RESEARCH

A victim-centred cost–benefit analysis of a stalking prevention programme

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Abstract

Research suggests that stalking inflicts great psychological and financial costs on victims. Yet costs of victimisation are notoriously difficult to estimate and include as intangible costs in cost–benefit analysis. This study reports an innovative cost–benefit analysis that used focus groups with multi-agency teams to collect detailed data on operational resources used to manage stalking cases. This method is illustrated through the presentation of one case study. Best- and worst-case counterfactual scenarios were generated using the risk assessment scores and practitioner expertise. The findings suggest that intervening in high-risk stalking cases was cost-beneficial to the state in all the case studies we analysed (even if it incurs some institutional costs borne by the criminal justice system or health) and was often cost-beneficial to the victims too. We believe that this method might be useful in other fields where a victim- or client-centred approach is fundamental.

Introduction

Assessing the economic costs involved in crime reduction interventions and the costs avoided (benefits) is crucial to inform decisions on how to allocate scarce public resources. However, these calculations are conspicuously absent from the evidence base, especially at the systematic review level of abstraction (Tompson et al., 2020a, b). It is therefore imperative that the scholarly community support evidence-based policy and practice decisions through generating knowledge around the cost-effectiveness of crime reduction interventions.

In an effort to address the gap in the evidence base, this paper reports a cost–benefit analysis for a stalking prevention intervention piloted across three Police areas in England. The Multi-Agency Stalking Intervention Programme (MASIP) (2018–2020) aimed to reduce the risk to, and impact of stalking on, victims through a collaborative operational model. The model drew expertise and intelligence across an interdisciplinary spectrum (e.g., criminal justice, mental health, victim advocacy) to inform the risk assessment and management of stalking cases. A small subset of perpetrators was offered therapeutic interventions which sought to address fixated and obsessive thinking that could contribute to their stalking offending, when clinically indicated.

Each of the three MASIP pilot site areas were at a different stage of operational maturity and scale. Hampshire and Cheshire Police had previously established units that responded to stalking cases, with the MASIP funding augmenting their health staffing capacity and scope. London was an entirely new endeavour. Due to the scale of operation (covering multiple health trusts), the unit initially focused on the correct classification of stalking across the Metropolitan Police Service and the provision of expert advice to relevant agencies over a pan-London area. The aim of each of the sites was to improve the classification of stalking cases, provide appropriate responses to the victims, and provide clinical interventions to offenders willing to engage with the MASIP and appropriate therapy to reduce their risk of reoffending. Full details of the operational set-up and theory of change elicited from each site can be found in Belur et al. (2019).

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The impetus for the MASIP came from research, published by the Suzy Lamplugh Trust, which found that 43.4% of people who have reported stalking to the police did not find the police response helpful.[1] Findings from academic research corroborate this (see Korkodeilou 2014, 2017, Taylor-Dunn et al., 2018). In addition, leading experts in stalking argue that legal sanctions in and of themselves do not address the fixation and obsession of the perpetrator (e.g., see Mullen et al., 2009). Legal sanctions are hence considered an ineffective response to reduce both the short- and long-term harms associated with being a stalking victim. The default status quo is a criminal justice system that metes out sanctions, which do not serve victims' needs, nor address the perpetrator's obsession and prevent re-offending. This study, therefore, presents the results of an alternative response to stalking via the provision of support to victims and therapy to offenders to prevent reoffending.

This status quo or default existing criminal justice response relying heavily on legal sanctions is the benchmark from which we compare the costs and benefits of the MASIP. We also provide two methodological innovations on standard cost–benefit analyses. The first, is that we calculate costs for the physical and psychological harm of stalking to victims. The second is that we take a case study approach, rather than calculating aggregate costs and benefits for the whole programme. The justification for this is explicated below.

This study was part of a larger evaluation project (Tompson et al., 2020a). The research question was 'does the MASIP produce cost-beneficial returns for the state and for victims?' This study proceeds as follows. We first outline principles underlying current approaches to conducting cost–benefit analysis in public policy and identify some limitations. We then review the literature on contemporary attempts to measure costs of stalking victimisation. Next, we justify the innovative methods used in this study and summarise how these were applied. We present a fully worked out example in the results section before considering the implications of the findings for victim-centred cost–benefit analysis more broadly.

Cost–benefit analysis

Cost–benefit analysis (CBA), also known in some fields as benefit–cost analysis, is an analytic process used to determine if the positive impact of a policy or intervention outweighs the implementation costs. It is just one of several methods that have been developed to support economic analysis in many areas of public policy research

(see Manning et al., 2016, for other examples). In crime prevention, CBA is used to evaluate whether the introduction of a new intervention delivers greater benefits (defined variously) than alternatives, such as a different intervention or compared to 'business as usual'. Since resources are always limited, and the use of any resource involves 'opportunity costs' (e.g., using the resource for other purposes), cost-effectiveness is often in the forefront of policymakers' minds. CBA is thus an important technique in a researcher's arsenal to generate evidence on 'what works?'.

The underlying principle in CBA is to calculate all the costs and benefits associated with a given intervention or policy, and to generate a 'ratio' which illustrates how much money might be saved by spending one unit of currency. The benefits are often conceptualised as the costs avoided, if they can be monetised, which refers to the process of expressing something in the form of currency. Costs can be also be defined in wider, non-monetizable terms, for example, an increase in public trust in the police, but these are not included in the remit of this paper.

Costs come in many forms. There are direct costs, which involve a monetary exchange, such as staffing costs and equipment costs and then there are indirect costs such as the organisational costs of employing someone and the long-term maintenance costs for equipment. Tangible costs are straightforward to quantify, while intangible costs are not and are usually seen as the costs incurred by victims (Wickramasekera et al., 2015).

CBA requires a comprehensive estimation of costs, along with the benefits, however applying this in practice is challenging. For example, Manning et al. (2016) note that the key difficulty in applying CBA pertains to quantifying important but nonetheless intangible costs (e.g., lives saved or harm reduction). Exemplifying this, systematic review evidence on the costs of crime reduction interventions has rarely gone beyond the estimation of direct costs (Tompson et al. 2020a, b). The acknowledgement and inclusion of intangible costs such as the suffering of victims (Dolan et al. 2005) is especially rare in primary studies and evidence syntheses on interpersonal crimes, despite advances in the last two decades on measuring this (e.g., see Walby, 2004; Peterson et al., 2018).

The cost of stalking victimisation

Stalking is, in many countries, a widespread problem with serious psychological, social and economic consequences (Owens, 2016). Though stalking is heterogeneous in nature, it is generally recognised in the UK as unwanted, repeated contact, which causes the recipient distress and/or fear (CPS, 2018). While a large proportion

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[1] See https://www.getsafeonline.org/news/more-than-a-third-of-stalking-victims-targeted-online/.

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of stalking cases involve ex-intimate partners (see Tompson et al. 2020a, b), a minority of victims are stalked by complete strangers (Mohandie et al., 2006; StalkInc, 2011). The relationship between the perpetrator and victim has important implications for estimating risk based on the length, intensity, and complexity of the relationship, not only to the victim but for secondary victims (if any involved).

Another important component of assessing risk for stalking is the motivation for the stalking behaviour. For example, the primary structured professional judgement tool used by the MASIP practitioners was the stalking risk profile (McEwan et al., 2018).[2] According to this particular risk assessment tool, the five stalker types are: (1) rejected (ex-intimate), (2) resentful, (3) intimacy seeking, (4) incompetent suitor, and (5) predatory. The stalking risk profile combines situational understanding of the perpetrator's personal circumstances with the nature of the prior relationship with the victim and the role of mental illness to formulate a risk judgement. This can then be used by health professionals (such as those in the MASIP) to inform treatment and risk management. Although physical violence is absent from most stalking cases (McEwan et al., 2017), the fixated and repeated behaviour of stalkers can cause victims considerable fear and distress. Several studies have explored the psycho-social effects of stalking victimisation. For instance, Brewster (1999) reported, based on interviews with 187 female victims, that women became distrustful, fearful, and experienced mental health issues such as anxiety and depression because of stalking. Of those who had been victims of other crimes, 75% of interviewees found stalking more harmful than other victimisation experiences. Korkodeilou (2014) found that stalking often caused deterioration in victims' quality of life, leaving them with feelings of terror and distress that lasted for years after the behaviour had ceased.

The resulting trauma and reduced confidence can also have quality of life and social costs. For example, stalking can prompt victims to become disconnected from their social networks because they are reluctant to involve people they know out of shame or embarrassment (SPARC, 2017). Victims can narrow their circle of friends and family, who may be at risk of being harassed by the stalker and in turn become secondary victims (Logan, 2010). In general, victimisation impairs victims' ability to form relationships (Womens' Aid 2019) and this contributes to their vulnerability (Jerath et al., 2020).

Research has shown that stalkers' behaviour often causes major disruption to victims' routines, forcing them to make significant changes to their lifestyle (Korkodeilou, 2017). These can range from changing phone numbers, avoiding certain places and taking security measures to quitting jobs and even moving to a new house (Baum et al., 2009). Attempts to discourage the stalker tend to be costly and can impose a substantial financial burden on many victims (Jerath et al., 2020; Institute for Women's Policy Research 2018).

Other expenses due to stalking include property damage, medical bills, and legal fees (Brewster, 1999). Analysis of victim surveys found that stalking-related property damage was reported by almost a quarter of respondents (Baum et al., 2009), amounting to an average of $610 in US dollars in repair and maintenance (Logan & Walker, 2010). Financial losses can also be a result of lost wages, either directly from missed work and on-the-job harassment, or indirectly from lost productivity and performance interference (Logan, 2010). Since research consistently shows that the impact of stalking can be calamitous on victims, families and communities (Mullen et al., 2009; Jerath et al., 2020; Korkodeilou 2014, 2017; Taylor-Dunn et al., 2017) we argue that cost–benefit analysis on stalking prevention programmes is deficient if it fails to account for these intangible costs.

Although the impact of stalking on victims' finances is acknowledged by much of the literature, most research on the costs of stalking has focused on the ones incurred by the government and the criminal justice system. For example, the National Institute for Clinical Excellence (Mallender et al., 2013) calculated that every stalking incident costed approximately £1179 to the criminal justice system in 2011. More recently, Oliver et al. (2019) estimated that stalking that occurred within the context of domestic abuse cost society £6560 in lost output and £1210 in (mental) health services. Using a quality-adjusted life years (QALY) approach (see Heeks et al., 2018), the same study advanced work in this area by estimating that stalking victimisation resulted in £21,920 in physical and emotional harm to an average victim.

The recent strides from the UK Home Office to incorporate physical *and* psychological costs to victims into interpersonal violence (Heeks et al., 2018; Oliver et al., 2019) partially address the concerns raised by others about the noticeable absence of this measure of harm. For instance, a report by the Institute for Women's Policy Research (2018) highlighted that no study has provided a complete picture of the full costs of victimisation to stalking victims and emphasised the importance of further research. In their systematic review of the costs of crime, Wickramasekera et al. (2015) found that intangible costs comprised the biggest cost to victims of assault, and

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[2] Other risk assessment tools were sometimes used in a complementary way, according to the presentation of the stalking case.

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this is ostensibly generalisable to violence without injury, which is what stalking is analogous to.

Taken together, research suggests that stalking can have a deleterious effect on victims' finances—either directly from property damage and legal expenses, or indirectly through attempts to discourage the stalker, measures to increase security as well as other costs like output loss and mental health treatment (Jerath et al., 2020). The psychological costs are greater still. However, these costs have not been panoramically captured in any CBA to date. In this study we attempted to itemise the most comprehensive collection of costs to stalking victims thus far, to inform whether the MASIP was cost-beneficial to the state and to victims.

Method

We undertook cost–benefit analysis (CBA) of the MASIP to assess whether the benefits accruing from the outcomes were greater than the costs of implementing it. Conducting a CBA involves comparing the (monetised) impacts of an intervention with the (monetised) costs of the intervention itself. Our research question was: does the MASIP produce cost-beneficial returns for the state and for victims?

CBA is usually calculated at an aggregated rate for an intervention as a whole. In this study, that would have meant estimating costs for an average 'caseload' for the multi-agency practitioners and multiplying this by the number of cases managed by each unit. However, in interviews the MASIP practitioners stressed that their caseload was too disparate for them to be able to say what a typical case would look like. Our own observations of clinic meetings in the three sites corroborated that cases were highly variable and idiosyncratic. Instead, according to stakeholders, each case and the risk management involved was unique (as Storey and Hart 2011 also report). Consequently, they reported that each case received a bespoke multi-agency service and, in a minority of cases, therapeutic treatment tailored to the individual circumstances of the perpetrator was delivered.

The therapeutic interventions were delivered in divergent ways across the three sites due to the profile of the cases and the different health practitioners available at each site. For example, the two Perpetrator Outreach Workers in the health team in Cheshire could deliver shorter-term therapeutic interventions for perpetrators with discernible needs (along with longer-term interventions for more complex needs by the Forensic Psychologist and Consultant Psychiatrist). Hampshire were the only area which had a funded Occupational Therapist to help to develop perpetrator's skills to get them back into work. London had a different mix of senior and junior mental health staff in their team. Because of this,

the costs of intervention for each case varied markedly. In addition, the estate costs across the three police sites, and the salary costs of staff (London employees typically receive a 'London weighting' on top of nationally standardised salaries) were notably different. The difference in infrastructure costs for the three sites illustrates this point. For this we divided all non-salary operating costs by the number of cases referred to each unit in the first year of operation. The infrastructure cost (per referral) was £52.92 in Hampshire, £65.29 in London and £151.13 in Cheshire.[3] This led us to conclude that calculating an 'average' cost of the MASIP programme was inappropriate as the cases, and actions taken by the multi-agency teams, were qualitatively different. It was also beyond the scope of the project to monetise the resource costs of each of the 1275 individual cases.

We therefore decided to adopt a 'deep dive' approach and focus in-depth on two case studies from each site. For each of these cases, we aimed to reconstruct the sequence of events as narrated by stakeholder practitioners to estimate all the costs based on detailed information about the actions taken by the multi-agency team, plus any other agencies that provided services to the victims and perpetrators involved in the case. Cost estimation was not limited to the state purse but to the victim, based on their interaction with the victim advocates involved. Costs were also estimated for counterfactuals in case of no involvement of MASIP, as estimated by practitioners, based on their expertise and intimate knowledge of the details of each case.

We invited each of the pilot sites to identify suitable cases for the CBA and conducted focus groups with all stakeholder agencies involved in the case. These representatives came prepared with casefiles and the actions taken during the case management. Detailed information was obtained on who was involved in each action (e.g., referrals meeting) and how much time was spent (e.g., preparation time, travel time, duration of meeting, follow-up time).

Ideally, the CBA cases would have been randomly selected from amongst the closed cases from each pilot site, stratified by stalker type (e.g., rejected, see above). However, data maintained by the three pilot sites did not contain consistent information about the status of the case, which challenged our preferred approach. Since the practitioners had to provide detailed information relating

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[3] On the surface of it, it might be expected that London would have the highest infrastructure costs, due to higher estate and staff costs. However, a high volume of cases was referred into London after substantial awareness training was delivered to partner agencies, such as Probation, resulting in a lower infrastructure cost per case. In contrast, Cheshire covered only a small area, with lower operating costs, but had a high proportion of cases, many of which were complex and high-risk.

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to each case, we requested that they select cases based on the following criteria:

- The case should be notionally closed—i.e., at least 3 months since the cessation of active MASIP engagement with the victim and perpetrator.[4]
- One of the cases should involve ex-intimate partners (the most common type in each of the three pilot sites). There was no specification of stalker type for the other case.
- The case could be complex (e.g., high-risk or involving multiple risk dimensions) or simple (low- to medium-risk, or with a straightforward resolution).
- The outcome could be satisfactory or not.

Importantly, to fully monetise the costs, it was vital that stakeholders had all the relevant information relating to the involvement of their agency in a case. For instance, police and probation needed to know about related court proceedings and actions that their colleagues that sat outside of the MASIP teams had taken. Information on the extent and contribution of external agencies was also sought.

A total of six focus groups were held between November and December 2019, with two lead researchers and representatives of all the agencies involved to discuss the selected case in detail. Extensive notes were made during the focus groups and any information that was later found to be critical to the CBA was followed up with the relevant practitioner. All efforts were made to keep the cases anonymised during the focus groups which lasted 45–70 min.

As recommended by Manning et al. (2016) we strived to calculate both direct and indirect costs to relevant organisations and also the intangible costs. This means that, uniquely, we have costed for the emotional and physical harm that victims suffer for crimes, including stalking. This is important given the overwhelming evidence that documents the acute suffering of stalking victims (Mullen et al., 2009; Jerath et al., 2020; Korkodeilou 2014, 2017; Taylor-Dunn et al., 2017).

Costs for each item in the following analysis were sourced from various academic publications, government resources, as well as the financial documentation for the project (see Table 4 for examples). These were adjusted for the intervention period using the Bank of England's inflation calculator. For brevity, full details on how the individual itemised costs were estimated is provided in the Additional file 1.

An innovative aspect of our approach is that we calculated not only the benefit–cost ratio for the state, but also for the victim/s. Moreover, we conducted sensitivity analysis by calculating the benefit–cost ratio for these two entities in projected best-case and worst-case counterfactual scenarios over the medium term (six months), focusing on what the most and least favourable outcomes that might possibly occur in each case in the absence of MASIP intervention. A counterfactual is, in essence, what would have happened in the absence of the intervention and is especially difficult to estimate in crime prevention since the outcomes are unobservable (Cummings, 2006). The scenarios used were constructed in accordance with the risk assessment scores and practitioner input based on their experience and knowledge of the case. We acknowledge that these are, at best, experience-informed predictions about how the situation would have progressed in each case if there had been no MASIP intervention. However, they are rooted in expert knowledge and empirical evidence.

Results

To exemplify the approach taken we present one of the case studies here in detail.[5] To comply with ethical requirements the accompanying narrative is anonymised to protect the identity of the victim and perpetrator. All sources for the costs are included in Table 4.

It is worth noting that a benefit–cost ratio of 2 can be interpreted as: for every £1 spent, £2 of savings are made. Ratio values under 1 are therefore not cost-beneficial as the intervention costs outweigh the counterfactual costs.

Background

The victim and perpetrator were in a marriage involving emotional and physical abuse by the perpetrator. The perpetrator had a history of domestic abuse in his first marriage, as well. Following an alleged sexual assault by the perpetrator on the victim, he was asked to leave the marital home. The perpetrator thereafter stalked the victim over a few months, culminating in a serious violent incident. The perpetrator received a substantial determinate prison sentence. There was intelligence to suggest that the perpetrator had tried to contact the victim early into his prison sentence, which had left the victim terrified. Concerns were held by professionals approaching the perpetrator's release from prison about the perceived high risk of violence associated with managing the perpetrator in the community and a MAPPA (multi-agency public protection arrangements) process was initiated.

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[4] Pilot sites were left to define what they thought a closed case should be according to their individual criteria, since this varied across sites.

[5] Interested readers can find the sources of all costs and the other five case studies in Tompson et al., 2020a.

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Table 1 The costs of the case to the State and victim (Table 4 provides the sources of data used for the costs)

What happened (costs)	
Infrastructure costs (per referral)[1]	£ 151.13
Referral[2]	£ 552.14
Initial risk assessment[3]	£ 4435.79
Safeguarding for victim[4]	£ 1892.09
Post-conviction follow-up[5]	£ 151.88
In/direct costs to victim[6]	£ 20,579.74
Total costs to state	£ 7182.54
Total costs to victim	£ 20,579.74
Total costs	£ 27,762.28

Table 2 The costs of the case avoided to the State and victim (best case scenario) (Table 4 provides the sources of data used for the costs)

What could have happened (costs avoided)		Benefit/ cost ratio
Indirect costs to the victim[7]	£ 71,438.41	
Costs to the state for violence with injury[8]	£ 20,179.26	
Total costs to state	£ 20,179.26	2.8
Total costs to victim	£ 71,438.41	3.5

This was the time when the MASIP site was invited to be involved in the case.

MASIP involvement (period of 14 months)

Probation referred the case into the MASIP site, and this team supported the MAPPA process by interviewing the perpetrator in prison several times to produce a comprehensive risk assessment, based on an extensively researched timeline of events. The evidence from this suggested that the perpetrator had not sought out the victim or engaged in any violence whilst on day release, however the risk of re-offending with another victim was moderate. From the interviews with the perpetrator, the MASIP team deemed that there was high risk of violence, but this was not imminent (within the current circumstances). However, they judged that there was a moderate risk of recurrence of stalking behaviour and a moderate risk of psycho-social harm to the perpetrator. The MASIP team worked with the perpetrator's probation officer to develop her thinking about the risk and managing it appropriately while interacting constructively with the perpetrator. Meanwhile, the victim advocate worked extensively with the victim to provide practical support and safety planning. Thus, the MASIP team's contribution to the case was in appropriate risk assessment for probation to follow up, and vital support for the victim to manage feelings of stalking-related fears and risks.

The total costs for what happened with the MASIP team's involvement over 14 months amounted to £7182.54 for the state and the victim incurred costs of £20,579.74 for the same period (Table 1).

Plausible counterfactual scenarios in the absence of MASIP involvement (period of 6 months)

Best-case scenario in terms of outcomes

MAPPA would not have an accurate risk assessment and take a generic view to the risk management and would consider the case very high risk because of the previous severity of violence. Probation would be unlikely to recognise and classify the behaviour as stalking. The perpetrator would become increasingly antagonised by this approach and feel that he was not being heard. He would blame the victim for the impact on his life and would contact the victim again and attack her. The victim and her family would experience severe trauma.

Under this scenario, the costs to the state equated to £20,179.26 and the costs to the victim amounted to £71,438.41 (Table 2). The benefit–cost ratio to the state was 2.8, meaning that for every pound spent, £2.80 could be expected in savings. The benefit–cost ratio for victims was higher at 3.5, which implies that there are greater benefits for victims than the state in preventing this scenario.

Worst-case scenario in terms of outcomes

Initially the perpetrator would not be motivated to contact the victim, however frustrations regarding his prospects of resuming work would destabilise him a couple of months after his release from prison. Whilst unemployed he would start a relationship with a vulnerable woman and the patterns of conflict and abuse that characterised the perpetrator's previous relationships would begin, thus resulting in a secondary victim. The relationship would swiftly break down. He would blame the primary victim for this and start ruminating about their relationship. He would not engage with mental health services, would become increasingly estranged from his family, further increasing his sense of resentment and frustration. This would lead him to take his own life (he had a previous history of suicidal ideation). The primary victim would be distressed throughout this period as would the secondary victim (partner) following the perpetrator's ill treatment of her.

In Table 3 we see that the costs to the two victims amount to £26,318.92. There are additional costs to the state for the violence to the secondary victim. The

Table 3 The costs of the case avoided to the State and victim (worst case scenario) (Table 4 provides the sources of data used for the costs)

What could have happened (costs avoided)		Benefit/cost ratio
Indirect costs for original victim[7]	£ 2682.45	
Harm to secondary victim for violence without injury[10]	£ 23,636.47	
Costs to state for violence without injury[10]	£ 7718.67	
Costs to society for perpetrator's suicide*[11]	£ 2,254,500.00	
Total costs	£ 2,288,537.59	82.4

estimate of the cost of the perpetrator's suicide combines the intangible costs (loss of life to the individual and the pain and suffering of relatives), as well as lost output (both waged and unwaged), police time and funerals. For this reason, it is not possible to disaggregate the costs in this counterfactual scenario to the state and victim. Instead, the overall benefit–cost ratio has been calculated using the total costs in Table 1, and this equates to 82.4. This means that there would be a saving of £82.40 in monetised terms, for every pound spent on this case by the state.

In summary, the intervention in this high-risk case delivered a cost-beneficial return for the state under the best- and worst-case scenario. The benefits are especially acute for victims, since the harm associated with victimisation is curtailed.

Discussion

In this study we present a novel way of conducting cost–benefit analysis, applied to a stalking prevention initiative (MASIP). Stalking cases are acutely heterogeneous, insofar that there are varied motivations behind stalking (e.g., to pursue an unwanted relationship, to punish an ex-partner, to exert revenge for a grievance) and a range of possible relationships between perpetrators and victims (e.g., no relationship, acquaintances, ex-intimate partners). Furthermore, they differ in terms of how long and how intense the behaviour is, and the extent of physical and mental coercion and violence is involved. This heterogeneity precludes the typical cost–benefit analysis approach of identifying an 'average' case that can be costed and aggregated up to a programme level. We therefore took a 'deep dive' case study approach, using focus groups with practitioners involved in the case management to elicit detailed information about actions taken in the case, which were subsequently monetised in the analysis. This unconventional approach was resource intensive, and hence not prudent to apply to all cases, but it was well suited to the distinctive nature of the MASIP. This method might prove fruitful in other research that

estimates costs of crimes that do not present in a homogenous fashion.

In collaboration with the practitioners involved in the case, we constructed best- and worst-case scenarios that were plausible based on the risk assessment profile for the case. In the absence of appropriate control groups, this was a reflective means of generating qualitative counterfactuals as alternatives against which the MASIP's monetised impact could be measured (see Cummings, 2006 for different types of counterfactuals). Using a range of scenarios enabled us to mitigate the risk of being biased in our estimations of what might have happened had MASIP not intervened in the case.

We also included intangible costs—the harm to victims—in the estimations of both the costs and benefits (costs avoided). This enabled us to calculate a benefit–cost ratio to both the state and for victims and is, to the best of our knowledge, the first study to do the latter. With harm reduction increasingly being noted by policing agencies as an important aim and crime harm indexes being developed in several places (see Ashby, 2018) it is likely that future evaluations of crime prevention interventions will need to incorporate some measure of harm. Recent publications by the UK Home Office (Heeks et al., 2018; Oliver et al., 2019) have costed this out for some forms of crime to enable such analysis.

The case study presented illustrated that the intervention was cost-beneficial; the harms avoided and costs to the state averted were stark in contrast to the cost of implementation. This was not always seen in the other five case studies (see Tompson et al. 2020a; b), where victims had incurred extremely high costs before their case entered the MASIP. The case study presented was high-risk, and it should be noted that there were many lower-risk cases which likely have a negligible difference between the costs and benefits. It is highly likely that multi-agency units, with their heightened risk assessment and management capability, identify and prevent high risk and rare but catastrophic events. It therefore does not seem inappropriate, rather seems more effective, to

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Table 4 The sources of costs for Tables 1, 2 and 3, along with summary notes for how costs were estimated

Superscript number	Source of costs	Summary of estimation
1	Project finance documentation	Calculated by dividing all non-salary operating costs by the number of referrals received by the unit in the first year of operation
2	Project finance documentation	Calculated by multiplying the partnership staff hourly rates (based on salary + employer costs) by the (varied) time spent on the referral (includes preparation time for a timeline to clarify misinformation). Also includes:
	https://www.polfed.org/pay/constable-pay-scales/	2 × hours of Police (officer in charge) time
	Project finance documentation	2 × hours for probation officer. Uplifted for employer costs
	Office of National Statistics occupational salary data for welfare professional	2 × hours for Adult Social Care professional
3		Same assumptions and sources as for superscript 2 for partnership staff and probation costs but also includes:
	https://www.healthcareers.nhs.uk/working-health/working-nhs/nhs-pay-and-benefits/agenda-change-pay-rates	1 × hour of Prison Nurse time calculated from midpoint of band 5
	Office of National Statistics occupational salary data for welfare and housing associate professional	6 × hours of Housing Officer time
4		Same assumptions and sources as for superscript 2 for partnership staff costs and superscript 3 for housing officer costs, and also includes:
	Project finance documentation (probation officer salary)	12 × hours of Victim Liaison Officer time
	Office of National Statistics occupational salary data	2.5 h of victim's colleagues' time – details removed to preserve anonymity
5		Same assumptions and sources as for superscript 2 for partnership staff, police (officer in charge) and probation costs
6		In/direct costs to victim include:
	p. 47 of Home Office estimates of Domestic Abuse (Oliver et al., 2019)	14 months of Quality-Adjusted Life Year (duration of MASIP involvement) for moderate anxiety multiplied by the UK Government's estimate of the cost of a life in full health (2016/17, inflation applied)
	https://www.barclays.co.uk/mortgages/guides/real-cost-of-moving/	Average cost of moving in the UK
	https://www.lathamssteeldoors.co.uk/security-front-doors/	Security door
	www.ebay.co.uk	4 × bars on windows
7		In/direct costs to victim include:
	p. 47 of Home Office estimates of Domestic Abuse (Oliver et al., 2019)	18 months of Quality-Adjusted Life Year (duration of MASIP involvement) for moderate anxiety multiplied by the UK Government's estimate of the cost of a life in full health (2016/17, inflation applied)
	https://www.vice.com/en_us/article/mbyvy8/cost-of-domestic-abuse-stalking-money	Cost for changing daily routine travel
8	p. 54 of Home Office estimates of Domestic Abuse (Oliver et al., 2019)	Costs for violence with injury for the state (2016/17, inflation applied)
9	p. 47 of Home Office estimates of Domestic Abuse (Oliver et al., 2019)	20 months of Quality-Adjusted Life Year for moderate anxiety; 17 months for mild anxiety; 3 months of moderate anxiety multiplied by the UK Government's estimate of the cost of a life in full health (2016/17, inflation applied)
10	p. 54 of Home Office estimates of Domestic Abuse (Oliver et al., 2019)	For violence without injury (2016/17, inflation applied)
11	p. 26 of Knapp et al. (2011)	2009, inflation applied

Project finance documentation included employer costs in salary costs. All other salary costs were uplifted for employer costs

use a high-risk outlier case to demonstrate the utility of our method.

The main limitation of this approach is that the cases selected by the practitioners for analysis were not representative of the rest of their caseload. Despite the inclusion criteria that were provided, all three pilot sites selected cases that were high risk and resource

intensive. They also tended to select cases that were unusual or particularly memorable[6], but were not always the most successful ones. The upshot of this is that the CBA presented here is not typical of all cases, which likely have fewer costs for both the state and victim/s. This selection bias is not wholly problematic however, since it provides an understanding of the costs (and benefits) associated with complex and high-risk cases. Even if these types of cases arise rarely, the consequences of one of the worst-case scenarios playing out is unthinkable from a social perspective and excessively demanding from a public sector resource perspective.

This naturally leads onto the second limitation of this approach. The construction of best- and worst-case scenarios was done in consultation with the health practitioners involved in the case and based on careful consideration of the risk assessment profiles for each perpetrator. Crucially however, we cannot say with any certainty whether these scenarios would have played out without intervention from the MASIP sites. Risk assessment tools are dynamic, and risk can escalate and de-escalate for many reasons. The justification for providing two different counterfactual scenarios for the CBA was to protect against bias of assuming that only one outcome was possible.

Two more minor limitations of the approach we took to CBA were that we had to depend on the practitioners' memories, which may have under- or over-estimated the time and resources spent on each case. Our observation was that the former was more common, although this was partially mitigated through prompts, questions, and confirmation through case file records. Secondly, we did not consider the opportunity costs associated with the MASIP, which refers to what outcomes could have been achieved had the resources used by the MASIP been put to other uses.

This is the first study of which we are aware that takes this approach to CBA. There is therefore considerable potential for these findings to be advanced in further research that looks at crime-specific interventions. In addition to mitigating the limitations already noted above, future studies might seek to contextualise costs according to whether decision-making is localised or happening at a regional or national level. A wider range of data sources might be used, as has been done to cost out other high-harm types of crime (for one detailed way of doing this for human trafficking see European Commission, 2020). CBA might also take a longer-term view

of the benefits, since research shows that some forms of victimisation leave a long trauma legacy.

The advantage of taking a case study approach to CBA is that it enabled 'victim journeys' to be visualised using infographics.[7] This proved a popular and stimulating communication vehicle for conversations with practitioners and funding bodies, as it sharply highlighted the extremely high costs involved in stalking victimisation and the risks to society and public agencies of doing nothing in response. The individualised nature of the CBA helped to keep victims centred to the discussions and prompted consideration of how reducing harm could have a positive impact on other public agencies, such as adult safeguarding social services and substance misuse services.

Finally, although cost effectiveness is useful and a worthwhile goal to pursue, the quality-of-life difference that MASIP provided to individuals, whether victims or perpetrators, was often immeasurable and even if one life was saved as a result, the programme can be considered cost effective and worthwhile. The same is potentially true of other victim-centred specialist services.

Conclusion

The conclusion we took from the findings herein is that intervening in high-risk stalking cases was cost-beneficial to the state in all the case studies we analysed (even if it incurs some institutional costs borne by the criminal justice system or health) and was often cost-beneficial to the victims too. Accurately determining which cases were high-risk necessitated the underpinning infrastructure of the units operating within the MASIP. If just one of these worst-case scenarios were to be prevented by the actions of a multi-agency unit to address risk of stalking then the savings to the state, society and victims are substantial. We believe that this method might prove useful in other public sector interventions for complex social problems, such as those seen in education and social care, where a victim- or client-centred approach is fundamental. Furthermore, acknowledging the well-documented overlap between offending and victim populations (see Bottoms & Costello, 2010), might also be fruitful to use in multi-agency initiatives targeting youth violence, for e.g., Violence Reduction Units in the UK, that address complex problems by joining up various initiatives delivered by a number of existing partnerships (e.g. Youth Justice and Community Safety Partnerships) to achieve shared goals.

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[6] For example, choosing a case with a female perpetrator or involving a complex mental health issue, which is uncommon and can inadvertently reinforce inappropriate stereotypes.

[7] See < URL to be provided after peer review process is concluded >.

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Supplementary Information

> **Additional file 1.** Case study cost benefit analysis supplementary material.

Declarations

Competing interests
None.

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