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a protocol for a scoping review**

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# BMJ Open Reducing the incidence and impact of peer-to-peer online trolling: a protocol for a scoping review

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## ABSTRACT

**Introduction** Governments worldwide are committed to reducing the prevalence of peer-to-peer online trolling. The practice of peer-to-peer online trolling, which is broadly defined as where a user intends to cause disruption or conflict online for their own amusement or advantage, is a widespread pervasive and damaging behavior, affecting over one-third of all social media users. There remains, however, a substantial barrier to addressing this behaviour due to a lack of understanding of peer-to-peer online trolling and its unique psychopathology that distinguishes it from other forms of peer-to-peer online abuse such as cyberbullying and flaming, as well as the primary information technology approach used to investigate trolling. Providing a synthesis of peer-to-peer online trolling research will assist organisations, governments and educators in addressing this deviant behaviour online.

**Methods and analysis** This protocol follows the six-stage scoping review process proposed by Arksey and O'Malley. Identifying the scoping review research question (stage 1) is followed by discussion on how studies will be selected (stage 2). We then discuss how we will determine which studies will be included in the scoping review (stage 3), as well as chart the data involved for each study included (stage 4). In stage 5, the scoping review protocol gathers, synthesises and reports the results, and consults with stakeholders about the initial protocol specifications (stage 6).

**Ethics and dissemination** As the scoping review methodology focuses on incorporating information from available publications, ethical approval is not required. An article summarising the scoping review results will be submitted for publication to a journal, presented at appropriate conferences and disseminated as part of future workshops with professionals and educators involved in reducing online trolling.

## INTRODUCTION

Peer-to-peer online trolling, which is broadly defined as where a user intends to cause disruption or trigger conflict with others for the purposes of their own amusement using computer-mediated communication,<sup>1</sup> is a prevailing and harmful behaviour that affects approximately 38% of all social media users.<sup>2</sup> Due to the considerable health impact of

## STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This study will be the first review to synthesise existing knowledge relating to peer-to-peer online trolling and other related peer-to-peer online abuse behaviours to distinguish it as a distinct online misbehaviour.
- ⇒ A thorough approach will be taken to the review, adhering to Preferred Reporting Items for Systematic Reviews and Meta-Analysis-Scoping Review guidelines developed by Arksey and O'Malley and refined by Levac *et al*, Colquhoun *et al* and Daudt *et al*.
- ⇒ Abstract screening, full-text screening and data extraction, in independent duplicate will be conducted to aid greater inter-reviewer reliability.
- ⇒ Peer-reviewed literature from Web of Science, Scopus, PsycINFO and PubMed will be considered to ensure comprehensive coverage.
- ⇒ Articles in English will be reviewed only.

trolling on society, such as social anxiety and self-harm among victims,<sup>3</sup> some countries, including Australia and the UK, are introducing legislation to recognise and prosecute trolls.<sup>4</sup>

While peer-to-peer online trolling significantly impacts well-being of individuals and businesses,<sup>4</sup> there is little scholarly research into the phenomenon and what has been conducted, tends to be primarily focused on specific disciplines, such as marketing or information technology.<sup>5 6</sup> Despite an acknowledgement that trolling differs from other forms of cyber-abuse in that its pathology is unique and distinct from those of other cyber-abusers,<sup>4</sup> little effort has been made to synthesize knowledge across disciplines and to investigate the unique characteristics underpinning peer-to-peer online trolling. This is reflected in the range of definitions used to define trolling. Considering this, there are regrettably gaps in our knowledge, including confusion over the use of the term, a limited understanding of and the distinction between trolling and other types

of cyber-abuse, as well as an unclear path to trolling intervention, which requires further research to gain a holistic understanding of this research area.

The present scoping review responds by exploring existing peer-to-peer online trolling research as well as other types of cyber-abuse to synthesise knowledge and identify key characteristics which differentiate peer-to-peer online trolling from other cyber-abuse behaviours. Investigations include (A) how it differs from other forms of cyber-abuse such as flaming, (B) motivations, the role of personality and impacts from a variety of perspectives (perpetrator, victim, bystander), (C) context (organisational communication, online gaming, personal social media) and (D) interventions and educational strategies to decrease trolling. This will ultimately result in the development of a typology of peer-to-peer online trolling. This scoping review presents the first comprehensive integration of research on this topic to address the limits of our understanding. The insights gathered will inform policy and guide investment in better evidence-based trolling interventions for the future.

## METHODS AND ANALYSIS

Using the six-stage process developed by Arksey and O'Malley<sup>7</sup> and refined by Levac *et al.*,<sup>8</sup> Colquhoun *et al.*,<sup>9</sup> and Daudt *et al.*,<sup>10</sup> this scoping review will ensure rigour in its methodology. The process follows: (1) identification of the research question(s); (2) identification of studies relevant to the research question(s); (3) selection of studies for inclusion; (4) charting information and data within the included studies; (5) collating, summarising and reporting results of the review; and (6) consulting with stakeholders and experts. The review will be reported in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) reporting guidelines for scoping review.<sup>11</sup>

### Stage 1: identification of the scoping review research question

The present scoping review aims to uncover factors relating to peer-to-peer online trolling including differences from other forms of cyber-abuse, motivations of perpetrators, the impact on victims and bystanders, and potential interventions. Specifically, we will draw on the motivation-opportunity-ability framework which has been applied successfully in other online behaviour environments such as electronic word-of-mouth<sup>12</sup> and social behaviours,<sup>13</sup> to address the following four guiding questions:

1. How are peer-to-peer online trolling's unique characteristics different from other types of forms of cyber-abuse?
2. What are the unique characteristics and impacts of peer-to-peer online trolling on the ecological system actors? Perpetrator, victim, bystander?
3. What are the unique characteristics and role of the context where peer-to-peer online trolling occurs?

4. What intervention strategies can be used to ameliorate the incidence of peer-to-peer online trolling?

### Stage 2: identifying relevant studies

A thorough search of Web of Science, Scopus, PsycINFO and PubMed will be conducted using the following search terms: "online trolling" OR "trolling" OR "troller" OR "internet troll" OR "flaming" OR "cyber-abuse" OR "cyberabuse" OR "cyberbullying" OR "cyber-bullying" OR "cyberbully" OR "cyber-bully" OR "online bullying" OR "online-bullying" "deviant online behavior" OR "cyber-harassment" OR "online abusive behaviors" OR "cyber-stalking" OR "Hate raids".

All studies that meet the eligibility criteria outlined in table 1 will be included. These criteria were informed by discussion among the authors. The initial title or abstract search performed in November 2022 identified 5488 articles in Scopus, 2019 in PsycINFO, 1659 in PubMed and 4402 in Web of Science.

### Stage 3: selection of studies

As a result of the search, studies will be imported into Covidence to identify duplicate publications and assist with the selection and extraction process outlined in this protocol. Each step of the process will be carried out independently by two researchers. Using titles and abstracts, an initial screening will identify duplicates not identified by Covidence and publications that are clearly irrelevant. Using the inclusion criteria shown in table 1, the full-text review will ascertain which studies should be included. At this point, any studies that are excluded will be justified. Disagreements during the process will be settled by discussion between the researchers. For transparency of the process, a PRISMA flow chart will be included with the publication.

### Stage 4: charting the data

The researchers will chart the data using Covidence. The characteristics outlined below in table 2 will be used to chart the data in the review. Interpretation of these characteristics will be determined by all the researchers and an initial literature search. During the data charting process, the template will be updated to reflect new characteristics.

Although, it is common for scoping reviews not to evaluate manuscript quality or assess bias risk the present review will use the Mixed Methods Appraisal Tool (MMAT), which has been identified as useful in scoping reviews.<sup>14</sup> MMAT provides a reliable and short method for assessing a wide range of study designs, which is particularly useful in scoping reviews where many different research designs are examined.<sup>15 16</sup> To inform directions for future research, the authors assess the quality of the evidence.

### Stage 5: collecting, synthesising and reporting the results

The review will be reported according to the PRISMA-ScR.<sup>10</sup> As a thematic analysis of the key findings, a narrative synthesis will be presented. In a scoping review, key findings can be quite broad, and Levac *et al.*

**Table 1** Inclusion and exclusion criteria

Criteria	Inclusion criteria	Exclusion criteria	Justification
Population	Individuals involved with peer-to-peer online trolling and other cyber-abuse behaviour	Non-peer-to-peer online trolling (eg, political or company directed)	Interested in all experiences and perspectives related to peer-to-peer trolling only not directed at a broader corporation or political party.
Language	English	Non-English language	Reviewers only speak English
Time	From 2002 where first identified use of the term online trolling. <sup>17</sup>	N/A	Interested in how perspectives may have changed over time
Context	The publication investigates individuals communicating with individuals regardless of context, for example, organisational, educational providers and other online platforms.	N/A	Interested in all articles addressing peer-to-peer online trolling irrespective of context
Study topic	Discusses factors associated with peer-to-peer online trolling	Does not discuss peer-to-peer online trolling behaviours	Interested in getting a complete understanding of peer-to-peer online trolling
Study design	All study designs will be included in the review	N/A	Concerned with the breadth of existing knowledge

N/A, not available.

*al*,<sup>8</sup> recommend using thematic analysis to describe and understand them. There will be a summary table of key findings that includes information about the general characteristics of the included studies, relevant quality assessments and relevant data extracted from each study. In addition to the narrative synthesis, any relevant statistics found during the data extraction process will be included to extend the narration including potential underlying

mechanisms and theoretical aspects that capture aspects such as the motivation of the troller and/or personality traits which explain the likelihood of individuals to engage in peer-to-peer trolling. The definitions employed to study trolling will be analysed with the key themes identified and synthesised. The outcome of this review will, therefore, also be to develop a typology of peer-to-peer online trolling, including the range of behaviours

**Table 2** Data extraction template

Characteristics	Aspects to be identified
Authors, year and aim	What was the purpose of the study, who were its authors and when was it conducted?
Method	How was the research conducted in the publication?
Participants	In the case of an experimental design, how many participants were involved, what were some basic demographic details and what was the context of the study?
Definition	How did the researchers define peer-to-peer online trolling and other cyber-abuse behaviours?
Research Domain	What domain was the research conducted in, for example, communication, medicine, psychiatry, social psychology, business?
Research paradigm	Was the research paradigm identified in the study, if so, what was it?
Research context	What context was the research conducted in, for example, organisational, educational, online gaming or social media?
Troller characteristics	Do the researchers identify characteristics of the troller such as motivations, intentions, personality, psychopathology, gender, age and education level?
Troller mechanisms	Do the researchers examine any mechanisms which may enhance or minimise the instances or effects of trolling? Are these mechanisms guided by an underlying theoretical lens.
Victim impact	Is the impact on the victim outlined, such as emotional disturbance for an individual, self-harm, social isolation or negative word-of-mouth for a business owner or employee, etc.
Role of bystander	Is there identification of others involved in the peer-to-peer online trolling environment such as other customers, friends, family and educators?
Interventions	Are any interventions identified to reduce peer-to-peer online trolling?
Risk of bias	What is the risk of bias in the publication according to MMAT?

MMAT, Mixed Methods Appraisal Tool.

identified as trolling. The final report will also include the review's conclusions, strengths and limitations.

### Stage 6: patient and public involvement

There was no patient involvement in the design of this scoping review protocol, however, the protocol was shared with members of an advisory group comprising academics with expertise in consumer psychology, education and cyberbullying, representatives from government programmes in supporting adolescents, and e-safety, and peak educational bodies. The resulting findings from the scoping review will also be circulated to this advisory group for comment and feedback prior to finalisation.

### Ethics and dissemination

As data for this scoping review are taken from publicly available publications, ethics approval is not required. The findings from this review will be disseminated through peer-reviewed publications, a plain-English summary prepared and shared with the advisory group members and their respective networks.

**Contributors** ATB planned, conducted, reported and submitted the work described in the article. AR planned, conducted and reported the work described in the article. RM planned, conducted, and reported the work described in the article. BWK planned, conducted and reported the work described in the article. SW planned, conducted and reported the work described in the article. MC planned and reported the work described in the article. DJ planned and reported the work described in the article.

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