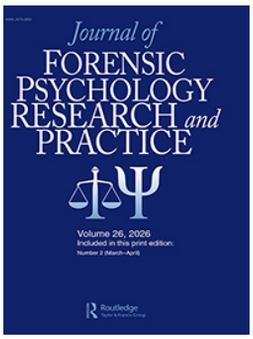

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A Systematic Review of Intragroup Aggression Among Prisoners: Proposing the Diffusion Model

Jane L. Ireland[a], Nisali Perera[b], Philip Birch[c], Lisa Maria Beethoven Steene[d], Mareike Dannemann[b], and Carol A. Ireland[e]

[a]School of Psychology, Liverpool John Moores University, Liverpool, UK; [b]Faculty of Psychology & Neuroscience, Maastricht University, Maastricht, Netherlands; [c]University of Technology Sydney, Sydney, Australia; [d]School of Psychology and Humanities, University of Lancashire, Preston, UK; [e]School of Psychology, University of Greater Manchester, Bolton, UK

ABSTRACT

To date, there has been no attempt to synthesize research into prisoner-to-prisoner aggression. The current paper identified 362 articles, with 59 entering the review. A thematic analysis produced six superordinate themes capturing individual/social risk markers, who were involved, attitudes, environmental factors, a role for fear, and staff involvement. Findings are integrated into a proposed model – the Diffusion Model for intraGroup Aggression among Prisoners [DM-GAP]. This presents an understanding as to the causes of intragroup aggression and how incidents can be formulated. Future research should build on the unique factors underpinning intragroup aggression, emphasizing more the role of the environment.

KEYWORDS

Intragroup aggression; prisoners; prison bullying; inmate aggression; in-group aggression

Intragroup aggression between prisoners is defined as that aimed at the in-group, namely other prisoners, as opposed to the outgroup, i.e., staff. Prior to 2000, there was a surprisingly limited amount of research conducted on this topic (e.g., Connell & Farrington, 1996; Dyson et al., 1997; Ellis et al., 1974; Ireland & Archer, 1996). Even then, there was a tendency to focus on general prison misconduct, where prisoner-to-prisoner aggression was considered part of a wider array of indisciplines (e.g., Gaes & McGuire, 1985; Mandaraka-Sheppard, 1986). Attention was also given to the preventative approaches taken by prisoners to manage their risk of assault (McCorkle, 1992) and/or a focus on discrete forms of aggression, particularly the risk of sexual victimization (e.g., Nacci & Kane, 1984). However, a developing interest in prison *bullying* emerged from 1996, with this solely focusing on intragroup aggression between prisoners (Connell & Farrington, 1996; Ireland & Archer, 1996). Prison bullying research emerged as the dominating concept from 1996, with

CONTACT Jane L. Ireland J.Ireland@ljmu.ac.uk School of Psychology, Liverpool John Moores University, Liverpool L3 3AF, UK

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the first (and only) narrative review to date produced in 2000 (J. L. Ireland, 2000). Thus, the term "bullying" appears to have become an over-arching and commonly applied term to capture intragroup aggression between prisoners. A commonly applied definition was outlined by Ireland (2002a) who noted how, for prisoners:

> An individual is being bullied when they are the victim of direct and/or indirect aggression happening by the same or different perpetrators. It includes exploitative exchanges for goods and services, even if the initial agreed transaction was voluntary. Single incidences of aggression can be viewed as bullying, particularly when the individual either believes or fears that they are at risk of future victimisation by the same perpetrator or others. The intention of the bully is not of relevance.

Despite what appeared to be an escalation in interest in this topic for several years and regardless as to whether the term bullying and/or aggression was applied, research has remained relatively limited. This is surprising considering the elevated levels of aggression and/or bullying that take place in such settings in comparison to other populations (e.g., Caravaca-Sánchez & Wolff, 2021; Dyson et al., 1997; Gooch et al., 2015; Ireland, 2002a, 2005a; Viljoen et al., 2005), where estimates can reach over 80% for behaviors indicative of being bullied by others, with around three-quarters reporting perpetration (Allison & Ireland, 2010; Haufle & Wolter, 2015; Ireland & Ireland, 2008)

Regardless as to whether researchers adopt the term bullying and/or [intragroup] aggression, the relatively limited focus on prisoner-to-prisoner aggression and limited attempt to synthesize the existing research is surprising, since it is accepted that closed environments, such as prisons, are expected to foster and promote the elements that arguably cause intragroup aggression to occur (Gooch et al., 2015). Ireland (2012) highlighted the reasons for the existence of such aggression via the *Multifactor Model of Bullying in Secure Settings* (MMBSS), an advancement on an earlier more basic model – the *Interaction Model of Prison Bullying* (IMP: Ireland, 2002a). The IMP proposed how social *and* physical aspects of prison environments encouraged *and* maintained prisoner-to-prisoner bullying, with prisons housing those with a predisposition to perpetrate aggression and/or who are vulnerable to poor coping. The IMP placed emphasis on the environment as promoting bullying, arguing against individual psychopathologies and highlighting a degree of inevitability in relation to aggression emerging. The MMBSS expanded this understanding, placing more emphasis on *how* individual factors interacted with the social aspects of prisons, via two pathways. 1.) *Desensitization pathway*, which argued for contextual factors in a high-risk environment for aggression (i.e., a prison) leading certain prisoners to experience desensitization to prison-based aggression. Here, pre-existing individual characteristics also served to encourage aggression, further underpinned by unhelpful cognition promoting aggression. These characteristics and cognitions were thought

to be become elevated and when experienced alongside acute factors, such as negative emotions, served to significantly raise the risk of perpetration of aggression toward another prisoner. Importantly, any emerging aggression would then be reinforced by the social environment. 2.) *Environment and prior characteristic pathway*. This captures a more rudimentary interaction between the prison environment and stable individual characteristics. Here, a trait-driven understanding of aggression was presented. The environment was still considered key but this served as a means of maximizing the manifestation of already existing traits (see Ireland, 2012 for the MMBSS).

However, a more recent and integrated framework to understand intragroup aggression among prisoners has since been presented, which builds further on the role of the prison environment. This framework, the *Prison Bullying EcoSystem Framework* (PB-ECO, Ireland, Ireland, et al., 2021), capitalizes on the recognized interplay between the physical environment and the individuals detained there. The PB-ECO highlights how this shares similarities with an ecosystem, namely where living components reside alongside non-living components, acknowledging how ecosystems are controlled by external and internal factors. The PB-ECO accounts for external factors such as social climate, social hierarchies, what characteristics prisoners bring into the setting, the role of the physical environment, and the currency of material goods. The model considers how these interact with internal factors and how they can be influenced by the external factors. This can include, for example, competition for resources shifting and being influenced by internal factors such as prisoner group profiles and emerging new currencies that create competition. Importantly, the PB-ECO argues for the internal factors, as in any ecosystem, serving to control the processes but also being influenced by them, producing a feedback loop. The framework highlights a clear role for individual *and* external factors and recognizes the dynamic interplay between the two and the importance of the internal factors if the external elements are to be impacted on. Through the lens of an ecosystem approach, the framework ultimately argues that intragroup aggression is a means of securing stability when there is a direct threat to factors such as resources, safety, well-being, valued social relationships, and autonomy, all of which feature as explanations for bullying in prisoners, as outlined in the earlier models, such as the IMP and MMBSS (see Ireland, et al., 2021 for the full PB-ECO).

Regardless of the specific theoretical model, a clear theme generated represents a dynamic role for the environment *and* individual factors, with an environment that responds to and reinforces aggression once this emerges. However, to date, these models have been unable to take advantage of a thorough review of the literature and nor have they been able to accommodate for what appears to have been two inter-related pools of emerging research; "bullying" and "aggression" among prisoners. The shared factors are certainly intragroup (i.e., prisoner to prisoner) elements but there has been no

means by which a model has been able to account for a synthesis of this literature and determine, for example, what we can conclude about individual, environmental, and reinforcing factors and how these may best be captured within models that could, ultimately, support the development of effective prevention and/or the management of intragroup aggression among prisoners.

The current paper aims to address the absence of this synthesis by considering a systematic review of the literature and determining whether refinement to these integrated models is required when trying to consider explanations for intragroup aggression between prisoners. The focus is thus on the causes for and factors involved in understanding this behavior. Only by producing a synthesis of the related literature can a refined theory be offered. This is essential for the research field, where a theoretical approach to understanding and managing intragroup aggression/bullying among prisoners has been unable to adequately explain the behavior, has focused instead on individual pathology models, and failed to account for a thorough understanding of the environment, the mechanisms involved, and how this can be maximized to prevent and/or minimize intragroup aggression among prisoners (Ireland, 2017; Ireland et al., 2021).

Method

Search strategy

To ensure comprehensive coverage of relevant literature, systematic searches were conducted across multiple electronic databases, including PubMed, PsycINFO, Web of Science, Science Direct and Google Scholar. Search terms were developed based on previous research and were structured using the SPIDER search strategy protocol (Cooke et al., 2012). In accordance with the SPIDER protocol, the following steps were completed: (1) identification of the relevant sample, phenomenon of interest, design, evaluation, and research type; (2) highlighting of key terms; and (3) generation of alternative phrases to create a cohesive search strategy (see Table 1). Subsequently, the research team assessed the effectiveness of the search strategy and identified additional relevant terms. Finally, reference lists of studies considered eligible after the full-text screening stage were also examined for additional relevant articles.

Inclusion criteria

Studies that focused on prisoner bullying and/or intragroup aggression within correctional settings such as prisons, young offender institutions, borstals, and detention centers were included. To be included in the review, studies must have been published in peer-reviewed journals. Additionally, the inclusion

Table 1. Study search strategy according to the spider framework.

SPIDER Elements	Keyword(s)	Search terms and strategies
Sample	Forensic setting[a]	"Forensic inpatient*" OR Offend* OR Crime* OR Crimin* OR "Secure Service*"OR "High secur*" OR "Medium secur*" OR "Low secur*" OR "Special hospital" OR "Forensic psychiatry" OR "Forensic psychology" OR Sentence* OR "Criminal justice" OR Custod* OR "Forensic service*" OR "Forensic hospital" OR Secure* AND
	Prison setting	offend* OR prison* OR inmate* OR jail* OR custody* OR highsecure* OR "detention center*" OR borstal* OR "young offender institution*" AND
	Demographics	young* OR adult* Or men OR man OR woman OR women OR "young offender*" OR "adult offender*" OR female* OR male* OR "female offender*" OR "male offender*"
Phenomena of Interest	Bullying Aggression	bully* OR bullies* OR victim* OR "intragroup aggression*" OR bullying* OR "intra-group aggress*"
Design	Any study design	NOT editorials NOT narrative reviews NOT commentaries NOT opinion papers NOT review papers
Research Type	Nil (as described under Design)	

[a]Included for the sake of completeness and to capture the potential for differences in terminology or placement of a prisoner in a hospital wing. Studies were consequently excluded if they were not focused on prisoners.

criteria allowed for variations in the terminology used to describe correctional institutions, acknowledging international differences in these terms.

Exclusion criteria

Studies not published in English were excluded to maintain consistency in language and accessibility. Papers that did not center on prisoner-to-prisoner behavior were excluded, as the review aims to explore interactions specifically between prisoners. Finally, while review papers were not included in the analysis, they were still considered useful for their reference lists, which could help identify relevant primary studies.

Eligibility screening

The eligibility screening for this systematic review involved a two-stage process. Initially, titles and abstracts were reviewed to determine relevance based on predefined criteria, including focus on bullying/intragroup aggression in prison, publication in peer-reviewed journals, and empirical research. Studies not meeting these criteria, including non-English publications and non-empirical research, were excluded. Subsequently, full-text articles of potentially relevant studies were assessed for methodological rigor, sample size, data quality, and relevance to the research questions. Two independent reviewers conducted the screening, resolving any disagreements through discussion or consultation, ensuring the inclusion of only relevant and high-quality studies. Interrater reliability was measured via an independent researcher who assessed 10% ($n = 7$) of the included articles. This received a Cohen's Kappa score of .85 ($p < .05$; good agreement).

Quality assessment

Three quality assessment tools were chosen to evaluate the quantitative, qualitative, and mixed method studies included in this review. For the quantitative studies, the JBI Checklist for Analytical Cross-Sectional Studies (Moola et al., 2024) was used. This checklist comprises eight questions that assess various aspects of quantitative methodologies, such as the clarity of the sample definition, the validity of outcome measurements, and the appropriateness of statistical analyses. Each question is rated as "yes," "no," "unclear," or "not applicable," with these ratings helping to inform the assessor's decision on whether to include or exclude an article.

For qualitative studies, the Critical Appraisal Skills Programme (CASP) qualitative checklist (CASP Critical Appraisal Skills Programme [CASP], 2018) was employed. This tool comprises 10 questions that evaluate different methodological elements, including research aims, methodology, design, recruitment strategy, data collection, researcher–participant relationships, ethical considerations, data analysis, and the meaningfulness of findings. Responses were rated as "yes," "can't tell," or "no."

Finally, the Mixed Methods Appraisal Tool (MMAT) was utilized to evaluate the methodological quality of the mixed method studies included in the analysis (Hong et al., 2018). The MMAT evaluates the methodological quality across five categories of studies: qualitative research, randomized controlled trials, non-randomized studies, quantitative descriptive studies, and mixed methods studies, using a total of 25 items, with five items per study category. Articles were independently appraised by two raters, with discrepancies resolved through discussion.

Data extraction and analysis

The data extraction (Table 2) was designed to include information on several key aspects of each study, including sample size, population, proportion of intragroup aggression and/or categories involved and method.

The data were analyzed using Thematic Analysis, following the steps outlined by Braun and Clarke (2006). This included familiarization with the data through repeated readings to gain a deep understanding. Initial codes were then generated by tagging relevant text segments with descriptive labels. These codes were then organized into broader themes, identifying patterns and relationships. The themes were reviewed and refined to ensure they accurately represented the data. Each theme was then clearly defined and named to capture its essence.

Table 2. Study demographics.

Author	Sample size	Perpetration (P) Victimization (V) Prior week (W) Prior month (MT) Male (M); Female (F)	Mean age Years (SD)[a]	Population YO/ Juvenile/ Adult/ Mixed[b]	Sex	Location	Method/Study design
Adams and Ireland (2018)	313	46% P (W) 46% V (W)	19.1 (2.1)	YO	M	U.K.	Questionnaires (DIPC), Cross sectional
Allely and Wood (2022)	1	–	51	A	M	U.K.	Case study
Allison and Ireland (2010)[c]	261	67.6% P (MT) 83.6% V (MT)	31.8 (9.1)	A	M	U.K.	Questionnaires (DIPC-SCALED), Cross sectional
Archer and Southall (2009)	122	72% P (MT) 86% V (MT)	37.3 (10.6)	A	M	U.K.	Questionnaires (DIPC-SCALED), Cross sectional
Archer et al. (2007)	1253	42% P (W) 44% P (M) 39% P (F) 52% V (W) 50% V (M) 55% V (F)	32.1 (9.9) 32.7 (10.7) M 31.4 (8.7) F	A	M/F	U.K.	Questionnaires (DIPC), Cross sectional
Ashkar and Kenny (2008)	16	–	17.95 (1.14)	YO	M	Australia	Interviews, Cross sectional
Biggam and Power (1999a)	100	Includes 25 victims	18.7 (1.3)	YO	M	Scotland	Questionnaires, Interviews, Cross sectional
Biggam and Power (1999b)[d]	75	Includes 25 victims	18.7 (1.3)	YO	M	Scotland	Questionnaires, Interviews, Cross sectional
Bijleveld et al. (2011)[e]	1038	–	15.7 M 15.5 F	J	M/F	The Netherlands	Case file review, Longitudinal
Blaauw et al. (2001)	369	34% of suicide victims (n = 95) V; 66% Suicide risk group V; 34% non-suicidal.	Suicide victims (34.2) M 31.1 (9.5) to 32.7 (9.2) (93%) M	M	M/F	The Netherlands	Interviews, Questionnaires, Case review. Cross sectional
Caravaca-Sánchez and Wolff (2021)	2484	56.1% V over 6 month period.	18–34 (46.2%) 35+ (53.8%)	A	M	Spain	Questionnaires, Cross-sectional
Chan and Ireland (2009)	234	65% P (M) 81% V (M)	33 (9.7) A 19 (0.9) YO 16 (0.7) J	M	M/F	U.K.	Questionnaires (DIPC-SCALED -R) Cross-sectional
Connell and Farrington (1997)	20	45% P (W) 25% V (W)	17.5 Victims 16.8 Bullies	YO	M	Canada	Questionnaires, Interviews, Cross sectional
Connell and Farrington (1997)	34	26–55% P (self-identify); 17–36% V (self-identify)	16–18	YO	M	Canada	Interviews, staff reports, Cross sectional

(*Continued*)

Table 2. (Continued).

Author	Sample size	Perpetration (P) Victimization (V) Prior week (W) Prior month (MT) Male (M); Female (F)	Mean age Years (SD)[a]	Population YO/ Juvenile/ Adult/ Mixed[b]	Sex	Location	Method/Study design
Connell et al. (2016)	185	35.7 P 25.4 V	16–19	YO	M	Canada	Questionnaires, Interviews, Cross-sectional
Dyson et al. (1997)	5 prisons 878 daily average	13.9 bullying incidents per 100 average daily population (over 3 months)	16–21	YO	M	Scotland	Retrospective analysis of disciplinary records
Grennan and Woodhams (2007)	99	16.2% P 16.2% V 29.3% PV	19.4 (0.97)	YO	M	U.K.	Questionnaires (DIPC); Cross sectional
Haufle and Wolter (2015)	473	73.5% P (3 months) 84.3% V (3 months) 64.6% PV (3 months)	20.2 (1.79)	YO	M	Germany	Questionnaires (DIPC-SCALED) Longitudinal
Holland et al. (2009)	102	32% P (W) 52% V (W)	29.2 (6.6)	A	M	U.K.	Questionnaires (DIPC-R), Cross sectional
Ireland (1999a)	309	2.7% P (W) 37.2% V (W) 14.6% PV	18.9 YO M 33.2 A M 18.7 YO F 34.2 A F	M	M/F	U.K.	Questionnaires (DIPC), Cross sectional
Ireland (1999b)[f]	309	57.9% P (W) 51.8% V (W)	18.9 YO M 33.2 A M 18.7 YO F 34.2 A F		M/F	U.K.	Questionnaires (DIPC), Cross sectional
Ireland (2000)	502	1.8% P (W) 18.1% V (W) 34.9 PV (W)	31.6 F 33.7 M	A	M/F	U.K.	Questionnaires (DIPC), Cross sectional
Ireland (2001a)	406	49% P (W) 58% V (W)	30.4 F 34.5 M	A	M/F	U.K.	Questionnaires (DIPC), Cross sectional
Ireland (2001b)[g]	406	14.3% P (W) 22.9 V (W) 35% PV (W)	30.4 F 34.5 M	A	M/F	U.K.	Questionnaires (DIPC), Cross sectional
Ireland (2002b)	1 prison	107 incidents recorded over 14 months, capturing 110 bullies and 65 victims.	–	YO	M	U.K.	Retrospective analysis of suspected bullying reports
Ireland (2002c)[h]	502	1.8% P (W) 18.1% V (W) 34.9 PV (W)	31.6 F 33.7 M	A	M/F	U.K.	Questionnaires (DIPC), Cross sectional

(*Continued*)

Table 2. (Continued).

Author	Sample size	Perpetration (P) Victimization (V) Prior week (W) Prior month (MT) Male (M); Female (F)	Mean age Years (SD)[a]	Population YO/ Juvenile/ Adult/ Mixed[b]	Sex	Location	Method/Study design
Ireland (2002d)	291	53% P (W) 45% V (W)	57% 18–19 43% 20–21 YO 80% 16–17 12% 14–15 1% >14 J	YO – J	M	U.K.	Questionnaires (DIPC), Cross-sectional
Ireland (2005b)	202	43.1% P (W) 4.6% V (W)	19 (0.9) YO 16.6 (0.6) J	YO – J	M	U.K.	Questionnaires (DIPC-R), Cross sectional
Ireland (2011)	566	59% P (M) 79% V (M)	34 (11.7) A 19 (0.83) YO 16.5 (0.6) J	M	M	U.K.	Questionnaires (DIPC-SCALED) Cross sectional
Ireland and Archer (1996)	138	46.4% witness bullying (W); 5.8% P (W); 13.8% V (W)	30.2 M 30.3 F	A	M/F	U.K.	Questionnaires, Cross sectional
Ireland and Archer (2002)	406	14.3% P (W) 35% PV (W) 22.9% V (W)	30.4 F 34.5 M	A	M/F	U.K.	Questionnaires (DIPC), Cross sectional
Ireland and Archer (2004)[i]	291	20% P (W) 33% PV (W) 12% V (W)	57% 18–19 43% 20–21 YO 80% 16–17 12% 14–15 1% >14 J	YO – J	M	U.K.	Questionnaires (DIPC), Cross sectional
Ireland and J. L. Ireland (2000)	194	11.9% P (W) 43.4% PV (W) 13.9% V (W)	36	A	M	U.K.	Questionnaires (DIPC), Cross sectional
Ireland and Ireland (2003)	322	–	32 A 19 YO 16 J	M	M	U.K.	Questionnaires (DIPC), Cross sectional
Ireland and Ireland (2008)	605	67% P (M) 81% V (M)	34.3 (12.6) M	A	M/F	U.K.	Questionnaires (DIPC-SCALED), Cross sectional
Ireland and Monaghan (2006)	133	53% P (W) 45% V (W)	18–21 YO 16–17 J	YO – J	M	U.K.	Questionnaires (DIPC), Cross sectional
Ireland and Power (2004)	220	45% P (W) 40% V (W)	31 (7.9) A 19 (9) YO	A – YOI	M	U.K.	Questionnaires (DIPC), Cross sectional
Ireland and Power (2009)	282	36% P (W) 54% V (W)	31.1 (8.9) (M); 29 (6.5) (F)	A	M/F	U.K.	Questionnaires (DIPC-R), Cross sectional

(*Continued*)

Table 2. (Continued).

Author	Sample size	Perpetration (P) Victimization (V) Prior week (W) Prior month (MT) Male (M); Female (F)	Mean age Years (SD)[a]	Population YO/ Juvenile/ Adult/ Mixed[b]	Sex	Location	Method/Study design
Ireland and Qualter (2008)	241	29% P (W) 48% V (W)	32.3 (9.8)	A	M	U.K.	Questionnaires (DIPC-R), Cross sectional
Ireland et al. (2007)	1253	42% P (W) 52% V (W)	32.7 (10.7) M 31.4 (8.7) F	A	M/F	U.K.	Questionnaires (DIPC), Cross sectional
Ireland and Power (2009)	1037	–	Study 1: 33 (10.5) M Study 2: 29 (8.5) M Study 3: 19.7 (0.99) YO Study 4: 32.9 (9.2) F	M	M/F	U.K.	Questionnaires, Cross sectional
Ireland, Ireland, et al. (2016)[j]	423	–	34.6 (10.2)	A	M	Canada	Questionnaires, Cross sectional
Kiriakidis (2008)	152	–	18.9 (1.3)	YO	M	Scotland	Interviews. Cross sectional
Kõiv (2016)	110	14% P (W) 43% PV (W) 20% V (W)	32.8 (9.1)	A	M	Estonia	Questionnaires (DIPC-R), Cross sectional
Kuo et al. (2014)	1181	20.7% psychological V; 8.3% Physical V	36 (8.36)	A	M	Taiwan	Questionnaire, Cross sectional
Lawrence and Welfare (2008)	115	18.8–26.3% P (W) 37.5–42.4% PV (W) 0–1.1% V (W)	–	YO	M	U.K.	Questionnaires (DIPC-R), Cross sectional
Leddy and O'Connell (2002)	232	9.5% P 15.9% PV 31% V	26 (9.1) M 25 (8.2) F	A	M/F	Ireland	Questionnaire, Interviews, Cross sectional
López-Pérez et al. (2017)	123	–	36.6 (11.64)	A	M	U.K.	Questionnaires, Cross sectional
Nelson et al. (2010)	26	–	37.4 (11.0)	A	F	U.K.	Interviews, Cross sectional
Palmer and Thakordas (2005)	70	12.9% P (W) 42.9% PV (W) 15.7 V (W)	30.0 (8.4)	A	M	U.K.	Questionnaires (DIPC), Cross sectional
Power et al. (1997)	707	29% V (current sentence); 76% witnessed P	18.6 (1.34)	YO	M	Scotland	Questionnaires, Cross sectional
Resett et al. (2022)	718	3% P (M) 48% PV (M) 29% V (M)	35.4 (11.05) M 38.2 (11.07) F	A	M/F	Argentina	Questionnaires (DIPC-SCALED -R), Cross sectional

(*Continued*)

Table 2. (Continued).

Author	Sample size	Perpetration (P) Victimization (V) Prior week (W) Prior month (MT) Male (M); Female (F)	Mean age Years (SD)[a]	Population YO/ Juvenile/ Adult/ Mixed[b]	Sex	Location	Method/Study design
South and Wood (2006)	132	63.6% P (6 months) 8.3% V (6 months)	35.36 (9.98)	A	M	U.K.	Questionnaires (DIPC), Cross sectional
Trajtenberg et al. (2023)	236	61% P (M)	_	A	M	Uruguay	Questionnaires (DIPC-SCALED -R), Cross sectional
Turner and Ireland (2010)	200	74% P (M) 87% V (M)	30.0 (8.2)	A	M	U.K.	Questionnaires (DIPC-SCALED), Cross sectional
Viljoen et al. (2005)	244	32.1% P (in custody) 37% PV (in custody) 8.2% V (in custody)	16.57 (1.19) M 15.94 (1.35) F	YO	M/F	Canada	Questionnaires, Cross sectional
Wiklund et al. (2014)	259	–	16.2 (0.8)	J	M	Russia	Questionnaires, Cross sectional
Wolff and Shi (2009)	7221	–	33.8 (GP)[k] 43.8 (SO)	A	M	US	Questionnaires, Cross sectional
Wood et al. (2009)	141	39% P (W) 6.3% V (W)	32.4 (9.77)	A	M	U.K.	Questionnaires (DIPC-R), Cross sectional

[a]A = adult; Y = Young Offender; J = juvenile; [b]Mixed sample; [c]included a sample of staff, $n = 100$; [d]seems to use the same sample as (Biggam & Power, 1999a) with the exclusion of the 25 suicidal prisoner group; [e]Included a sample of 498 juvenile sex offenders – no age given, just average age at the time of the offense. Bullying levels not reported and include bullying prior to and/or that taking place in prison. [f]Ireland, 1999a, 199b use the same sample but different elements of the dataset; [g]Ireland 2001a,b use the same sample but a different element of the dataset; [h]Ireland 2002c and 2000 same sample but different measures; [i]2002d and Ireland and Archer (2004) same sample but different measures; [j]in addition, included a sample of staff, $n = 195$; [k]GP = general population and SO = sex offenders.

Results

Search results

Figure 1 shows a flowchart of a systematic review. Out of the 21,037 articles initially identified, 19,135 duplicates were eliminated, leaving 1,902 articles. Of these, 1,540 were excluded for failing to meet the inclusion criteria (nine were excluded as they were focused on secure hospitals and not prisons, three as they were focused on secure residential homes and one as the focus was not on bullying in secure settings), resulting in 362 articles eligible for abstract screening. After reviewing the abstracts, 56 articles were selected for in-depth examination. Additionally, three more articles were found through reference list screening, bringing the total to 59 articles, as illustrated in Figure 1. The

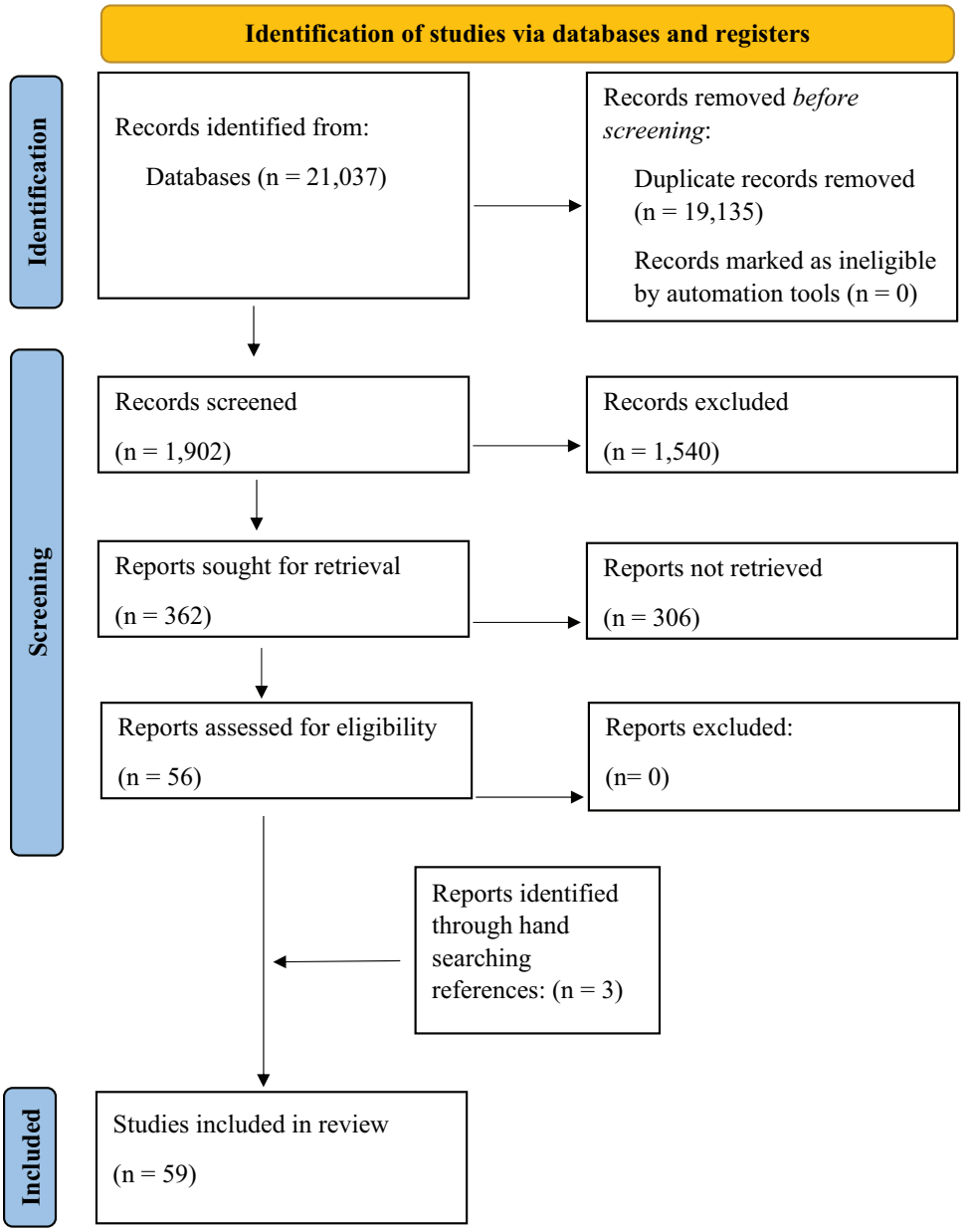

Figure 1. Flow chart depicting the systematic review process.

procedures for screening and exclusion were based on the methodology outlined by Varker et al. (2015).

Characteristics of the studies

The systematic review covers a range of studies (see supplementary Table S1). Many of these studies were conducted in the United Kingdom, making it the

most common region in terms of publication frequency. The review encompasses a diverse range of mean ages across studies, covering juvenile, young offender, and adult populations. The term "bullying" was the most applied to capture intragroup aggression, evidencing the importance of this term to include as a search term in this area. As a result, the term "bullying" will be used interchangeably with the term intragroup aggression.

Thematic analysis

The focus of the current study was on the factors associating with/causing intragroup aggression as opposed to presenting an aggregate of the prevalence and types of bullying/aggression reported. The latter is heavily influenced by the method adopted (Dyson et al., 1997; Ireland, 2005a) and, consequently, the focus was on the causes/factors involved in order to refine the model to understand why intragroup aggression takes place. Six superordinate themes emerged from the studies, covering individual, environmental, and promotive factors, and were further extended to capture the categories involved. These are detailed as follows and presented in Figure 2:

Theme 1: Individual and social risk markers contributing to involvement (32 articles, 54.2%)

Over half the articles identified vulnerability markers for involvement in intragroup aggression, producing three subordinate themes; two focused on victims and one on perpetrators, as follows:

Subordinate theme 1: Individual vulnerabilities associated with increased victimization

These included physical weakness (e.g. Ireland & Archer, 1996; Nelson et al., 2010), young age (Ireland, 2002b), a prior history of being victimized in the community (Caravaca-Sánchez & Wolff, 2021), poor mental health, and/or poor coping skills (Biggam & Power, 1999a, 1999b; Ireland & Ireland, 2000; Ireland, 2005, 2011; Nelson et al., 2010; Resett et al., 2022; Viljoen et al., 2005). Regarding the latter, there was evidence of raised levels of anxiety reported among victims (Ireland, 2005; Kuo et al., 2014) and higher suicide rates among those who were aggressed toward (Blaauw et al., 2001; Kiriakidis, 2008). This included higher levels of such risk among bully/victims [perpetrator-victims] (Viljoen et al., 2005) and extended to cover raised levels of depression and stress (Grennan & Woodhams, 2007). Further vulnerabilities included brain injury or a developmental condition that made them vulnerable (Allely & Wood, 2022; Trajtenberg et al., 2023). Offense types were also a further factor (Blaauw et al., 2001; Power et al., 1997; Resett et al., 2022), notably if convicted

Superordinate theme	Subordinate themes
1.) Individual and social risk markers contributing to involvement.	1.1. Individual vulnerabilities associated with increased victimisation 1.2. Social markers for victimisation risk 1.3. Dominance, aggression and challenging behaviour(s) distinguish perpetrators
2.) Roles involved in aggression and the prevalence of mutual perpetrator/victim groups.	-
3.) Attitudes supporting aggression and diminishing the victim experience.	-
4.) Environmental factors: Fixed and dynamic influences.	4.1. Prison physical and social architecture promoting intragroup aggression 4.2. Material scarcity causing intragroup aggression 4.3. Assimilation into prisoner subculture 4.4. Staffing delivery patterns creating opportunities for prisoner-to-prisoner aggression
5.) Fear resulting in distress and help-seeking behaviour.	
6.) Staff as part of the problem and the solution.	6.1. Disparity in staff and prisoner views regarding intragroup aggression 6.2. Staff as the guardians of reporting and managing intragroup aggression

Figure 2. Superordinate and subordinate themes.

of a sex offense (Ireland & Archer, 1996; Kuo et al., 2014). Interestingly, "bullying others" did not appear to lessen the effects of victimization (Leddy & O'Connell, 2002), with self-esteem or certainty of this also not a factor (Ireland, 2002c).

Subordinate theme 2: Social markers for victimization risk

Victims were more likely to isolate themselves (Chan & Ireland, 2009; C. A. Ireland & Ireland, 2000) and report social loneliness (Ireland & Qualter, 2008). This appeared elevated among perpetrator-victims [bully/victims] (Ireland & Power, 2004) and those experiencing multiple forms of

victimization (Ireland & Qualter, 2008; Nelson et al., 2010). Connected to isolation, avoidance was also employed by victims, thus minimizing encounters with bullies/perpetrators, including withdrawing from social interactions or avoiding potential aggressors (Wiklund et al., 2014). Victims also expressed belief they had been targeted due to not being assertive and being quiet (Ireland, 2000; Ireland & Archer, 1996).

Subordinate theme 3: Dominance, aggression, and challenging behavior(s) distinguish perpetrators

Those involved as perpetrators presented with more dominance and aggressive tendencies, including personality characteristics associated with this (Connell et al., 2016; Resett et al., 2022; Turner & Ireland, 2010; Wiklund et al., 2014), such as psychopathy, machiavellianism (e.g., Resett et al., 2022) and lower agreeableness (Turner & Ireland, 2010). There was also a tendency toward aggressive social problem-solving (Ireland, 2001b), extended also to an increased tendency to demonstrate antisocial tendencies (Connell et al., 2016). This suggested that dominance promoting/aggressive traits were more prevalent in those who were perpetrators, whereas the opposite was more common in victims. Interestingly, perpetrator-victims [bully/victims] had raised tendencies for trait hostility and/or anger (Adams & Ireland, 2018; Ireland & Archer, 2004; Palmer & Thakordas, 2005) and were considered to present with markers of behavioral challenge in the prison (Ireland, 2001a). This included other acts of aggression and negative behavior, which were not readily identified as markers of victim vulnerability when it should be (Ireland & Monaghan, 2006; Ireland et al., 2007). Thus, such victims appeared to be presenting with behavioral markers linked to victimization, with their choice to use intragroup aggression [bullying] considered a form of coping (Ireland & Monaghan, 2006; Nelson et al., 2010).

Theme 2: Roles involved in aggression and the prevalence of mutual perpetrator/victim groups (21 articles, 35.59%)

Over one third of articles captured membership to a category involved in intragroup aggression. This was focused on the literature using the term "bullying," identifying prisoners as falling into either a pure bully (sole perpetrator), pure victim (victim), bully/victim (mutual perpetrator-victim), or not-involved group. The most-reported categories were bully/victims (Chan & Ireland, 2009; Haufle & Wolter, 2015, Ireland, 1999b; Ireland, 2001a, 2001b; Ireland & Archer, 2002; Ireland & Ireland, 2000, 2008; Kõiv, 2016; Resett et al., 2022; Wood et al., 2009), capturing those who perpetrate bullying but are also victims. It has been suggested that victims may react assertively or retaliate to deter further bullying (Haufle & Wolter, 2015, Ireland, 2001a; Lawrence &

Welfare, 2008; Palmer & Thakordas, 2005), leading to a use of perpetration toward others (Ireland, 1999b), although bullying is not automatically considered an effective means of preventing victimization (Haufle & Wolter, 2015). There was also recognition that perpetration and victimization were not mutually exclusive, with prison-based research unique in promoting this finding, where other research has tended to focus "bullies" and "victims" as distinct (Holland et al., 2009).

The least reported category was pure bullies [sole perpetrators] (Chan & Ireland, 2009, Ireland, 2001b; Ireland, 2000; Ireland & Archer, 2002; Ireland & Ireland, 2000, 2008; Ireland & Qualter, 2008; Leddy & O'Connell, 2002; Resett et al., 2022; Turner & Ireland, 2010; Wood et al., 2009). However, there were some isolated differences in three studies capturing young male offenders; Ireland and Monaghan (2006) found pure bullies were the second most endorsed category and bully/victims the second lowest. Power et al. (1997) identified bully/victims as the least reported, with Connell & Farrington (1997) reporting bully/victims as infrequently noted.

Theme 3: Attitudes supporting aggression and diminishing the victim experience (19 articles, 32.2%)

Attitudes were captured as an important construct to consider (Connell et al., 2016; Ireland et al., 2016; Lopez-Perez et al., 2017; Wiklund et al. (2014). Considerable evidence for the support of perpetrators and negative views toward victims has been indicated (Connell et al., 2016; Ireland & Power, 2009). "Bullying" perpetration is argued to be influenced by supportive attitudes and moral disengagement, such as admiring or justifying such behavior (Resett et al., 2022; Wood et al., 2009), considering bullying in prison to be inevitable (Connell & Farrington, 1997), valuing aggression (Adams & Ireland, 2018; Connell et al., 2016) and the use of defensive aggression in response to threat (Ireland, 2011). Callous/dominate attitudes associated with bullying perpetration were reported among male juveniles (Wiklund et al., 2014) and beliefs supporting aggression were also found among adult male prison bullies (Archer et al., 2007). For example, those involved in bullying other prisoners demonstrated more support for planned (instrumental) aggression (Holland et al., 2009; Turner & Ireland, 2010), were more likely to consider the consequences of their aggression as positive (Ireland & Archer, 2002), with bullies and bully/victims more likely to seek an aggressive solution to conflict (Adams & Ireland, 2018; Ireland, 2001b).

Beliefs toward victims were also challenging, with Ireland and Archer (1996) reporting how a fifth of prisoners considered victims deserved the aggression, with this a cited reason for not intervening, with evidence for beliefs justifying the "bullying" of victims and/or demeaning victims commonly found (Connell et al., 2016; Ireland, 1999a).

Furthermore, victims were often regarded as unsuccessfully integrated into the prison community and to have characteristics associated with inexperience, naivete, quietness, timidity, passivity, and unsociability (Nelson et al., 2010). There were also views expressed that the victims were seen to have provoked the aggression (Ireland & Ireland, 2003). However, what has not been determined is the extent to which the beliefs evidenced were preexisting or part of the prisonisation experience.

Theme 4: Environmental factors: Fixed and dynamic influences (17 articles, 28.8%)

A role for the environment, both physical and social elements, and wider contextual influences was evidenced and captured via four subordinate themes, as follows:

Subordinate theme 1: Prison physical and social architecture promoting intragroup aggression

Several studies highlighted how structural aspects of prisons are expected to influence intragroup aggression (Dyson et al., 1997), and that distinguishing physical structure from social structure was not always possible. Kuo et al. (2014) indicated how factors such as prison climate impacted on prisoner victimization, with positive perceptions of this associated with lower rates of victimization. The physical layout of the prison was considered crucial in shaping the atmosphere and influencing rates of violence and victimization.

In addition, a lack of adequate stimulation in the environment and lack of social contact further contributed to aggression, as prisoners struggled to cope with boredom and isolation, sometimes resorting to "bullying" other prisoners as an outlet (Ireland, 2000), with Kõiv (2016) further capturing a role for attachment challenges in those reporting victimization, highlighting a further social component of importance.

The social architecture of a prison was extended further to capture social hierarchies among prisons (Ashkar & Kenny, 2008). This was considered a critical environmental factor that fostered intragroup aggression, with prisoners seeking to establish social dominance to secure social status within the prison hierarchy, leading to aggression, often aimed at weaker or lower-status inmates (South & Wood, 2006; Ireland & Archer, 1996; Ireland, 2000). The closed environment of prisons with confined living conditions arguably served to further exacerbate these power dynamics, allowing prisoner bullying to thrive (Ireland, 2011).

Subordinate theme 2: Material scarcity causing intragroup aggression

Limitations on the availability of material goods and resources within prisons were considered a driving feature in promoting intragroup aggression, with items considered scarce becoming valuable and featuring as a form of currency that prisoners compete for. This competition was considered to promote bullying as a means of obtaining or controlling these resources, and thus serving as a solution to material deprivation (Allison & Ireland, 2010; Ireland et al., 2007), a factor commonly captured in models explaining prison bullying, as captured earlier (e.g., IMP, Ireland, 2002a; MMBSS: Ireland, 2012; PB-ECO; Ireland et al., 2021)

Subordinate theme 3: Assimilation into prisoner subculture

As prisoners adapt to the prison environment, via a process known as prisonisation, they adopt the values and norms of the subculture. This often includes using aggression as a strategy to maintain or elevate status (South & Wood, 2006) and the endorsement of aggressive responding by perpetrators (Adams & Ireland, 2018; Archer & Southall, 2009; Ashkar & Kenny, 2008), including perceiving benefits of bullying other prisoners (Archer & Southall, 2009) and seeking to communicate that they are not weak and have status (Ireland & Archer, 2004; Ireland et al., 2007; Ireland & Ireland, 2008). Not adhering to the culture (e.g., being an informer on other prisoners, not repaying debts and/or being new to prison culture) were seen as risk factors for being aggressed toward (Ireland, 2002d). Moral disengagement, where prisoners justify their harmful behaviors, further perpetuates intragroup aggression and can also be considered evidence of assimilation into a culture where aggression is a routine means by which conflicts can be resolved and material goods gained. The prison climate is argued to contribute to prisoner-to-prisoner aggression, particularly in environments that are stressful and isolating. There also appears emphasis on the prevalence of the mutual perpetrator-victim group [bully/victims] in such environments (Ireland, 2001a), suggesting that stressful conditions in prisons can lead to complex patterns of aggression *and* victimization emerging. The overlap between perpetrators and victims may therefore reflect the changing nature of prisoner subculture, where individuals oscillate between roles depending on the circumstances and ability to maintain their position in the subculture. However, there was also an indication that those who were involved in perpetration were already presented with a preexisting tendency to be aggressive (Ireland & Ireland, 2008; Wiklund et al., 2014), suggesting that they imported this tendency into the prison, which then allowed for this tendency to flourish.

Subordinate theme 4: Staffing delivery patterns creating opportunities for prisoner- to- prisoner aggression

Staff delivery patterns, at an organizational level, can promote an environment whereby opportunities to monitor intragroup aggression become challenged. Staff shortages can reduce the ability of staff to monitor and control aggressive incidents effectively. For instance, Ireland and Archer (1996) note that "bullying" often occurs in areas with minimal staff supervision, such as dormitories, corridors, and showers, where prisoners perceive less oversight and more opportunities for aggression. This was also echoed by Connell & Farrington (1997), who noted bullying was likely to have been promoted by reductions in the supervision evidenced in open facilities.

Theme 5: Fear resulting in distress and help-seeking behavior (8 articles, 13.5%)

Fear was commonly associated with being victimized (Archer et al., 2007; Ireland & Qualter, 2008; Ireland, 2011) and could be aligned with feelings of safety (Wolff & Shi, 2009). Reportedly, 32% of the prisoners fear being bullied (Chan & Ireland, 2009), with victim and bully-victim groups reporting elevated levels of fear for their safety (Power et al., 1997) and bully-victims presenting with higher levels of fear than pure bullies and being more fearful of being bullied (Adams & Ireland, 2018). Moreover, higher levels of fear following victimization led to increased psychological distress, suggesting that fear is a driving feature in promoting distress (Ireland & Power, 2009; Ireland & Qualter, 2008). However, fear was also motivating, with a fear of victimization leading to more help seeking behaviors, especially in juveniles (Chan & Ireland, 2009).

Theme 6: Staff as part of the problem and the solution (6 articles, 10.16%)

Findings indicate a conflicting role of staff arguably contributing to whilst also being pivotal in addressing intragroup aggression (Ireland & Archer, 1996; Ireland & Monaghan, 2006; Kuo et al., 2014; Power et al., 1997). This was captured via two subordinate themes as follows:

Subordinate theme 1: Disparity in staff and prisoner views regarding intragroup aggression

A disparity in perceptions of prisoner-to-prisoner aggression between staff and prisoners was a common element of these papers. Allison and Ireland (2010) found that staff identified more environmental factors than prisoners, which could support such aggression, suggesting a more acute awareness

among staff about the role of the environment. Prisoners, however, were more likely to focus on grievances toward staff as a driving feature (Power et al., 1997). This highlighted a misalignment between staff and prisoner perceptions, which could arguably lead to prisoners not having their experiences authenticated.

Subordinate theme 2: Staff as the guardians of reporting and managing intragroup aggression

Staff were clearly noted to play a key role in detecting, reporting, and managing intragroup aggression (Ireland, 2002b). Additionally, Ireland and Archer (1996) reported that while most prisoners believed staff would intervene in prisoner bullying situations, there were also reasons promoting nonintervention. These included perceptions that staff were indifferent, unable to stop the aggression, or were simply unaware of it. Furthermore, Kuo et al. (2014) highlighted the crucial role of staff in *mitigating* such aggression, noting how effective staff intervention *and* a positive prison climate were associated with lower rates of victimization. Inmates' perceptions of staff, particularly regarding fairness and supportiveness, positively impacted their experiences of victimization. Similarly, Ireland and Monaghan (2006) highlighted the need for staff to be proactive in managing intragroup aggression.

Discussion

Intragroup aggression among prisoners appeared best understood by considering several factors that contribute to understanding such aggression and the potential mechanisms involved. It is important to acknowledge from the outset, however, that the term "bullying" has been the most applied term within the prison literature to capture what is essentially intragroup aggression among prisoners (e.g., Connell & Farrington, 1996, 1997; Dyson et al., 1997; Ireland, 2005a). Bullying is perhaps presented as a more commonly understood term and one that is clearly essential to include in any review of this area to ensure comprehensive coverage. Regardless, the term intragroup aggression captures the essence of what is occurring, namely aggression within the ingroup (prisoners), as opposed to the outgroup (staff). Consequently, regardless of the terms captured within the current review, the focus is on *intragroup* aggression.

The systematic review found evidence for the following superordinate themes, in order of frequency: 1. Individual and social risk markers contributing to involvement; 2. roles involved in aggression and the prevalence of mutual perpetrator/victim groups; 3. attitudes supporting aggression and diminishing the victim experience; 4. environmental factors: fixed and dynamic influences; 5. fear resulting in distress and help-seeking behavior,

and 6. staff as part of the problem and the solution. Overall, the themes supported a role for both individual and environmental factors, illustrating the diverse and dynamic nature of intragroup aggression.

Linking findings to theory

The findings confirmed the offerings of previous theories, including the IMP and MMBSS, via the focus on individual and environmental factors playing a role in promoting intragroup aggression between prisoners (Ireland, 2002a, 2012). Furthermore, there was evidence for the *environment and prior characteristic pathway*, a noted element of the MMBSS that also aligns with the IMP. This pathway focuses on an interaction between the environment and stable individual characteristics, arguing for a trait driven understanding of aggression. The current review demonstrated clear evidence for individual and social risk markers, alongside dynamic environmental influences. Indeed, theme 1 (individual and social risk markers) was most commonly occurring, with environmental influences featuring to an extent throughout the remaining themes. What was not indicated, however, was a clear indication of the *desensitization pathway*. Although there was evidence for individual characteristics that could encourage aggression, such as dominance promoting elements, trait hostility, and anger, a desensitization element was less clearly evidenced. Thus, a systematic review perhaps supports more the *environment and prior characteristic pathways* of the MMBSS, coalescing therefore with the IMP and suggesting some parity across theory in relation to the role for an interaction and the factors that could contribute to this. This is also perhaps a reflection of research being dominated by the individual factors likely to be involved in intragroup aggression, likely a result of an overfocus, at least initially, on understandings driven by individual pathology explanations (Connell et al., 2016; Ireland, 2017).

However, the desensitization pathway is clearly a mechanism proposed as a means of describing how some intragroup aggression can occur. Although the current review did not confirm the existence of such a mechanism with clarity, this pathway could not be completely disregarded. There was, for example, evidence for fear presenting as a particularly salient emotion (Theme 5: Fear resulting in distress and help-seeking behavior), suggesting that what has been described as a desensitization pathway may be best described as a *hyperarousal pathway* whereby prisoners experiencing increased sensitivity to threats seek to protect themselves against this risk. This is similar to the personal precautions captured by McCorkle (1992), with fear an element arguably driving victims to adopt preventative strategies. The importance of fear as a particularly salient emotion to account for has been captured previously via the *Applied Fear Response Model* (AFRM: Ireland, 2005a), which explains how victims in prisons can be markedly influenced by

fear, which can produce a *delayed* flight response as well as form part of a more immediate reaction (e.g., immediate fight/flight). Ultimately, within this model and the current findings, fear is captured as a motivating emotion.

To build further on the AFRM and considering the findings of the current review, it could be speculated that some prisoners are not in fact acclimatized to bullying, as the desensitization pathway had speculated. Rather, some prisoners appear acutely sensitive to aggression risk and are likely immediately reactive to any actual and/or perceived threat of this. Thus, a hyperarousal pathway as opposed to a desensitization pathway would seem to fit here and capture more fear as an acute dynamic factor. This moves conceptualization beyond other important motivating emotions, such as anger and hostility, to fear. For example, it could be speculated that *fear* experienced and/or expected drives an attribution bias connected to hostility (e.g., a flight response), as opposed to the more traditional conceptualization of anger. Thus, what is being argued here is a mechanism that describes a victim's reaction to intragroup aggression that accounts for a physiological response and cognition interpretation that has a basis in fear. This starts to also highlight the importance of an environment where intragroup aggression is taking place.

Importance of the environment

The environment has been reflected throughout the literature (e.Dyson et al., 1997; Ireland, 2017; Ireland, Birch, et al., 2021). What the current review captures, however, is not only the importance of the environment but the diverse and dynamic nature of this, accounting for the social climate with regard to belief and attitude structures, fear of harm *and* assimilation into prisoner subculture. The importance of the physical and social architecture of the prison is highlighted in the current review coupled with the paucity of material goods leading to competition in accessing what is available and limitations within the environment, extended further to capture challenges in relation to service delivery. This also extends, as noted earlier, to several individual factors serving as risk markers for victimization and involvement in intragroup aggression likely emerging in response to the environment. This is likely evidenced by the mutual perpetrator-victim groups in particular, and the factors promoting their engagement in aggression.

Thus, a complex understanding emerges in relation to the medley of factors that could promote intragroup aggression, which arguably extends beyond more simplistic interactional models such as the IMP (Ireland, 2002a) and the MMBSS (Ireland, 2012), even accounting for the role of distinct pathways in the MMBSS. Rather, what is emerging is a more diverse and dynamic interplay between the environment and those housed within it that seems to support more of an ecosystem framework such as that argued by the PB-ECO (Ireland, Birch, et al., 2021).

Adopting an ecosystem-informed understanding

In the PB-ECO, there is an accounting of external and internal factors, but the importance of identifying a dynamic component becomes crucial. The current review provides evidence for several aspects of the ecosystem framework. It captures, for example, a clear role for the social climate, for materials and movement, for physical and cultural structures, residual structures, and a role for internal factors. The review places particular emphasis on the social climate, physical and cultural structures, and individual factors. Although it could be argued that the characteristics a prisoner brings with them are important (Irwin & Cressey, 1962), the current systematic review did not demonstrate considerable evidence of what these *imported* factors could be. Rather, the individual factors identified for both victimization and perpetration appear to relate specifically to the environment that individuals find themselves in. Thus, it appears individuals were responding to the challenges of their environment. This understanding allows for emphasis to be placed on physical and cultural structures and the social climate, which the PB-ECO demonstrates.

Limitations in current theories highlighted by the findings

Nevertheless, there are clear aspects that are not accounted for in these theories, which appear important when considering the findings of the current review. There appeared evidence both for an application of ecological theory but also systems theory, but the latter is not named as such in the reviewed literature. Systems theory has represented an implicit component of preexisting models such as the IMP and the MMBSS but not explicitly so. Indeed, the current findings suggest that a merging of ecological *and* systems theory would be advantageous. Thus, a refined model for understanding intragroup aggression in prisons can be proposed based on the current findings, one that merges an ecological *and* systems approach *and* raises the importance of cognition and emotion in explaining intragroup aggression. It is not, essentially, the individual that is placed within this setting that appears key but rather how that individual is reacting to the specifics of the environment they find themselves in.

Connected to this, an important but seemingly neglected element of this environment appears to be the role of staff. Staff were clearly captured as important in the review (Superordinate Theme 6: Staff as part of the problem and the solution; Subordinate Theme 4.4: Staffing delivery patterns creating opportunities for prisoner-to-prisoner aggression), with evidence that their role is a dynamic and influencing one. This is missing from prior models, essentially where we have the out-group (staff) exerting some influence on the in-group (intra-)aggression. Furthermore, what is arguably missing from earlier theory, which the current review suggests is important, is a bi-directional

relationship between the individual and the environment. There is an element of this in the MMBSS (Ireland, 2012), where the role of reinforcement appears to explain why perpetration occurs, but this is limited and does not truly capture what is meant by bi-directionality or how this would relate beyond perpetration to the role of victims.

Proposing the diffusion model

Thus, what is proposed here, in Figure 3, is a refined and simplified framework – the *Diffusion Model for intraGroup Aggression among Prisoners* [DM-GAP], which accounts for the findings of the current review and draws on elements of the interactional (i.e., IMP and MMBSS) and ecosystem (i.e., PB-ECO) models, but places these more within a systems perspective where *bi-directional* relationships between individuals and the environment they are housed in is emphasized more, and where there is reinforcement and synchronization evidenced between them. Thus, there is *diffusion* between the elements but ultimately this is *generated from the core*, namely the envi

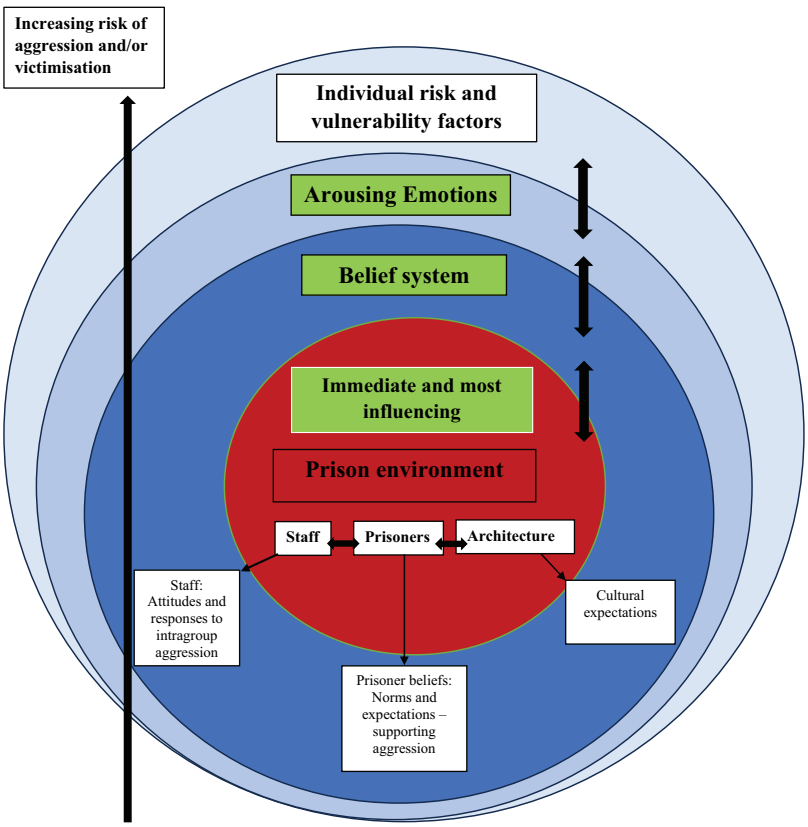

Figure 3. Diffusion Model for intraGroup Aggression [DM-GAP] among prisoners.

The DM-GAP is presented as a simple model that captures the process by which intragroup aggression could occur. Importantly, and capturing a key element of the systematic review, the prison environment is placed at the center, as the most critical element, influencing the reinforcement and development of a belief system that promotes intragroup aggression either through support for perpetration and/or minimization of the victim experience. This includes disparaging/negative and aggression-justifying beliefs, again with beliefs a core element of the review's findings. The belief system is further integrated with *arousing* emotions, which would allow for a hyper-arousal pathway (e.g. highly reactive, such as some fear responses) to emerge to explain perpetration and/or victimization, but also an under-arousing emotional pathway (a hypo-arousal pathway, such as a lack of experienced empathy or desensitization) where a perpetrator fails to respond/be aroused by a victim's experience and/or likely experience, allowing for perpetration. This could capture the desensitization pathway of the MMBSS model but also capture the hyper-arousal pathway (i.e., Superordinate Theme 5: Fear resulting in distress and help-seeking behavior). These are just examples of how this could be applied, with the notion that the model can accommodate more routes through which perpetration and/or victimization emerges. For example, it does not have to be an emotion connected to hyper- or hypo arousal, it can be an emotion that is experienced that informs the resulting decisions/behavior taken by the perpetrator and/or victim.

Beyond the cognitive and emotional components, the DM-GAP also evidences individual risk and vulnerability factors, which can be brought into the environment and/or manifest/be enhanced by the victim experience. This captures the full array of elements noted within a dominating theme as part of the current review (i.e., Superordinate Theme 1). This aspect is placed beyond the DM-GAP cognitive and emotional elements since these individual elements represent the lens through which emotions and beliefs can be developed, interpreted, experienced, and/or reinforced. Essentially, this would be where decision-making would be found, informed by previous experience and/or currently emerging events that are then reinforced. The DM-GAP allows for the individual risk factors, beliefs, and emotions to therefore influence one another in a bi-directional manner, with evidence of these occurring in the context of a specific environment, serving therefore to increase the risk of aggression and/or victimization.

At the core, however, and unique to this interpretation is the environment, with the components of staff, prisoners, and architecture afforded equal prominence. Thus, the environment serves to *diffuse* throughout all aspects of the components. This captures the findings of the current review where not only was the environment (social and/or physical) permeating throughout the themes, as well as being recognized as a unique theme, but there was also an acceptance that the role of the staff system was an equal component. The

model argues that the prison environment is a key facilitator, akin to the *heart* of the model, which then develops and reinforces the belief and emotional structures. Emotions and beliefs therefore become the mechanism by which a prisoner's involvement in intragroup aggression emerges, with their individual risk and vulnerability factors influencing the ultimate role they play (i.e., as a victim and/or perpetrator).

Limitations

The current review is not without limitations. The review clearly evidenced that much of the literature is cross-sectional in nature, with a lack of longitudinal enquiry. Differences in approaches to conceptualizing and measuring intragroup aggression were also evidenced, with the research field lacking a well-developed international literature base. Such a base would allow for a more solid generalization of understanding and a more developed means of capturing differences in prison environments across the globe, as opposed to a primary focus on the UK experience. Whereas the UK-based research could be seen to represent a driving force in promoting studies into this area, there remains a need to ensure the UK experience does not unnecessarily inform the international literature base. For this reason, more exploratory enquiries concerning the mechanisms underpinning intragroup aggression in other countries may have clear benefits. Having noted this, the current review provides an outline of where the research base has advanced and where the limitations remain. Consequently, the review can provide a foundation for structuring future research so that the outcomes advance the literature base as well as seek to replicate and validate the theoretical models offered to date, including the DM-GAP.

Conclusion and directions for future research

Ultimately, the DM-GAP aims to synthesize the findings of the current review to explain factors arguably promoting intragroup aggression, with the aim of demonstrating the integrated elements that need to be accounted for in any formulation of prisoner-to-prisoner aggression. This is perhaps key in the effective management of intragroup aggression, with the DM-GAP presented as a means by which intragroup aggression can be formulated, as it occurs. Future research could focus more on the interplay between factors, with a focus on the role of the environment and how this can inform cognition and emotion. A particularly valuable avenue to pursue perhaps represents the role of cognitive and emotional attribution and misattribution and how this is influenced by the environment and preexisting individual tendencies/belief structures. Ultimately, future research should strive to explore factors beyond those that merely describe intragroup aggression to understand why this occurs and how this can be mitigated against. There is also value in considering the application of a model

such as the DM-GAP to other environments of related interest, such as secure hospitals, pending a more developed body of evidence emerging in the future.

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