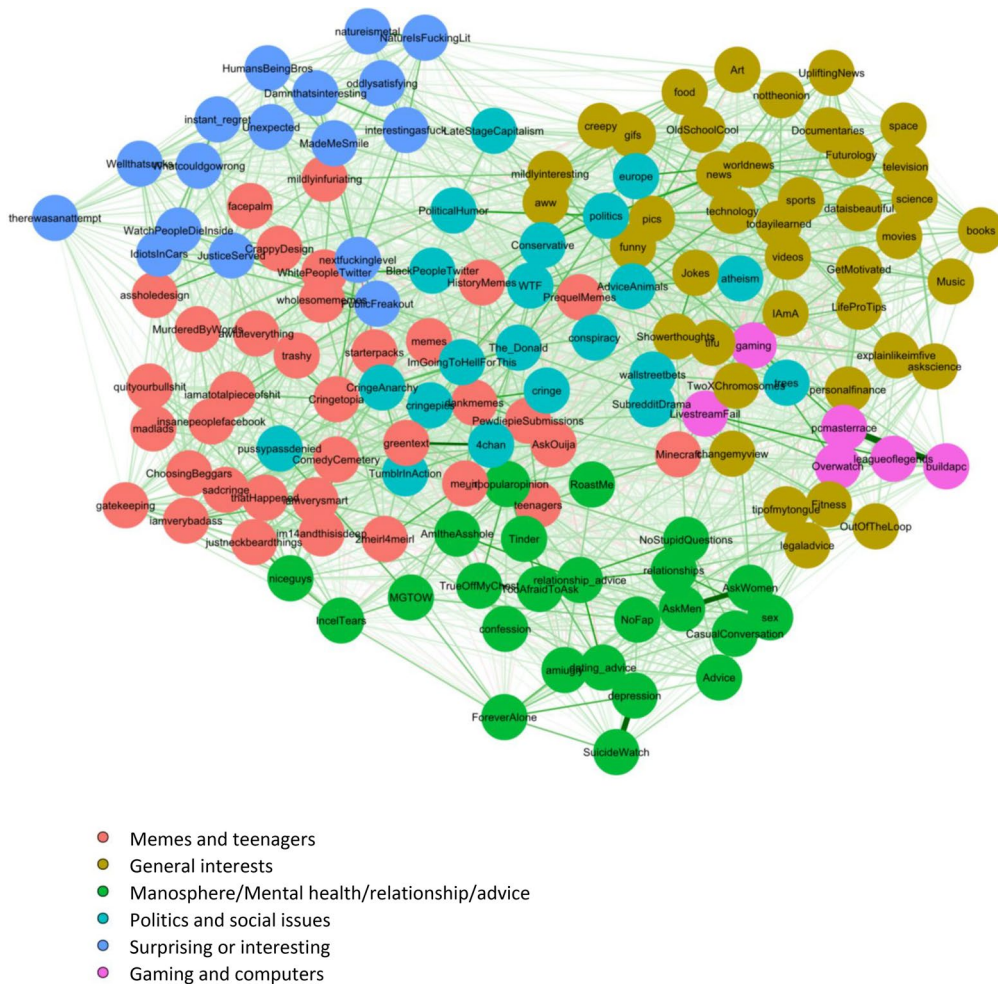


Figure 1. Network of subreddits to which incel forum users contributed.

Table 1. Overlap between users of identified communities of subreddits (in %).

	1	2	3	4	5	6
1. Memes and teenagers	67.6%	61.3%	62.0%	55.7%	46.1%	43.0%
2. General interests		73.2%	66.0%	59.0%	47.0%	45.0%
3. Manosphere/Mental health/relationship/advice			77.8%	58.5%	46.4%	44.2%
4. Politics and social issues				63.5%	44.3%	42.0%
5. Surprising or interesting					48.6%	35.3%
6. Gaming and computers						47.4%

subreddits. The first, labeled “*Memes and teenagers*”, contained subreddits catering to teen interests and to the sharing of jokes and “memes” (i.e. funny images, usually embellished with text) (e.g. r/teenagers, r/memes); 67.6% of users contributed to this community of subreddits. The second community, named “*General interests*”, comprised popular subreddits widely used by Reddit users (e.g. r/Music, r/books, r/science); 73.2% of users contributed to this community. The third community, “*Manosphere/Mental Health/Relationship/Advice*”, was a mix of subreddits related to Manosphere groups (e.g. r/MGTOW), mental health issues (e.g. r/depression, r/SuicideWatch, r/amiugly), and relationship issues and advice-seeking (e.g. r/AskMen, r/sex, r/dating_advice); 77.8% of users contributed to this community. The fourth community was named “*Politics and social issues*,” since the subreddits that were included in this community (e.g. r/The_Donald, r/Conservative, r/politics) offered platforms to discuss political and social issues; 63.5% of users participated in this community. The fifth community, named “*Surprising or interesting*”, was a mix of subreddits that supported the sharing of pictures, GIFs (*Graphics Interchange Format*, i.e. animated pictures), and videos displaying content that can be described as surprising or interesting (e.g. r/Unexpected, r/Interestingasfuck); 48.6% of users contributed to subreddits in this community. Finally, the sixth community was labeled “*Gaming and computers*,” since it was comprised of subreddits related to computers and gaming (e.g. r/buildapc, r/pcmasterrace, r/gaming); 47.4% of users participated in subreddits that were part of this community.

Objective 2: To Identify the Chronological Patterns of Contributions

The visual presentations of chronological posting patterns, in terms of the median difference in the number of days between the first (earliest) contribution users made in an Incel subreddit (i.e. r/Incels, r/Braincels, and r/IncelsWithoutHate) and their first contribution in non-Incel subreddits are presented in [Figures 2, 3 and 4](#). To improve visualization and facilitate interpretation, we only present results from subreddits that were part of communities deemed of particular interest for improving our understanding of the development of the Incel identity over time, namely “*Manosphere/Mental health/relationship/advice*”, “*Politics and social issues*”, and “*Gaming and computers*”. Full results, including both the subreddits that were excluded from the current section and the user count for each subreddit, are presented in table format in [Supplementary Materials \(S2, S3, and S4\)](#).

[Figure 2](#) presents the median difference in the number of days between the first contribution to r/Incels and the first contribution to the other subreddits retained. We identified a pattern where users contributed to multiple subreddits related to “*Politics and social issues*” (e.g. r/atheism, r/The_Donald, r/politics) several weeks prior to their first contribution in r/Incels. Contributions to subreddits in the community “*Gaming*

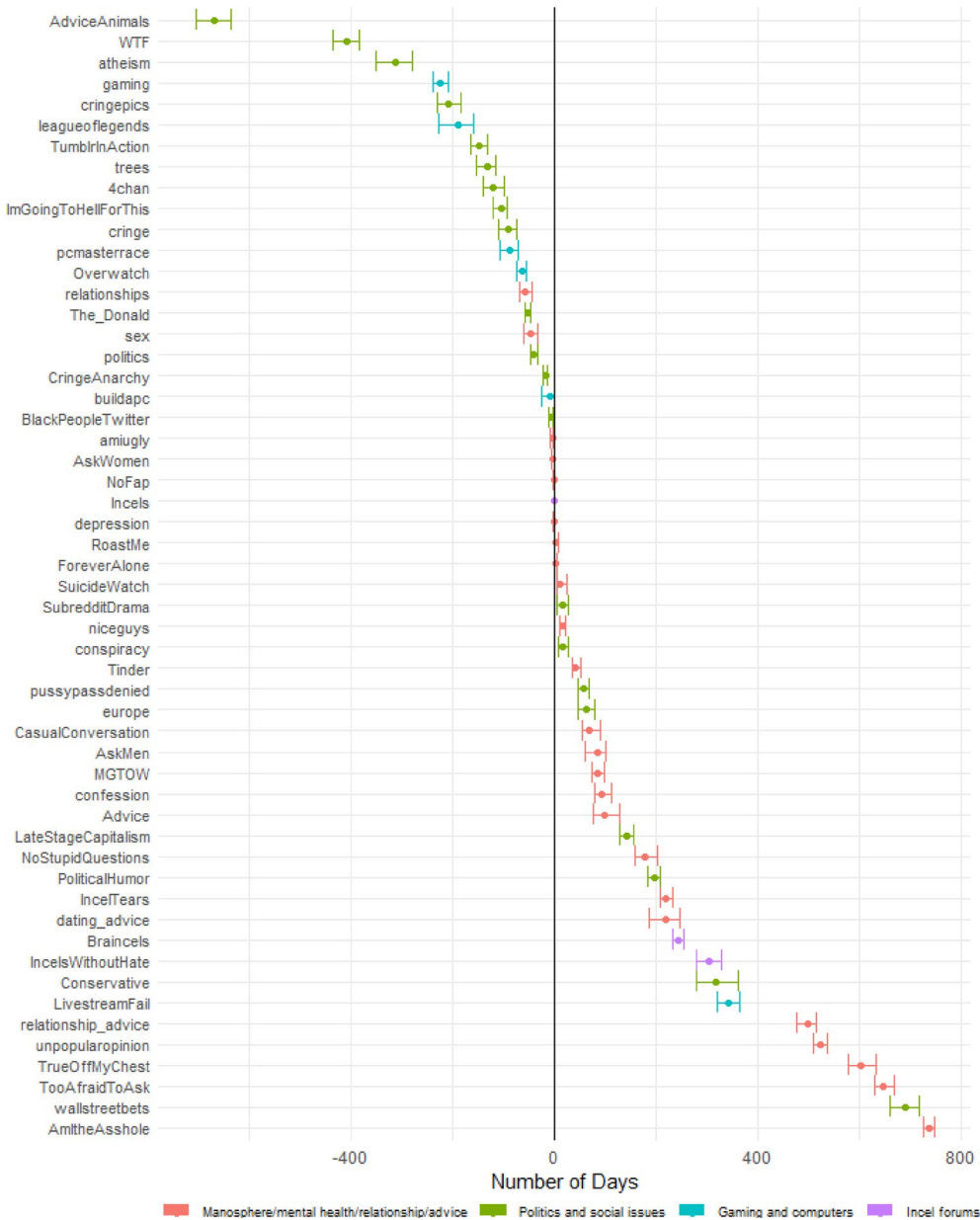


Figure 2. Median difference (with 95% CI) in the number of days before first contribution to r/incels ($n=31,273$).

and computers” also preceded the first contribution in r/Incels. The earliest contributions to subreddits in the community “Manosphere/Mental health/relationship/advice” were made in r/relationships (median difference = -55.5 days; [95% CI, -68 to -44]; $p < .001$), r/sex (median difference = -45 days; [95% CI, -59 to -32]; $p < .001$) and r/amiugly (median difference = -3 days; [95% CI, -7 to -1]; $p < .001$). Other contributions in this community of subreddits (i.e. r/AskWomen, r/NoFap, r/depression, r/RoastMe) were made in the same time span as the first contribution in r/Incels (i.e. the median

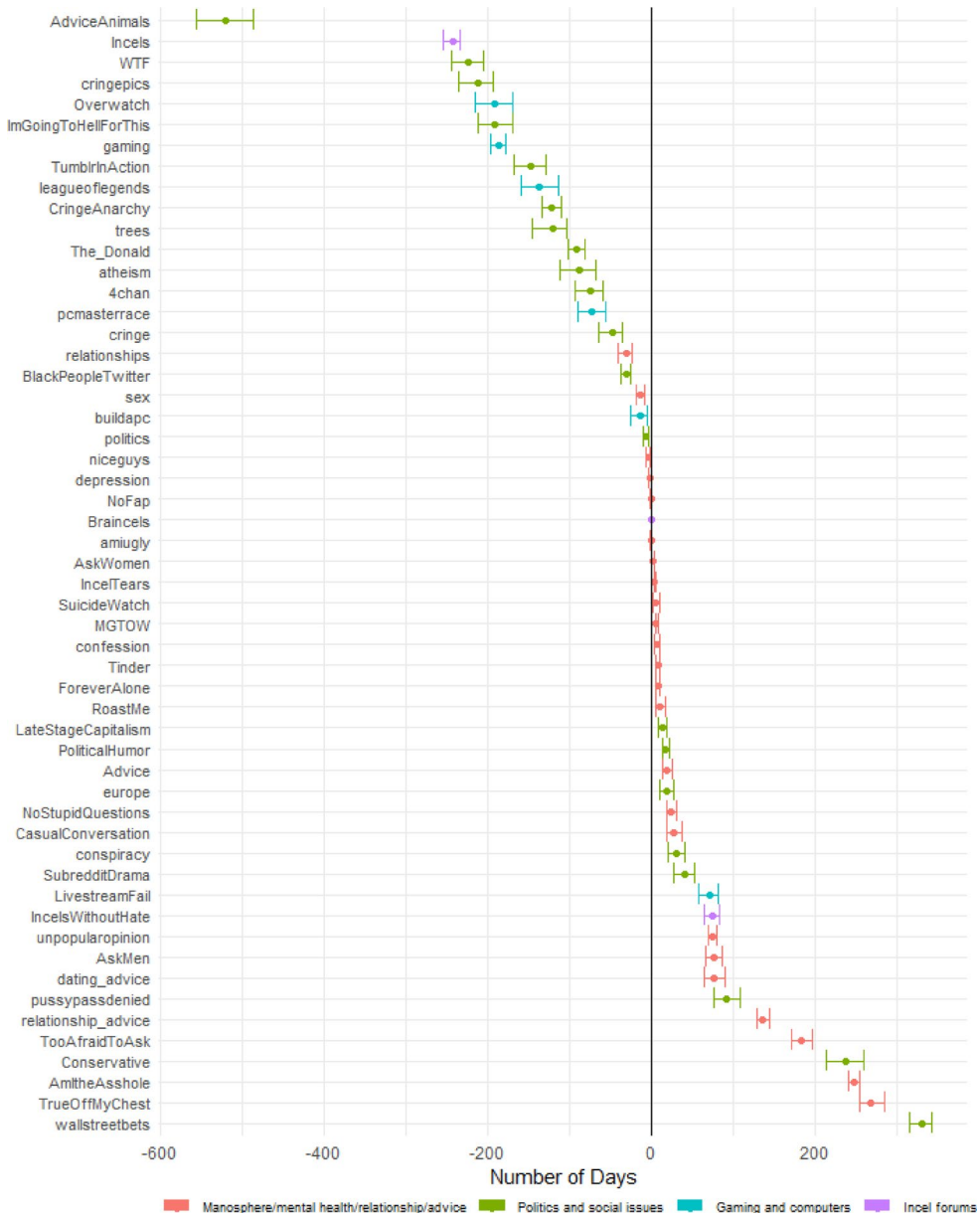


Figure 3. Median difference (with 95% CI) in the number of days before first contribution to r/braincels ($n=61,136$).

did not significantly differ from 0). Most subreddits in this community succeeded users' initial engagement with r/Incels (e.g. r/SuicideWatch, r/Tinder, etc.),

A similar chronological pattern in posting and commenting is visible among r/Braincels users (Figure 3). Users tended to engage with subreddits in communities "Politics and social issues" and "Gaming and computers" several days prior to their first contribution in r/Braincels. The median difference in the number of days from the first contribution to r/Braincels and the first contribution in other subreddits of the

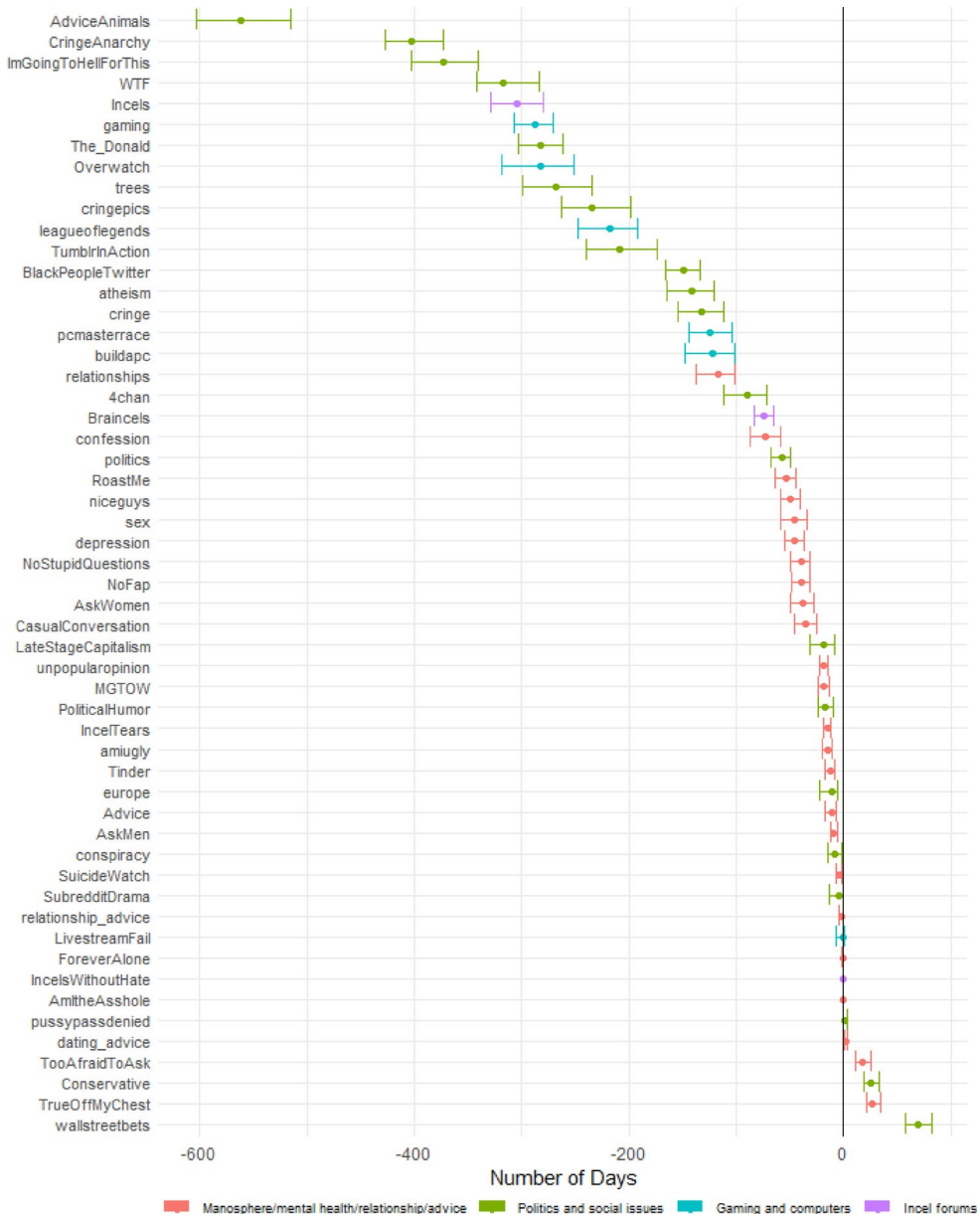


Figure 4. Median difference (with 95% CI) in the number of days before first contribution to r/IncelWithoutHate ($n = 45,728$).

community “Manosphere/Mental health/relationship/advice” were close to 0 or exceed 0. The subreddits r/relationships, r/sex, r/niceguys, and r/depression were the only subreddits that preceded users’ first engagement with r/Braincels.

Finally, among users of r/IncelsWithoutHate, since the subreddit was founded (April 2017), which was later than the other two, the majority of first contributions to non-Incel subreddits were made several days and weeks before their first contribution to r/IncelsWithoutHate (Figure 4). The chronological posting pattern is similar to what

was observed among users of r/Incels and r/Braincels. Users who contributed to subreddits in the communities “*Politics and social issues*” and “*Gaming and computers*” did so considerably earlier than contributors to subreddits in the community “*Manosphere/Mental health/relationship/advice*,” which were closer to the first contribution to r/IncelsWithoutHate.

As a sensitivity analysis, we computed the median difference in days between the initial contribution to r/Braincels and r/IncelsWithoutHate and subreddits in the communities “*Politics and social issues*” and “*Manosphere/Mental health/relationship/advice*” without the users of r/Incels and r/Braincels: for r/Braincels, we removed users of r/Incels, and for r/IncelsWithoutHate, we remove user of both r/Incels and r/Braincels. This was done to determine if chronological posting patterns of “new” Incel forum users differed from the older ones. Results are available in [Supplemental Materials S5 and S6](#). Similar patterns to those found in [Figures 3 and 4](#) were identified: contributors to subreddits in communities “*Politics and social issues*” and “*Gaming and computers*” tended to engage with them several days prior to their first contribution to an Incel forum, and contributors to subreddits in the community “*Manosphere/Mental health/relationship/advice*” participated in them closer in time to their first contribution to an Incel forum, or after it.

Discussion

Our findings concur with previous observations¹⁴ which suggested that profiles of Incel forum users are more heterogeneous than what is usually depicted in the media. Results from the community detection algorithm suggest that there are six communities (or subgroups) of content to which Incels are drawn. These subgroups of subreddits attract members with seemingly different interests and issues, but they also tend to share an important proportion of the same userbase.

Three communities of subreddits (“*General interests*”, “*Gaming and computers*” and “*Surprising or interesting*”) indicate that users of Incel forums have broad interests outside of their principal concern with relationship issues and sex. Participation in these communities indicates that most Incels are knowledgeable of popular internet and gaming cultures, which may explain how they were able to create an online subculture that is difficult to penetrate by outsiders ignorant of their vernacular (e.g. *Chads*, *Stacys*, *Normies*, *Red/Black Pill*, etc.), which itself evolved from popular Internet memes. In relation to video games, while our findings do not allow for a robust theorization of their impact on the development of the Incel identity, previous studies suggest that certain factors may make male gamers, who struggle with their sexuality, more susceptible to Incel ideas. These factors include stereotypical gender representation, such as hypermasculine male characters and hypersexualized female characters.^{35,36} Violent video games have also been linked to endorsing a view of masculinity that included aggression, dominance, toughness, and the suppression of emotions.³⁷ These elements may predispose male players to develop sexist worldviews that can escalate into misogyny. Furthermore, video game forums have been characterized as masculinized social spaces, where gender harassment and hate speech against women can occur, as seen in the #Gamergate controversy.^{38,39}

The community “*Manosphere/Mental health/relationship/advice*” comprises themes that are consistent with common depictions of Incels, both in the media and in the general population. Participants in our study displayed the highest rate of engagement

with subreddits comprising this community (77.8%), suggesting that most Incels have concerns relating to romantic relationships and to mental health. They also tend to engage with other subreddits tinged with an anti-feminist ethos (i.e. r/MGTOW).

Previous research reported that suicide is a common theme found in discussions in Incel forums (e.g. ^{23,40,41}). Our analysis similarly shows that suicide is an issue for Incel forum users and that they tend to seek support for their suicidal thoughts and depressive symptoms in other forums (i.e. r/SuicideWatch and r/depression). The proportion of participants who used these supports (10.52% for r/SuicideWatch; 14.55% for r/depression) suggests that Incels may have a higher prevalence of lifetime suicidal ideation than the average national prevalence observed across 17 countries, which is 9.2%.⁴² While it was not possible to assess the severity of depressive symptoms, the high rate of participation in a forum dedicated to sharing depressive thoughts and seeking support suggests that Incels probably exhibit a higher-than-average prevalence of depression, when compared to other population-wide findings.^{43,44} These results are concerning when considering the high prevalence of teens and young adults among our participants, as suggested by the community “*Memes and teenagers*”, and in line with previous studies^{10,12,13,19} which also found Incels to be younger than the median age in developed countries.⁴⁵

The assessment of chronological posting pattern suggests that users who engage with subreddits in the community “*Manosphere/Mental health/relationship/advice*” have relationship (r/relationships and r/sex) and mental health issues (r/depression, r/amiugly [body image issues], r/noFap [porn addiction issues]) which predate their engagement with an Incel forum. Suicidal thoughts (r/SuicideWatch) tend to follow participation in an Incel forum by a few days, potentially indicating that fatalistic notions promoted by the Black pill ideology may exacerbate or trigger suicidal ideation. A possible explanation, which draws on the cry of pain model of suicidality⁴⁶, suggests that Incels’ feelings of defeat and rejection generate a sense of “entrapment,” or inescapability, which, in the absence of healthy coping mechanisms and adequate social supports, can generate the “helplessness script” associated with suicidality. The idea that their situation is not amenable to improvement is at the very core of the Black pill ideology. This finding should be interpreted with caution since r/IncelsWithoutHate users tended to use r/SuicideWatch before contributing to the Incel forum. Nonetheless, a survey-based study reported that Incels describe the Black pill as “depressing” (75%) and “worrying” (70.2%). Furthermore, participants’ self-reported intensity of suicidal thoughts significantly correlated with agreement that the forum made them feel depressed.¹²

The community “*Politics and social issues*” indicates that many Incel forum users engage with subreddits that host political or social debates. While subreddits constituting this community may appear to be neutral spaces where one can dispassionately discuss these topics, many have been subject to considerable controversy. For instance, the “cringe” family of subreddits (e.g. r/cringe, r/CringeAnarchy, r/cringepics), while seemingly innocuous in name, are notorious for the bigoted and hateful content, harassment, bullying, and direct calls for violence that are shared on their discussion boards.⁴⁷ Comparable in the hateful content that is shared in discussions, subreddits such as r/ImGoingToHellForThis, r/TumblrInAction, and r/4chan are noted for using politically incorrect humor and “edgy” memes as ways of “cloaking” bigoted discourse.^{48,49}

The controversial r/the_Donald has gained more public attention than other subreddits in the community “*Politics and social issues*,” in part due to Donald Trump himself engaging

with members of the community through an *Ask Me Anything* session (i.e. a session where a person, usually a celebrity, responds to questions submitted *via* comments), but also due to the subreddit's propensity to spread fake news and to promote conspiracy theories.^{50,51} This is in addition to other racist and offensive content that is commonly posted (r/the_Donald was eventually banned on June 29, 2020). The important proportion of our participants (63.5%) who participated in hateful subreddits is interesting in the context of the posited link between Alt-right ideologies and the Manosphere.⁵² The Southern Poverty Law Center defines the Alt-right, "Alternative Right", as a set of far-right ideologies, groups, and individuals, characterized by an important online presence and whose core belief is that multicultural forces, political correctness, and social justice undermine white people and "their" civilization.⁵³ A recent paper has lent credence to this idea by finding that Reddit users who engage with Manosphere-related subreddits (e.g. r/MGTOW) tend to eventually drift toward Alt-right subreddits (e.g. r/the_Donald) significantly more than carefully chosen counterparts.⁵⁴ To our knowledge, we have conducted the first study that also considered the previous posting and commenting history of contributors to Manosphere-related subreddits (i.e. Incel subreddits). Our findings indicate that an important proportion of first-time contributors to Incel forums do tend to subsequently engage with other hateful subreddits, but we found that an even greater proportion of users had already participated in these subreddits. This has important implications for understanding the group dynamic and the nature of posts and comments seen in Incel forums. New users, who come to Incel forums with previous experiences of hateful postings, may impact the conversational dynamics of Incel forums and influence the content that is predominantly shared on their discussion board.

This influence may in part be seen in the politicization of the dominant discourse, due to the participation of users with more definite political/ideological beliefs. There is a notable similarity between the value system underpinning Alt-right/far-right and Manosphere ideas, seen in their shared appreciation of order, hierarchy, and traditional values.^{55,56} Both groups also share a sense of victimhood regarding movements for equality.⁵⁷ This link between misogyny and the far-right has led to action plans for countering terrorism and violent extremism in Sweden and Finland. These plans highlight the shared belief in archaic gender stereotypes and norms that associate masculinity with violence.^{58,59}

As previously noted⁶⁰, while earlier versions of Incel forums were primarily focused on personal grievances, they have since evolved to articulating political ideas rooted in misogyny and male supremacy. These forums now profess a hateful ideology advocating for the subjugation of women and rigid gender roles.⁵³ According to Kalish and Kimmel⁶¹, their resentment toward women can be understood as a manifestation of "aggrieved entitlement" – a belief in patriarchal entitlement whereby men are entitled to women and become angry when their advances are rejected. This anger is rooted in the belief that women are obligated to provide sexual access to men, and that any refusal is unacceptable. The incel rhetoric opposes the sexual revolution and feminism, since they have empowered women to make their own sexual choices and have multiple partners in their lifetime. According to this view, women are enabled to sleep with only the most attractive men, or "Chads," while disregarding less attractive Incels.^{62,63} In response to these societal changes, a variety of political ideas can be seen promoted in Incel forums, such as: enforced monogamy, legalization of rape and pedophilia, government-sponsored girlfriends, restoration of the patriarchy, and equal

distribution of women amongst men.^{60,62,64–66} As Cottee⁴¹ remarks, the Incel subculture has transformed “*what are private and practical troubles into an overarching political grievance against women.*” Although not all forum users may hold misogynistic beliefs in their personal lives – they may engage in “shitposting,” an online activity which involves posting offensive content to elicit a reaction –, the overall language and rhetoric used in Incel forums presents a clear anti-feminist political and ideological discourse.

The characterization of Incels as political and ideological figures raises questions about whether their real-world acts of violence meet the criteria for terrorism. It is important to note that beliefs about race, gender, and heteronormativity shape our view of whose violence is considered to be “terrorist.”⁶⁷ In comparison to other ideologies, it is only recently that misogyny/male supremacy has started being considered to be a motivating ideology for acts of violence.^{68,69} Both the Canadian Criminal Code and the US Federal Bureau of Investigation (FBI) define violent activities as terrorism if they are carried out with the intention to intimidate the public or government, cause death or harm, and are committed for a political, religious, or ideological motive.^{70–72} Although not all Incel attacks may meet the criteria for terrorism, some incidents, such as the 2014 Santa Barbara attack and the 2018 Toronto van attack could be considered as terrorism due to the perpetrator’s explicit expressions of intent to harm, intimidate the public, and their extremist ideology.^{33,64,73} The classification of Incel attacks as terrorism is contested by some.⁷⁴ However, Canadian authorities have charged the perpetrator of the 2020 Toronto machete attack for terrorism due to his adherence to the Incel ideology.⁷⁵ Recent findings also suggest that Incel violence is broadly supported by forum users, with less than 5% of comments about the Toronto van attack expressing opposition to the violence.⁶² Moreover, 20% of justifications for violence included calls for concrete political changes (e.g. restoration of the patriarchy).⁶²

It is important to note that the formation of Incel forums, along with the associated subculture, did not occur in a vacuum. Their development is best understood as being the product of several waves of unaffiliated individuals congregating in an online platform where discussions became focused on a specific topic or issue. It was previously observed that a migration from older Manosphere communities (e.g. r/MRA, r/PUA) to newer ones (e.g. r/MGTOW, r/Incels) took place in Reddit.⁷⁶ Our descriptions of users of these communities in terms of their main interests and issues may help us to better understand how these communities were formed. Unlike YouTube^{6,54,77}, Reddit did not have a recommendation algorithm that suggested content to its users based on their history, until very recently.⁷⁸ In the absence of a recommender system steering users toward certain subreddits, our findings suggest that user migration could be better explained by a process of self-selection, whereby individuals with particular interests and worldviews consciously choose to engage with these forums. A recent analysis of users of r/conspiracy (a conspiracy theory focused subreddit) supports the hypothesis of self-selection.⁷⁹ Relying on Buss’s⁸⁰ purported mechanisms by which personality and social processes are linked (namely *selection*, *evocation*, and *manipulation*), our results suggest that a certain profile of individuals (i.e. young adults and teens, with an interest in gaming, having relationship and mental health issues, who engage with other hateful subreddits) have a higher probability of being drawn to an

Incel forum (i.e. *self-selection*). Once they start posting and commenting in these forums, they receive positive feedback (i.e. positive reinforcement) from other users in the form of comments supportive of their worldview (i.e. *evocation*). This may also be achieved through Reddit's system of "upvoting" (i.e. raising the visibility of a comment by endorsing it). Users who "upvote" or support certain comments, and "downvote" or criticize others, can exert their influence in the forum through a process of *manipulation*. This process can be observed in the posting behavior of the minority of users who share more hateful content than the average user, as observed by Jaki, et al.¹⁴, which may contribute to nudge the general discussion in these forums in a more hateful direction and/or cause emotional contagion amongst users.⁸¹

Potential Intervention Strategies

Previous work has sought to address the risk Incels pose to national security.⁸² While the misogynist and violent content being shared in their forums may lead to radicalization of opinions, it does not follow that this undoubtedly leads to a concomitant radicalization of behavior.^{13,83} The *two-pyramids model of radicalization*⁸³ suggests that the relationship between opinions and behavior is generally weak and that radical opinions are not needed nor sufficient for radical actions to occur. Considering this theoretical model, along with the low incidence of violent attacks perpetrated by self-identified Incels, it may be difficult to build accurate and reliable detection systems capable of identifying online users who are at risk of committing violent crimes in the real world. A more promising course of action would be to adopt a systemic approach to intervention and prevention. In the following paragraphs, we propose a comprehensive approach to prevention and intervention, following Bronfenbrenner's systems approach.⁸⁴

First, at the individual-level (*ontosystem*), our results are consistent with previous research and suggest that the average user of an Incel forum deals with issues relating to loneliness, suicidal thoughts, depressive symptoms, body image, and relationship issues. Interventions at this level should focus on addressing Incel forum users' maladaptive social cognitions and building their (hetero) social and emotional skills to help them cope with loneliness and interpersonal problems. Cognitive distortions related to body image and feelings of hopelessness can similarly be addressed through individual therapy. Research also suggests that clinicians should evaluate clients who identify as Incels for psychological trauma related to a history of bullying¹³, and help deconstruct their internalized stigma about virginity.⁸⁵ Offering online counseling or support groups may be more appealing or accessible to those who feel uncomfortable seeking help in person. Furthermore, as Peterson and Densley⁸⁶ suggested for preventing mass shootings, crisis support, and suicide prevention programs should be expanded, and access to firearms should be restricted. It is hoped that by intervening at the individual-level (i.e. reducing the distress caused by mental health issues and social isolation), people identifying as Incels would be less inclined to seek social support from Incel forums, and be less inclined to adopt the Black pill narrative that may foster hatred toward women and themselves. This preventive approach of intervening before the Black Pill ideology is adopted, should be more effective than later interventions once they have already internalized these beliefs. This would also make it harder for therapists to help them, since they are not equipped in treating ideology.⁶⁵

S, Incel communities could not have formed had there not been online platforms to host their discussion boards (i.e. *exosystem*). Thus, it is possible to target intervention efforts at organizations that host these forums. Since Alt-right and other politically extreme forums inform the dynamic and rhetoric present in Incel forums, countermeasures should address their content as well. Platforms such as YouTube and Reddit (with its new recommendation system) can leverage networks to “nudge” users toward resources that are tailored to their mental health needs, instead of pushing them to more extreme content. Although the process of self-selection may offer a more nuanced explanation for forum use, network analyses, such as presented in this paper, may be valuable in detecting and correcting algorithms that systematically lead users toward more extreme content (e.g. Youtube; ^{6,87}).

Companies may prioritize their business models over the potential harm caused by their algorithms. Therefore, it may be useful to introduce legislation that mandates responsible algorithmic practices. For instance, the UK Online Harms White Paper⁸⁸ outlines the need for companies to ensure their algorithms do not promote extreme or unreliable material solely for the sake of user engagement. Also, requiring algorithmic transparency, such as Facebook’s “*why am I seeing this?*” tool⁸⁹, may allow users to have greater control over what is presented to them. Furthermore, by introducing mandatory algorithmic auditing requirements⁹⁰ policymakers can strengthen the effectiveness of such policies and ensure that companies are held accountable for their algorithms’ impacts on users.

Another way of intervening at the *exosystem* level is through community-wide moderation. If user-level moderation fails (e.g. forum moderators removing controversial posts) research has shown that quarantining controversial Reddit communities can decrease the influx of new users while not increasing the levels of misogyny and racism within it.⁹¹ Reddit’s quarantine procedure communicates that the controversial subreddit is still accessible, but that users who wish to visit it are greeted with a splash page warning them that it is under quarantine and requiring them to explicitly opt-in to view its content. In this context, quarantining is a compromise that can provide some disruption to online radicalization, while still allowing seemingly controversial communities to preserve their freedom of speech. This may serve as a softer alternative to total bans, which have been shown to lead, in some instances, to the creation of a standalone website with increased levels of toxicity and radicalization.⁹² Whittaker et al⁸⁷ propose a co-regulatory scheme as a potentially effective approach for addressing the problem of extremist content and its algorithmic amplification. This approach would require collaboration between the government, industry, and civil society to generate innovative solutions.

Finally, at the *macrosystem* level, it is necessary to deconstruct certain tenets of masculinity preventing men from seeking mental health support.⁹³ Individual-level interventions (e.g. therapy) would potentially have a greater reach if accompanied by a comprehensive campaign that promotes positive messaging around help-seeking and encourages open conversations about mental health. By promoting the normalization of help-seeking and reducing the sense of shame or embarrassment associated with seeking support, more men may feel comfortable and encouraged to seek help. More importantly, if subscribing to the misogynistic Black pill ideology can be construed as a form of radicalization⁸, it follows that preventing future radicalization will require

challenging the ideas that constitute this worldview. The Black pill, which provides Incels with a narrative to explain their sexlessness, is a product of hegemonic masculinity.⁶⁵ As such, focusing exclusively on individual-level interventions (e.g. individual therapy) fails to address the broader societal and cultural issues surrounding gender inequality and misogyny⁶⁵, the latter having particularly proliferated online.⁹⁴ Thus, it is vital to challenge beliefs such as male entitlement, rigid gender roles, and the ownership of women. One way of going about it is to support and work with organizations that have extensive experience in addressing gender-based violence.⁶⁵ Deconstructing the systems that perpetuate violence against women, such as misogyny, male supremacy, and patriarchy⁶⁵, will likely require a sustained effort over time. In the long term, it may be more effective to promote gender equality through educational initiatives, including comprehensive sexual education programs that emphasize the importance of consent, and that challenge traditional views of masculinity as dominant and aggressive.^{15,58,59,65} Schools have a crucial role to play in cultivating a culture of respect and inclusion, which can help to reduce the incidence of gender-based violence and promote healthy relationships between all individuals.

Limitations

Although we analyzed the three subreddits with the largest number of Incel users recorded, a new standalone website (incels.is) started to host most of current Incel-related discussions. However, the fact that other research has documented that users from the banned subreddits we investigated have flocked to this new website, suggests that our findings are probably, at least to some extent, generalizable to users of this website as well.^{76,92} Another limitation, common to all studies using data gathered in forums, is that while Reddit users must create a pseudonym to engage with subreddits, nothing prevents them from creating multiple usernames and contributing more than once under different usernames. No data exist on the prevalence of this practice in Reddit.

Results of this study should be interpreted with caution since our analyses have relied upon user contributions as indications of their issues and interests. We may not have properly modeled the issues and interests of users who only read posts and comments but did not actively contribute to them (i.e. *lurkers*). Furthermore, we do not know the nature of people's motivations for contributing to the subreddits included in our analyses. We have assumed that their engagement with the subreddits indicates an interest or a concern related to the topic discussed in these subreddits. Also, since we only considered their first (earliest) contribution, we do not know the true level of engagement these users had with those subreddits over time.

Conclusion

Our study is one of the first to characterize the main interests and concerns of Incel forum users by analyzing a large volume of empirical data on their internet participation in various subreddits. Our findings confirm common news media portrayals of Incels as mostly young males struggling with romantic and sexual relationships, loneliness, body image issues, with depressive symptoms and/or suicidal thoughts, who

have a history of using other hateful and controversial forums. An analysis of their chronological posting patterns suggests that their engagement with content related to mental health occurred at about the same time as their earliest engagement with an Incel forum. In the case of r/Incels and r/Braincels, our data does not allow us to confidently determine if depressive symptoms and suicidal behavior predated or were subsequent to their initial engagement with the Incel community. In the case of r/IncelsWithoutHate, the data suggests that these issues predated their interest in Incels. Overall, participants' contributions to other controversial forums tended to significantly precede their first contribution to an Incel forum by several days or weeks, suggesting longer usage of these forums. In the absence of a recommender system, the growth in the number of users of Incel forums in Reddit is best understood as being a process of self-selection. Therefore, changing an algorithm that facilitates radicalization is not a feasible intervention in this context. Intervention and prevention efforts should yield greater results if planned and implemented using a comprehensive systemic approach.

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