

A systematic review examining the use of media as an offence-related behaviour in recidivism of offenders

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Article accepted for publication on 20th October 2020 in *Aggression and Violent Behavior*

Highlights

- Offenders have access to, and use, a range of different types of media
- In 20 years only 3 studies tested media offence-related behaviour links to recidivism
- Offenders' media use appears to be a catalyst in forming a recidivism pathway
- Media type and risk level of offenders may mediate translation into recidivism
- Negative behaviour via media use may indicate developing serious harm offences

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Abstract

Background: Risk of harm to others is largely assessed by official behaviours and what an offender conveys to professionals. Recording offence-related behaviour (OB) may assist in high-risk offender management. The extant research on links between media use and violence often involves the general population where real-world offending behaviours are not outcome measures. This systematic review aimed to examine, systematically and critically, research relating to media OB of offenders.

Method: Eleven databases were queried to identify relevant literature. To ensure no past and ongoing studies were excluded, key papers' reference lists were closely examined for further relevant studies and experts in the field were contacted. Studies included were assessed for quality across prognostic factors.

Results: Three studies were identified as investigating media OB for people who have recidivated. Data synthesis highlighted that different forms of media are used in the process and act of re-offending. Risk level of offenders and media type were factors in recidivism.

Conclusion: Among some offenders media OB may be a pathway to re-offending. The recording, monitoring, and open discussion of media OB may inform risk management strategies for offenders. Further prospective research is required which examines media OB and recidivism utilising both qualitative and quantitative methods.

Keywords: offence-related behavior; media use; offender; risk assessment; recidivism

1. Introduction

Media are highly prevalent in today's society and represent a ubiquitous means of communication that may shape the way people think, feel and behave. Media are available not only to people in the community, but also to users of custodial, psychiatric, and secure community residential services. For example, the range of media an offender may have access to could include; television, the internet, social media, books, magazines, newspapers, computer games, and mobile phones (Chappell & Shippen, 2013). Exposure to risk-related content online may encourage viewers to enact risk-taking behaviours offline, including violence to others (Branley & Covey, 2017). For individuals who have a history of maladaptive behaviour, such forms of media exposure may be a channel for further problematic behaviour, and an opportunity to express negative thoughts, feelings, and behaviours. An inspection by Her Majesty's Inspectorate of Probation (2017) highlighted that of the 115 cases they examined where young people committed a serious offence, 25% directly related to the use of social media. For example, social media facilitated arguments leading to serious assaults, blackmail using indecent images of the victim, and gang videos to stake territory, recruit new, or provoke other, gang members. Social media were also used to

portray others as a sex offender to cause harm, or to gain knowledge of sexual crime prior to committing a hands-on offence. Consequently, the relationship between media offence-related behaviours and re-offending needs to be explored to develop our understanding and support efforts to manage people in secure institutions before and following their release.

The risk assessment and management of prisoners, probationers and forensic patients (offenders) can be a challenging process. Research-validated actuarial risk assessments (ARAs) are the most evidence-based tools available to predict whether an offender will re-engage in offending behaviour after release into the community (Hanson & Morton-Bourgon, 2009). ARAs can undoubtedly help inform key forensic decision-making processes (Monahan & Skeem, 2015), yet, they may have limited accuracy when applied to offenders not well represented in the tool's calibration sample. Examples include, women and minority ethnic offenders (Singh & Fazel, 2010), serious high-risk offenders (Greenall & Richardson, 2015), or offenders who have mental health difficulties (Ramesh, Igoumenou, Montes & Fazel, 2018; Singh & Fazel, 2010). In practice, risk of future offending can be assessed by official behaviours, offender self-report, or third party observations (Daffern, Jones & Shine, 2010), though the latter is not always easily transferred into practice (Viglione, Rudes & Taxman, 2014).

Simultaneously, research has demonstrated a link between prisoner misconduct and recidivism (Cochran et al., 2014). However, there is conflicting evidence of this association (O'Leary & Glaser, 1972; Trulson, DeLisi & Marquart, 2009). For example, this association may not be relevant for all offending populations. Among socially inadequate prisoners, there may be limited evidence of violent or negative behaviour¹ within the day-to-day lives of withdrawn, socially inadequate prisoners, making challenging any assessment that depends on such readily visible and official information. Indeed, the extant research suggests a weak relationship between individual risk factors and recidivism amongst sexual offenders (Hanson & Morton-Bourgon, 2009). The custodial environment may also complicate assessment of risk due to its potential impact upon how negative behaviours may be expressed (Jones, 2004; Daffern, Jones, Howells, Shine, Mikton et al., 2007) or suppressed (Zamble, 1992; Gordon & Wong, 2015), and how dynamic risk factors interact with, and present within, different contexts (Gordon & Wong, 2010; Jones, 2010).

Some authors believe that the risk assessment process may be strengthened by the systematic recording of prisoners' day-to-day behaviours (Clark, Fisher & McDougall, 1993; Hausam, Lehmann & Dahle, 2018). A

¹ The term "negative behaviour", used throughout this paper, includes reference to thoughts, feelings, and/or behaviours which although are not illegal or anti-social (e.g., sexual thoughts, writing letters to unwanted recipients), represent negative behaviour as they move towards, rather than away from, offending behaviour.

seminal study by Clark, et al. (1993) concluded there was consistency across the community/custody divide in relation to offence-related behaviours (OBs) of individuals. OBs, also referred to as offence analogue behaviours (Gordon & Wong, 2010), are actions by an individual which represent manifestations of dynamic risk factors. Despite the potential benefits of capturing such information, recent OBs within custody and the community may often be overlooked because only official behaviours tend to be taken into consideration when assessing risk. For example, some research has highlighted that the frequency of OBs, when low-level behaviours are included, can significantly predict recidivism or a return to custody amongst actuarially and clinically high-risk prisoners (McDougall, Pearson, Willoughby & Bowles, 2013; Pearson & McDougall, 2017). Furthermore, such OBs were superior at predicting recidivism than service-as-usual approaches (Pearson & McDougall, 2017).

It may therefore be reasonable to infer that, when engaging with professionals, offenders may mask negative OBs, and elevate pro-social behaviours. One way in which an offender may engage in such hidden OBs, is through their use of media. Consequently, the examination, recording, and open discussion of a range of possible OBs may be very important and have policy implications. In particular, the above literature raises the question as to whether media OB may be a cause of, or a catalyst in, recidivism. In other words, it is currently unclear whether media OB directly triggers, or shapes, or has no impact upon, re-offending.

1.1 How media might influence recidivism

Given that engaging in media use may mediate a negative outcome, media use in relation to OBs as an ‘intervention’ is not like a conventional intervention. It is unclear whether media OB is a causal factor for, or a predictor/correlate of, recidivism. The extant literature, briefly discussed below, highlights a number of approaches to crime causation, where media use could generate, facilitate, or enhance offence-related thoughts, feelings and behaviours.

Media crime models highlight that being exposed to media content, such as criminogenic video games, may be a significant cause of crime. According to the General Aggression Model (GAM) (Anderson, Gentile & Buckley, 2007), exposure to violent media (e.g., video games) increases aggressive behaviour through: priming aggressive thoughts, perceptions, and scripts; by learning; and, by generating and stimulating states of anger (e.g., during game play). Hence, from this perspective, frequent exposure to and interaction with violent media is expected to increase acts of aggression and/or violence. In contrast, the media catalyst crime model states that people who are more likely to engage in negative behaviours may engage in, and perceive, media such as violent video games

in a way which supports their behaviour (Surette, 2013). From this perspective, video games are crime catalysts or ‘rudders’ for crime as they shape how the crime will take form. A key difference between these media crime models is that the catalyst model assumes media shapes criminality, which may have taken place with or without the media exposure, whilst the GAM approach assumes engaging in the media directly primes and stimulates crime and/or violence such that less media exposure would lead to a large reduction (Surette, 2013).

According to Uses and Gratifications Theory, people consume media in order to meet their specific information needs and gain gratification (Lariscy, Tinkham & Sweetser, 2011). Media use may have a number of positive outcomes for some, but for others including for example adolescents in the general population, some research also emphasises a link between increased media violence exposure and increased aggression (Huesmann, Moise-Titus, Podolski & Eron, 2003; Krahe, 2014; Krahe & Möller, 2010; Möller & Krahe, 2009). The use of media may influence or be influenced by thought structures: a study of 382 university students indicated that the relationship between violent media exposure and aggression was only significant in the presence of criminogenic thinking (Wagar & Mandracchia, 2016). Similarly, across a multi-national sample, aggressive cognitions strengthened the positive association between exposure to media screen violence and aggressive behaviour (Anderson et al., 2017). The above findings and others that follow exposure to media screen violence, including reduced sympathy towards victims (Linz, Donnerstein & Adams, 1989) and development of hostile worldviews (Bushman, 2016), may be explained by observational learning and reinforcement (Bandura, 1997), and desensitisation (Wolpe, 1958).

However, due to methodological problems with many of the above studies, the direction of the link between violent media and violent behaviours is strongly debated. Methodological deficiencies include misleading statistical information, a lack of standardised measures, and failures to sufficiently link aggression to real-world violence (Ferguson, 2009), with several studies using laboratory behaviours during and after violent video games as outcome measures. Indeed, a meta-analysis examining the relationship between media violence and violent aggression indicated that amongst the general population there was no clear link (Savage & Yancey, 2008). Moreover, a recent study highlighted that adolescents’ recent engagement in violent video games was not significantly associated with their aggressive behaviour within the last month, as evaluated by their carer (Przybylski & Weinstein, 2019). A key difficulty in understanding the role of media OB in recidivism is that many of the above studies use the general population, and have not used actual violence and/or other forms of offending as a dependent variable. Furthermore, new technological developments mean there may be different forms of media use which are not accounted for within historical studies.

That some studies refute a general link between media use and negative behaviours may be due to the association being muted compared with that for people who have a history of violence and/or sexual offending. For example, those who grew up in a violent home, and who have a distorted perspective regarding physical confrontation, may be more likely to have a preference for violent films (Browne & Pennell, 2000). Similarly, high-risk offenders who use pornography frequently are reportedly at higher risk of sexual aggression, when controlling for sexual aggression risk factors (Kingston, Malamuth, Fedoroff & Marshall, 2009). A meta-analysis also noted *type* of pornography mediated the link between pornography use and aggression (Allen, Dalessio & Brezgel, 1995). Specifically, although exposure to media content including nonviolent sexual behaviours did increase subsequent aggression, Allen and colleagues found higher levels of aggression following media content relating to violent sexual behaviour. It has been argued that pornography generally is associated with a set of learned sexual behaviours and coercive sexual behaviour (Tomaszewska & Krahé, 2018). Media use may therefore be a frequent antecedent to harmful behaviour. That is, problematic remote/hands-off behaviour(s) may occur via media use that could be an indicator of a possible further offence.

In child sexual offending, prominent offence-process models hold that being sexually aroused by children is a common precondition for child molestation (e.g., Finkelhor, 1984). However the recidivism rate of online-only sexual offenders is approximately 5% according to meta-analysis by Seto, Hanson and Babchishin (2011). Although importantly only 1-in-8 online offenders had a history of contact offending, such a low official recidivism rate may occlude any relationship between media OB and recidivism among sexual offenders. Interestingly however, some studies in the review found that the small majority (55%) of online offenders admitted during self-report to a hands-on offence towards a child (see also Eke, Seto & Williams, 2011). Study methodology, including the sensitivity of the measures of outcome, may therefore affect the relationship between media OB and recidivism for sexual offenders.

Hence, the central issue which can be taken from this brief overview of the extant literature is that there is a chicken-and-egg problem which can only be resolved by a systematic consideration of study design, particularly sample make-up, regarding prior risk. Consequently, a systematic review examining the association between media OB by offenders and recidivism attempted to make clearer any association in this population.

1.2 Rationale, aims and objectives

This review was particularly interested in OBs via media use which precede serious harm and recidivism. The above studies, described in sections 1 and 1.1, highlight that media use may be an important factor, and a pathway,

in the development of recidivism. The aim of this review was to examine, systematically and critically, research relating to media OB of offenders and its association to recidivism. Specifically, by examining the extant literature which focuses upon antecedents for recidivism of offenders, a better insight may be gained regarding whether media OB is a cause of, or a catalyst in, recidivism.

2. Method

A systematic review of the literature was carried out examining the association between media OB and recidivism, and the possibility that media OB may be a pathway to recidivism for offenders. The review was carried out in line with PRISMA-P guidelines (Moher et al., 2015). Included papers generated from searches were assessed for quality across prognostic factors (Hayden, van der Windt, Cartwright, Côté & Bombardier, 2013). Specifically, detailed and relevant information was examined which relates to attrition, sampling, outcome measures, confounding factors, and statistical analysis.

2.1. Criteria for inclusion

The association between media OB and recidivism was examined for the following populations:

- both male and female prisoners, ex-prisoners, and offenders who have never been to prison
- ages ranging from 16 to 80 years (to match the typical range of time an offender may engage in the criminal justice system – over 13,000 prisoners within England and Wales, by June 2019, are over 50 (16%), of which 1,756 were at least 70 (Ministry of Justice, 2019))
- offenders and/or ex-prisoners who have resided in, or are currently residing in, psychiatric, secure community settings and/or within their community within the general population

2.2 Types of studies

It was anticipated that media OB would lead to a negative outcome. Eligible studies concerned participants' media use including: television/video, the internet, social media, books, magazines, newspapers, computer games, and mobile phones. Within this media use, there was a range of specific media consumed which would also be eligible for inclusion. Since it would have been misleading to assume people do not consume *any* form of media, it was predicted that the levels of media OBs and their impact upon recidivism would vary across generated

studies. Consequently, the level and purpose of media use was closely monitored and taken into account when examining the findings of each study to ensure that individual results were contextualised. Relatedly, it was anticipated that given the nature of the intervention being studied, instances of randomised controlled trials, although eligible for inclusion, would be limited. Preliminary searches failed to find any such studies yet it was anticipated there may be indirect studies, where offending behaviour was observed after media use intended as a supportive process. Studies included mixed and single method studies where specific forms of media use were examined among offenders.

2.3 Types of outcome measures

Studies were examined where media use was classed as an OB. OBs can be defined as actions by an individual which are manifestations of dynamic (criminogenic) risk. That is, OBs are recorded/unrecorded offences or behaviours which are closely related to offending. Primary outcomes in this regard could therefore include OB via media use where the following occurred:

- Recidivism (indicated by arrest or criminal conviction)

Given that OBs can include unrecorded action(s), it was likely that research would focus upon measures such as recidivism, where the participant has been arrested, charged, or convicted of a crime. However, there may also be instances where recidivism does not occur and instead there has been a violation of rules resulting in a warning or sanction. As a result, secondary outcomes where media use was classed as an OB could include, but were not limited to, the following:

- Being recalled back to custody due to violation of release conditions
- Use of specific forms of media that in themselves breach boundaries within the rules where participants reside, or breach licence conditions, such as creating a profile for a dating application²

Reasons for sanctioning could also include media use where aggression, trolling, taunting, confrontations, and behaviour which is linked to past and/or future criminality are demonstrated.

² Creating a profile on a dating website is not an offence, but in the context of a convicted sex offender against adults where professionals are not informed that the individual is seeking an intimate relationship, this would be deemed as OB.

There may be occasions where media use in itself is officially recognised as an offence, and attracts a primary outcome. For example, a study may report the use of child pornography by high-risk ex-prisoners resulting in an increase in recidivism rates. Such studies which were generated during the systematic review were examined carefully to determine the purpose of the media use, and whether the OB resulted in a primary (recidivism) or secondary (recall/imprisonment) outcome. Under such circumstances, the OB may therefore not only be the antecedent to recidivism as it is also the actual offending behaviour. However, these studies were eligible for inclusion in the review to better understand the relationship between media OB and recidivism.

If neither a primary nor secondary outcome as defined above was reported or examined within a quantitative study, then the study was excluded from the review. Within qualitative studies, neither primary nor secondary outcomes were always reported or examined, yet, a study was still eligible by means of, for example, qualitative interviews indicating self-reported historical OB which did not result, or had already resulted, in a conviction or formal action within the criminal justice system. Such qualitative studies were explored further within the full text to determine eligibility. However, we maintained a focus on recidivism: all studies were excluded where an outcome was related to an index offence, and where the media use was not related to recidivism thoughts, feelings or behaviours.

2.4 Settings and timeframe

Due to time and resource constraints for the current project, studies were excluded where the method and results were not produced in English. To generate a greater quantity and depth of studies across different settings, studies using data collected from 1998–2019 were included. The internet is a key source of media use and would not have been a significant way in which information was consumed prior to 1998 as it was not in general use until the 1990s. Using data generated from 1998 also ensures studies are generationally relevant (i.e., within a 20 year timeframe). For instance, it was anticipated that recent studies would be more relevant due to the creation of social media and alternative ways in which people currently consume media. Additionally, implementation and evaluation of second generation risk assessment tools was limited before the late 1990s (e.g., STATIC 99; Hanson & Thornton, 1999).

2.5 Search methods

Initial scoping searches prior to engaging in a full systematic review of the available literature ensured relevant studies existed. The current review included both published studies and grey literature. Three lists of search terms were created to identify relevant literature within article titles and abstracts. The first set of terms related to the specific population under examination, and the second set of terms related to the different types of media use. The third set of terms related to the range of OB which may occur via media use. Terms were combined in order to generate specific studies relevant to the objectives of the review.

1. Population of Interest

Offender OR Prisoner OR Incarcerated OR Ex-offender OR Mentally Disordered Offender OR Probationer OR Intimate OR Abuser

2. Media Use

Smartphone OR Mobile phone OR Television OR Media OR Dating app OR Computer Games OR Pornograph* OR Film OR Magazine OR Book OR Radio OR Internet OR Newspaper OR Music OR Digital Technolog* OR Cell phone OR Tablet OR Device OR Twitter OR Snapchat OR Facebook OR Instagram OR Tumbler

3. Offence-related behaviour

Sext* OR Recidivism OR Reoffend* OR Offend* OR Revenge Porn OR Troll* OR Taunt* OR Bully* OR Stalk* OR Groom* OR Pseudo-photograph OR Harassment OR Malicious communication OR Aggression OR Violence OR Abuse OR Catfish* OR Fraud OR Scam OR Dark Web OR Sadfish* OR Drug deal* OR Substance misuse OR Trigger OR Child sexual exploitation OR Terror OR Devian* OR Offence-Parallel* OR Offence-Analog OR Offence-Related

The search was completed by one reviewer who initially screened the generated manuscript titles and abstracts. Papers which were initially considered as relevant were further examined and if they were deemed potentially suitable for study inclusion full texts were read. Papers deemed out-of-scope (e.g., not offenders) were excluded. Hand searches were undertaken on Google Scholar. Key papers which were deemed highly relevant for inclusion in the review were closely assessed for citing papers to determine whether these studies were also relevant for inclusion.

To ensure past and ongoing studies had not been overlooked experts from the field of media use and violence, in addition to the OB literature, were contacted. Experts within the field included those who had authored key papers generated from the review. Retrospective media use studies were also eligible for inclusion in line with the timeframe specified in section 2.4. The search strategy was modified for the Scopus database where the search functions relating to the three sets of search terms were not supported.

2.6 Electronic sources

To generate both published and grey literature the search terms noted in section 2.5 were applied to the following databases in December 2019, and reference lists of highly relevant studies were examined.

- The Home Office (UK)
- Ministry of Justice (UK)
- APA PsycNet
- Scopus
- Web of Science
- ProQuest
- PubMed
- EBSCO
- PROSPERO
- Cochrane Library
- Campbell Collaboration

2.7 Assessment of study quality

As noted in section 2.2, media use in relation to OB was proposed to lead to a negative outcome. Study quality, as highlighted in section 2, was evaluated across prognostic factors (Hayden et al., 2013). Specifically, study quality was examined across the following criteria:

1. *Attrition* – extent of and reasons for participants dropping out of the study
2. *Study participation* – the study accurately represents the population of interest (i.e., an issue of sampling)

3. *Outcome measures* – a clear definition of how outcomes were operationalised and measured
4. *Confounding factors* – have all factors been measured which may have influenced the findings of the study e.g., risk of reoffending level
5. *Statistical analysis* – what analysis was used, what was reported, and associated limitations

The assessment of risk and bias of generated studies was conducted by reviewer one (the first author). Where there were uncertainties regarding whether a paper should be included, this was resolved in discussion with a second reviewer experienced in conducting systematic reviews (the second author).

3. Results

In total, 819 papers were initially selected from the inspection of 5572 titles that were generated across all search methods. After abstracts were then examined, a total of 140 full text papers were sought to verify eligibility. After excluding 21 duplicate studies and 116 papers which were not deemed suitable, a total of three studies remained. Figure 1, below, highlights the flow of studies from identification to inclusion (Moher, Liberati, Tetzlaff & Altman, 2009). Table 1 (see section 3.2.5), reports a description of each study included in the review.

3.1. Characteristics of included studies

Studies consisted exclusively of adult male offenders. Participants included prisoners and offenders who were located either in custody (McDougall et al., 2013), or at a University teaching hospital (Kingston et al., 2008) during the commencement of studies. One study (Endrass et al., 2009) was not clear as to where exactly participants resided at the onset of the study. The criminal history, where reported, and characteristics of participants varied across violent and sexual offenders. Specifically, participants included offenders who were, or had been, involved in; the grooming of children, hands-on offences with children, possessing and/or consuming illegal pornography, and serious violence. Studies included in the review were conducted in the United Kingdom, Canada, and Switzerland.

Database:	Papers of interest /Total Hits:
The Home Office (UK)	0 / 468
Ministry of Justice (UK)	5 / 235
APA PsycNet (incl. PsycINFO and PsycARTICLES)	0 / 8
Scopus	0 / 0
Web of Science	432 / 3031
ProQuest	0 / 13
PubMed	86 / 391
EBSCO (incl. MEDLINE)	282 / 1280
Prospero	3 / 71
Cochrane Library	0 / 63
Campbell Collaboration	0 / 0

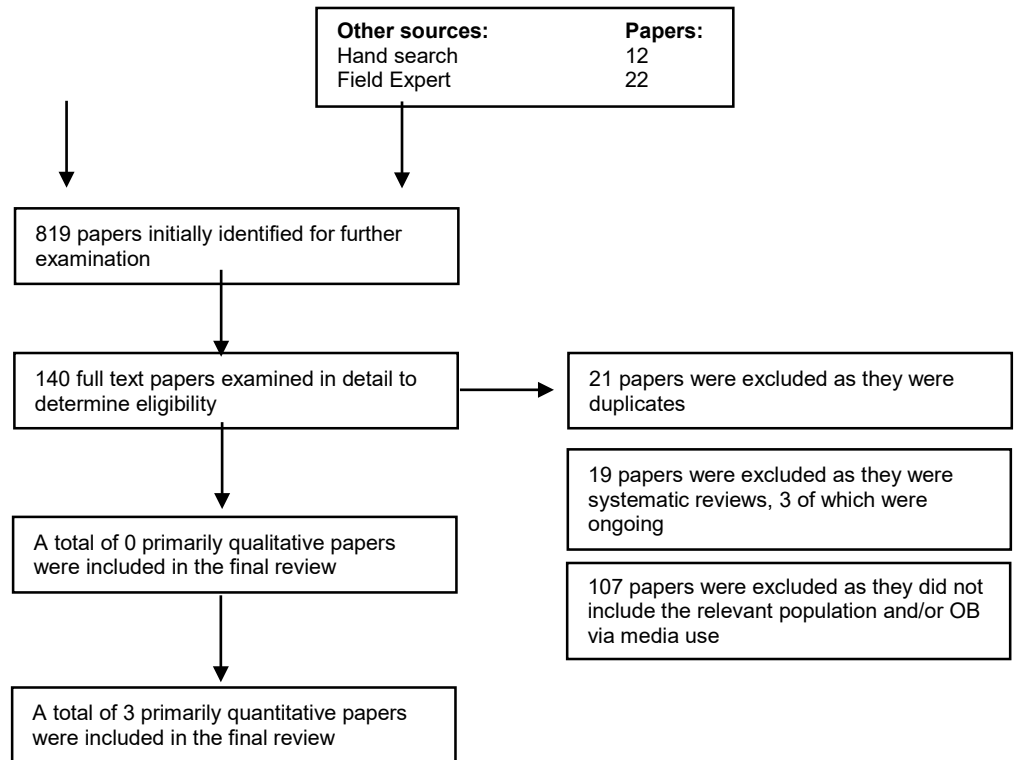


Fig 1. PRISMA flow chart highlighting the flow of studies from identification to inclusion

3.2. Quality of included studies

3.2.1 Attrition

Studies included in the review were limited with regard to information on participant attrition. One study noted that participants were excluded from the initial analysis where their criminal history indicated a sexual offence towards an adult (Kingston et al., 2008).

3.2.2. Study participation

Two studies (Kingston et al., 2008; McDougall et al., 2013) had a highly relevant sample which included high-risk adult male offenders who had a history of engaging in serious violent and sexual crime. Another study met the population of interest criteria by means of sampling adult male offenders who were convicted of consuming illegal (specified within sections 4.1 & 4.2) pornography (Endrass et al., 2009). However, this study (Endrass et al., 2009) was limited to well-educated users (speaking English as a foreign language) who have access to a credit card and therefore may not be representative of all users of illegal pornography.

One limitation across all studies was that participants' criminal diversity was not reported. Instead, there was a focus upon offenders' index offences. This may limit the findings of the review in terms of what can be reported with regard to the development of recidivism, and the type of offenders, in relation to offence history, to which results may be most applicable. Similarly, there was a lack of representation from female and young offenders across all studies which may subsequently limit the findings of this review to adult males. In addition, a large proportion of prisoners internationally, and therefore offenders, have mild and/or severe and enduring mental health difficulties (Fazel & Seewald, 2012). Though, it was unclear across all studies to what extent participants had such difficulties.

3.2.3. Outcome measures

Studies included in the review assessed participants' media use via a mixture of validated questionnaires, questionnaires generated for the specific purpose of the study, file reviews, and psychiatric interviews. All studies included examined either a primary or secondary outcome. One study examined both recidivism and recall rates (McDougall et al., 2013). Another study looked at recidivism only (Kingston et al., 2008), whilst the final study (Endrass et al., 2009) examined recidivism which included a conviction (strict definition) or where a conviction, ongoing investigation, or charges occurred (broad definition).

All reconviction, arrest, and criminal investigation data were confirmed via appropriate organisations and authorities. Consistent with our inclusion criteria, all studies were clear that each participant had a previous conviction prior to primary and/or secondary outcomes (Endrass et al., 2009; Kingston et al., 2008; McDougall et al., 2013). Table 1, below, highlights details of each included study and the outcomes reported.

3.2.4. Confounding factors

A main confounding factor amongst studies was that the frequency of participants' media use over time was not reported. This made it difficult to understand the extent to which the volume of media use impacted on primary and secondary outcomes.

In addition, one study (Kingston et al., 2008) was dependent upon participants' self-report of their media use. This study asked participants to recall their media use over their lifetime which may have impacted upon accurate recall. Participants were also being assessed in a forensic context and therefore socially desirable responses may

have been expressed. Therefore, the validity and generalisability of the related findings may be compromised, whether by memory or by distortion.

3.2.5. Statistical analysis

All studies included in the review were quantitative in design. Studies applied statistical techniques such as logistic regression (Kingston et al., 2008; McDougall et al., 2013), correlation analysis (McDougall et al., 2013), and non-parametric tests (Endrass et al., 2009; McDougall et al., 2013). For all studies the number of participants appeared sufficient to generate appropriate power for the methods used.

Study	Aims	Participants	Method	Media use as an OB	Outcome Measure	Conclusion
<i>Kingston et al. (2008)</i>	To examine the impact of pornography use on recidivism	341 adult male child sex offenders convicted of a hands-on offence	Pornography use was assessed via self-report	Pornography use impacting upon recidivism	<p><u>Primary:</u></p> <ul style="list-style-type: none"> • Recidivism <p><u>Secondary:</u></p> <ul style="list-style-type: none"> • n/a 	<p>Pornography use significantly predicted recidivism. The frequency of use is a risk factor for high-risk offenders compared to low-risk offenders</p> <p>Deviant pornography content (containing children and/or violence) was a risk factor for both groups</p>
<i>Endrass et al. (2009)</i>	Examine the impact of viewing child pornography on recidivism for hands-off and hands-on sexual offences	231 men who were charged with consumption of child pornography	Case file reviews and a 6 year follow-up of recidivism rates	Consuming child pornography alone is not a risk factor for committing a hands-on sexual offence for those who have no history of such offence	<p><u>Primary:</u></p> <p><u>Recidivism:</u></p> <ul style="list-style-type: none"> • 3% (7) reoffended by means of a violent and/or sexual offence • 2.6% (6) reoffended by means of a hands-off sexual offence • 0.4% (1) reoffended via a violent offence • No hands-on sexual offences at the 6 year follow-up <p><u>Secondary:</u></p> <p><u>Reconvictions, ongoing investigations & charges:</u></p> <ul style="list-style-type: none"> • 6% (14) reoffended by 	Viewing child pornography does not increase the risk of recidivism via a hands-on sexual offence for male offenders with a prior conviction of a hands-off sexual offence

Study	Aims	Participants	Method	Media use as an OB	Outcome Measure	Conclusion
					means of a violent and/or sexual offence <ul style="list-style-type: none"> • 3.9% (9) were convicted, investigated or charged with a hands-off sex offence • 0.8% (2) were convicted, charged or investigated of a hands-on sexual offence • 1.3% (3) recidivism via a violent offence 	
McDougall, Pearson, Willoughby & Bowles (2013)	To examine the contribution of prison behaviour monitoring to predict recidivism and recall	High-risk adult male MAPPA offenders	Prisoners (n= 25) OBs were recorded by prison officers with a 1 year follow-up of behaviours within the community and compared to prisoners (n= 36) where OBs were not recorded	Engaging in disallowed media appeared to be an indicator of a serious future offence and recidivism (e.g. writing letters to ex-partner predicted an alleged assault on her)	<u>Primary:</u> <ul style="list-style-type: none"> • Recidivism <u>Secondary:</u> <ul style="list-style-type: none"> • Recall 	Monitoring prison OBs, which may include media use, could be beneficial in assessing risk for those released into the community

Table 1. Study details of all papers included in the review

4. Data synthesis

Due to the limited number of studies included in the review, a meta-analysis was not deemed appropriate. Instead, the synthesis is reported through a narrative approach within three sections; types of media used by offenders, the use of media for OB of offenders, and the association between media OB and recidivism.

4.1 Types of media used by offenders

The types of media used included; the internet, adult films and/or books, child and other illegal pornography, writing letters, adult pornography, and the telephone. It is important to note that of the three studies included in this review, two focussed upon pornography use. Specifically, the type of pornography consumed by offenders included; non-violent pornography, violent and/or child pornography, and other illegal pornography (e.g., including animals or excrement).

4.2 The use of media for OB of offenders

Media OB included; viewing pornography containing children and/or violence, viewing other illegal pornography which included brutality, excrement and/or animals, adult pornography, prisoners contacting women in the community or in other prisons who had children, and writing, but not sending, letters to an ex-wife and future victim.

In one study the frequency of OBs across offenders improved the prediction of reoffending within the community (McDougall et al., 2013). Similarly, another study reported that pornography use, in the form of adult films and/or books, significantly predicted recidivism (Kingston et al., 2008). The frequency of pornography use was a risk factor for high-risk adult male offenders when compared with low-risk offenders. Specifically, the more media OB (pornography) a high-risk offender engaged in, within this sample, the more likely they were to be recidivists 15 years after release from custody controlling for risk factors for sexual aggression. Thus, for high-risk offenders it was not only the precise media OB that was most influencing recidivism, but the amount of media that was being consumed.

However, it is important to note that media OB was not always a direct indicator of recidivism. For example, in one study consuming child pornography on its own was not a risk factor for committing a hands-on offence (Endrass et al., 2009). Nonetheless, it can be seen within this study that offenders engaged in low level illegal behaviours (e.g., collection of illegal pornography) which have evolved towards a prosecutable offence, some of which included a contact offence (Endrass et al., 2009).

OBs via media use were in some instances equivalent to actual offences, and not only thoughts or feelings which may indicate that a future offence may occur. This may be reflective of the results that primary outcomes (recidivism/arrests) were more prevalent than secondary outcomes (see Table 1). However, it is important to consider that this may have been the case because studies primarily examined offending and/or serious negative behaviour, as opposed to monitoring the thoughts, feelings and behaviours of offenders who engage in different forms of media.

4.3 The association between media OB and recidivism

These data report that media OB and recidivism are closely associated in that not only are different forms of media used in the process and act of a criminal offence, but OBs may be expressed through various types of media.

The data also highlight that some media use may increase OBs and raise the likelihood of future re-offending for certain offenders.

The strength of the association between media OB and recidivism could be examined in the primary studies' coefficient values. Specifically, one study reported a strong association between the risk level of offenders and media OB, with regard to pornography use, when predicting criminal (.83) and violent (including sexual) recidivism (.75), whilst reporting a medium association for sexual recidivism (.45) (Kingston et al., 2008). Similarly, another study highlighted a medium association between OB and recidivism and recall (.64) to predict recidivism and recall of high-risk offenders when compared with service as usual approaches (.33) (McDougall et al., 2013).

The odds ratios for these results indicate that for every increase in one unit of media OB (i.e., pornography use), there will be a 2.3, a 2.1, and a 1.6 unit rise across criminal recidivism, violent recidivism, and sexual recidivism, respectively (Kingston et al., 2008), assuming the offender's risk level, as recorded at the time using the STATIC 99 (Hanson & Thornton, 1999), remains constant. In addition, every one unit increase of OB will result in a 1.9 unit increase in recidivism and recall for high-risk offenders (McDougall et al., 2013) assuming the methodology of OB data collection remains constant.

Indeed, the strength of the association between media OB and recidivism was also reflected by a large effect of pornography use for high-risk offenders on violent ($d = 1.35$) and criminal recidivism ($d = 1.39$), and a medium effect in relation to sexual recidivism ($d = .60$) (Kingston et al., 2008). Across all offenders pornography type (pornography containing children and/or violence) was a common risk factor for recidivism, whilst the frequency of pornography use was a particular risk factor for high-risk offenders (Kingston et al., 2008). These findings suggest that the strength of the association between media OB (i.e., pornography use) and recidivism may be mediated by the risk level and characteristics of the offender.

As noted above, it was reported by Endrass et al. (2009) that recidivism, in the form of a sexual contact offence against children, was not a risk factor for offenders who have a history of internet-based offences against children. However, the Endrass and colleagues' findings also suggest that the offender's criminal history may mediate the association between media OB and recidivism. For example, of the two people included in the sample who had a historical sexual contact offence, both were being investigated, charged, or convicted of a further such offence (Endrass et al., 2009). Though, it is important to note that based upon the strict definition of recidivism within this study (i.e., a reconviction in court), none of the offenders who had a history of a hands-on offence were, at the time of reporting, formally convicted of such an offence within the timeframe.

One study included within this review supports the finding that the frequency of media OB events improved the prediction of recidivism (McDougall et al., 2013). This suggests that the association between OB and recidivism becomes stronger when there is a build-up and accumulation of OBs, including via media. These data suggest that media shapes and reinforces the development of offence-related thinking and behaviour. For example, it was reported that a high-risk adult offender was found to be engaging in disallowed media by writing letters to an ex-partner, which predicted an alleged assault on her (McDougall et al., 2013).

The findings reported within this section therefore indicate that the strength of the association between media OB and recidivism may be mediated by the accumulation of media OB, the characteristics and offence history of the offender, and/or the type of media (e.g., pornography involving children and/or violence) which is being engaged.

5. Strengths and limitations

This is the first known systematic review of the literature which examines the association between media use as offence-related behaviours (OBs) of offenders and recidivism. Specifically, this review is unique as it examines this association in the context of people who are more likely to engage in negative behaviour, and with serious harm as an outcome. As demonstrated by this review, there is a distinct lack of research which examines recidivism prospectively. Indeed, a key strength of this review is that there is certainty all participants included in the review were recidivists. This review may also have policy benefits such as the potential positive economic impact of monitoring media OB of offenders by being better able to predict recidivism scenarios and prevent serious harm.

However, this review did have its limitations. Specifically, in the primary studies it was unclear whether there were any significant individual differences amongst participants, and the full context in which their media use took place. For example, offenders within some studies may be more vulnerable to the influence of media. Such information may have provided a better understanding regarding the association between media OBs and recidivism for certain offenders. One study within this review was also reliant upon the self-report of participants which may limit the validity of its results. In this study, media OBs may not have been disclosed by offender participants for fear of recrimination. In addition, as this is the first known review of the literature in the field of media OBs for offenders, studies included were not specifically examining the impact of media OBs on recidivism or negative behaviour which may have limited what can be reported about any association.

6. Conclusion

This review sought to better understand the association between media use as an offence-related behaviour (OB) of offenders in recidivism. By examining the extant literature which focuses upon people who are more likely to engage in negative behaviours, a better insight was gained regarding the association between OBs, expressed through the use of media, and recidivism. It was important to understand this association in order to better inform the risk assessment of offenders and more effectively predict the occurrence of serious violent and/or sexual harm.

Three provisional findings emerged from this review. One was that offenders engage in a range of media, sometimes despite incarceration. Secondly, media use, particularly violent and/or child pornography, is a prevalent way in which offenders' may express OBs. The third and principal finding, discussed below, centred around the concept of whether media OB is a catalyst in, or a cause of, recidivism.

The primary studies included in the review indicated that the frequency of OBs assisted in the prediction of recidivism. In McDougall et al. (2013) for example, each media OB cumulatively promoted recidivism such that recidivism was more likely than after isolated events. Another study reported that the number of media OBs was a risk factor only for high-risk adult male offenders (Kingston et al., 2008). These studies do not provide evidence that media OB is a 'trigger' or causal factor for recidivism as engaging in media OB was not a significant factor in reoffending for all participants. Instead, included studies may provide evidence that in a subset of offenders' media OB frequency is a catalyst for recidivism. For example, in Kingston et al. (2008) media OB appeared to shape recidivism and reinforce the development of offence-related thinking and behaviour as although deviant pornography content (containing children and/or violence) was a stable risk factor across groups, recidivism was expressed in different forms across all recidivists (31.7% of 341 offenders). Specifically, 31.7% engaged in general recidivism (including violent and/or sexual reoffending), 21.4% were involved in a new violent offence, whilst 11.1% engaged in new sexual offence (Kingston et al., 2008). Similarly, in the third study low level media OB developed into crimes which involved serious harm (Endrass et al., 2009). The studies included in this review therefore provide only a correlational insight into the chicken-and-egg problem that media may be a catalyst for recidivism amongst offenders. Specifically, these primary studies provide support for the view that risk level, type of media used, and the offence history of the offender may play an important role in the strength of the relationship between media OB and recidivism. That is, offenders who are more likely to recidivate, may also be more likely to externalise negative behaviours. However, it is important to hold in mind that results of this review are limited by the lack of studies eligible for inclusion.

7. General Discussion

There were several highly relevant studies which support these findings that were close to being included but did not meet the inclusion criteria in full. For example, the relationship between media OB and recidivism was highlighted in a study which indicated that social networking sites (SNSs) were used to facilitate crime (Mitchell et al., 2010). In this study, media OB shaped (rather than 'caused') recidivism as the SNSs allowed offenders to communicate with, and access information about, potential victims. This media use further allowed offenders to share pictures and develop a sexual relationship with victims. It is important to note that offending behaviour varied across arrests within this study which reinforces the concept that OB via media 'shaped' the way in which recidivism occurred. For example, media OB provided access to victims' friends which may or may not have been possible without this specific form of media use, and in some cases resulted in face-to-face meetings with victims. However, although this study (Mitchell et al., 2010) indicated that some participants had a history of offending, and that some participants later reoffended, it was unclear which, or if all, participants recidivated.

Other excluded studies found media OB of offenders in their index offending. For example, media in the form of pornography use was found to increase; the sexual thoughts and feelings of sex offenders to carry out sexual fantasies (Saramago, Cardoso & Leal, 2019), the likelihood of aggressive behaviour for juvenile sex offenders (Alexy, Burgess & Prentky, 2009), and, self-reported sexual arousal for masochism and for males under 12 years old (Burton, Leibowitz & Howard, 2010). In addition, viewing pornography played a role for a proportion of offenders (17.11%) when committing their offence (Langevin & Curnoe, 2004). Media OB was also present for offenders via viewing sexual images of children in order to cope with their negative emotions (Morgan & Lambie, 2019). Moreover, clients who later went on to offend disclosed having had limited negative thoughts about the impact of using media in the form of indecent images of children (Wakeling & Saloo, 2018). These studies provide support for the finding of this review that media OB may shape and act as a catalyst for future negative behaviour of offenders.

However, one study reported that media OB, such as through the use of pornography, was not related to sexual crime for young offenders (Burton, Leibowitz & Howard, 2010). In this study juvenile sexual offenders self-reported significantly more exposure to pornography prior to the age of 10, and use of pornography after age 10, for different types of pornography, compared with non-sexual juvenile offenders. It may be that media OB is not related to sexual crime specifically for juvenile offenders. The association between the media being consumed and offending was also not robust within this study as it was a correlation based upon self-report, where participants could have been masking true OBs which may not have been recorded or captured. Hence, this study

appears consistent with this review's findings that the risk level and offence history of offenders may mediate the strength of the relationship between media OB and recidivism. That is, juvenile offenders within this sample had a limited criminal history, and therefore a reduced risk level, which may have inhibited a strong association between media OB and offending.

There is limited evidence within this review that media OB may directly translate into, or be a key trigger/cause for, recidivism. It is however important to consider that this may be possible. One reason for this limited evidence could be that the studies included were file based studies that do not facilitate an understanding of meanings relating to specific media for participants. For example, it is possible that an offender's self-report may elaborate that they engaged in specific media OB which was a direct and key trigger/causal factor for their recidivism.

The extant research does provide support for the proposal that media OB is part of a pathway for offending. For example, engaging in media in the form of internet communication platforms can reportedly develop into contact offences (Kloess, Larkin, Beech & Hamilton-Giachritsis, 2019). Kloess et al., (2019) found that this occurred by internet use spiralling out of control and due to offenders' desire to fulfil an unmet sexual interest. That is, offenders may express OB via media use such as initiating relationships with young people, and/or viewing pornography, which is reinforced by masturbation and which then escalates into hands-on sexual offences. Another study demonstrated that the OB of 'sexting' is prevalent amongst men who have been arrested for domestic violence and that those abusers who approve of sexting are more likely to engage in sexual violence than those who do not (Florimbio et al., 2019).

In the results of this review the association between media OB and recidivism generally related to sexual recidivism. However, excluded but relevant studies indicated an association across other forms of offending. For example, cyber monitoring by offenders may contribute to domestic violence (Brem et al., 2017). In addition, as reported in section 1 above, social media use was found to be a catalyst for a serious offence involving young offenders (Her Majesty's Inspectorate of Probation, 2017), with 25% of 115 cases' offences examined directly relating to the use of social media. Similarly, young offenders felt that media use in the form of music influenced how they felt on occasions, although, only 4% attributed a connection between listening to music and deviant behaviour (Gardstrom, 1999). Social media also facilitated offending for female prisoners with images of their peers using substances triggering relapse by rekindling thoughts and feelings of substance misuse (Perkins, Rand & Sheaffer, 2018). A study which assessed the impact of playing video games on male and female prisoners found game play did not increase the risk of committing copycat crimes (Surette & Maze, 2015). Yet, this study reported that this form of media may be more likely to influence young offenders and be a catalyst that shapes

offending, rather than be a crime causing factor (Surette & Mazer, 2015). Thus, this literature provides further support for the results of this review that media OB is a catalyst for the evolving behaviour of offenders, and that the type of media, and characteristics of the offender, such as age, may interact with and mediate this association.

There are additional studies which support a link between the media use of offenders and negative intentions, for example, examining offenders' interaction with short films (Arborelius, Fors, Svensson, Sygel & Kristiansson, 2013), and short video clips where violent language was used (Domes, Mense, Vohs & Habermayer, 2013). The former study concluded violent actions were preferred when predicting the behaviour of actors whilst the latter reported that adult male offenders' attention was enhanced when viewing violent-related stimuli. Similarly, it was reported that online propaganda and news media may influence cognitive and violent radicalisation of offenders (Baugut & Neumann, 2019). Another study highlighted that media use in the form of magazines was found to be a significant predictor of binge drinking for young offenders (Thomsen & Rekve, 2006). Despite not indicating post-conviction (i.e., recidivistic) behaviours which are closely related to offending behaviours, OBs, it seems reasonable to infer from these studies that offenders are more likely than the general population to engage in negative behaviour via media use.

The excluded but relevant studies further highlight and endorse this review's findings that risk level and the offence history of the offender may play an important role in the strength of the relationship between media OB and recidivism. Indeed, a study reported that recording the sexual OBs of non-sexual offenders may better predict serious sexual harm when these offenders are released into the community (Heil, Harrison, English & Ahlmeyer, 2009). Specifically, non-sexual offenders who expressed sexual crime and sexual OB in custody were comparable in terms of risk of sexual harm when compared with sexual offenders. Thus, these findings highlight that not only is there consistency in behaviours for offenders across custody and into the community, but that OB may predict the specific type of future serious harm. These findings may also therefore provide further support for the concept that media OB is a catalyst or a pathway for recidivism for offenders, and that OBs may be indicative of the specific form of future offences (whether violent or sexual).

Based upon the limited number of primary studies included in this review it is difficult to confirm conclusively whether media OB is a cause and trigger of recidivism, or whether it may be a catalyst that shapes recidivism where crime would likely have otherwise occurred without the use of media. However, what may be clear is that media OB is important in the context of clients assessed as high-risk of causing harm. That is, different forms of media as OBs of offenders were shown to predict recidivism within studies, and when they did not this may have been due to the risk level of offenders, the media used, and the criminal history or characteristics of the offender.

In other words, we infer that recidivism is more likely, and therefore better predicted, when the OBs expressed through media use are associated with the criminal history and/or index offence of the offender. Hence, the recording and monitoring of media OB may benefit risk management approaches such as scenario planning (Hart, Kropp, Laws, Klaver, Logan & Watt, 2003) where alternative expressions of violence and serious harm are forecasted. Capturing information related to media OB may better inform which scenario is most likely to occur and better guide the wider risk management strategy for each offender. For example, if a violent offender with domestic violence convictions is expressing OB via media use where they are sexting with a victim partner, frequently engaging in conversations with them on the telephone, and being aggressive to them during these conversations, then this may best serve as warning signs of an evolving future offence. Similarly, should a convicted contact sex offender be viewing child pornography, and be found to be engaging in social networking sites, this may strengthen prediction of a recidivism scenario involving a hands-on sexual offence.

8. Integrative Summary

This review has discussed both included studies and studies which are highly relevant that did not meet the full inclusion criteria. Based upon the included studies, there is correlational evidence to suggest that media OB may be a catalyst for recidivism. That is, when offenders engage in media use this media may facilitate recidivism. Risk level, type of media used, and the offence history of the offender may also play an important role in the strength of the relationship between media OB and recidivism. Studies which were highly relevant but not included in the review provide further support that media shapes how recidivism plays out. Specifically, media may increase offence-related thoughts, feelings and behaviours of some offenders, and escalate behaviours which could lead to serious harm. Based upon these findings, media OBs may shape or develop recidivism, and the strength of this association may also be dependent upon the type of media used, the number of media OBs, and/or the criminal profile and characteristics of the offender.

This review therefore supports the concept that recording day-to-day behaviours of offenders may strengthen the risk assessment process and better predict recidivism (Clark, Fisher & McDougall, 1993; Hausam, Lehmann & Dahle, 2018; McDougall et al., 2013; Pearson & McDougall, 2017). The results highlight that media use is consumed in many forms by many different types of offenders across a range of settings. Hence, improving the recording, monitoring, and open discussion regarding the media offenders' access and use may be beneficial, and may strengthen risk assessment and risk management of offenders. Due to the limited studies included within this review the chicken-and-egg problem was not fully resolved. Future research may benefit from further

exploration and focus upon both the specific reasons that offenders use different types of media, and the mechanisms which may subsequently lead to reoffending.

Acknowledgments

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of interest

The authors have no conflicts of interest related to any studies included in this review or to any policies related to media use of offenders.

Author contributions

The research team met monthly to discuss progress. All authors have commented on more than one draft of this paper and have read and approved the final version.

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