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Identifying and responding to domestic abuse in cancer care: A mixed methods service evaluation of a training and support intervention

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ABSTRACT

Purpose: This article reports on a service evaluation of a domestic abuse intervention for hospital-based cancer professionals in two sites. The core component was a training and monitoring process, which hospital-based domestic abuse coordinators led. This role was adapted from a generic hospital role to be cancer specific. Pre-training preparedness to identify and respond to domestic abuse, domestic abuse identifications, and changes ~6 months post-training are presented.

Methods: We used an explanatory sequential design including a survey pre-training (Time 1), immediately post-training (Time 2) (with follow-up semi-structured interviews) and ~6 months post-training (Time 3). Sites were asked to share domestic abuse identification numbers pre- and post-coordinator hire.

Results: Coordinators trained 1080 staff (17% of staff across two sites). Survey 1 (Time 1 & 2) response rate was 44.9% (n = 485) and survey 2 8.8% (n = 95) (Time 3). All confidence scores significantly increased from pre- (Time 1) to post-training (Time 2). Time 3 also saw significant gains. There were also highly significant decreases in the perception of most barriers to asking about and responding to domestic abuse post-training. We were unable to determine Site 2's identification rate but Site 1's increased. Qualitative findings shed light on key moderators between intervention components and outcomes, and additional components needed to change practice.

Conclusion: Our evaluation contributes further evidence of the benefit of hospital-based domestic abuse coordinator roles; contributes new evidence for the feasibility of adapting the role for a specific context; and illustrates the need for a domestic abuse response in the cancer setting.

1. Introduction

Domestic abuse (DA) includes violent, threatening, controlling, coercive, and/or physically, sexually, economically, psychologically, or emotionally abusive behaviour, where victim-survivors (i.e., those who have experienced abuse) and abusers are each aged 16+ and are (ex) partners or family members, including in-laws and stepfamily (UK Government, 2021). Over 20% of people in England and Wales have lifetime DA experience (ONS, 2023). DA has many long-lasting mental and physical health sequelae (Campbell, 2002). Victim-survivors are more likely to disclose DA to healthcare professionals (HCPs) than other professionals (Domestic Abuse Commissioner, 2022), as the healthcare setting is seen as safe, confidential, and trustworthy (Heron and Eisma, 2021). The need for a healthcare response to DA is thus well-established (World Health Organization, 2017). In England, healthcare-based interventions, mostly in primary care and emergency medicine, largely comprising training and co-locating a DA worker, have significantly increased HCPs' DA awareness, and rates of enquiry, identification, and referrals to DA specialist services (Feder et al., 2011; Halliwell et al., 2019; Pell et al., 2024). Although UK antenatal services implement routine enquiry (Baird et al., 2013) i.e., screening all patients for DA, other settings implement selective enquiry (i.e., asking if there are DA indicators), because insufficient evidence exists for screening benefits (O'Doherty et al., 2015).Victim-survivors face a range of barriers to

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formal help-seeking including barriers related to age, language, mental health, ethnicity, disability, substance use and immigration status (Robinson et al., 2021).

Few studies have explored the co-occurrence of cancer and DA: the studies that have done so focus on intimate partner violence (IPV) directed towards the person with cancer. These studies show that experiencing IPV is linked to a higher likelihood of receiving a cancer diagnosis (Reingle Gonzalez et al., 2018), with some evidence that it is linked to a later cancer stage at diagnosis (Mejri et al., 2023; Modesitt et al., 2006). IPV is related to lower quality of life, higher depression and stress post-diagnosis, and lower levels of physical, social, family, emotional, and work functioning, with poorer outcomes if IPV is current rather than past (Coker et al., 2017; Jetelina et al., 2020). Abusers, who are sometimes the patient's main source of care, use the diagnosis to further their abuse, for example, downplaying the diagnosis, physically assaulting treatment sites, humiliating patients about treatment-related appearance effects, and sabotaging treatment and recovery (Davidson et al., 2024; Mejri et al., 2023; Sawin et al., 2009; Sawin and Parker, 2011; Speakman et al., 2015). Abusers moreover neglect to provide basic support and isolate patients, making HCPs' support more vital (Sawin et al., 2009; Sawin and Parker, 2011; Speakman et al., 2015). No published research has explored people with cancer who perpetrate DA but illness is theorised to be a trigger for pre-existing DA to worsen: illness can create a loss of control which perpetrators seek to regain (Monckton Smith, 2020). Carers may thus be affected by DA too, feel a sense of responsibility to abusers making them less likely to end the relationship and more likely to return after ending it (Solace Women's Aid, 2021), and may have fewer opportunities to disclose to HCPs and seek help. Previous research highlights barriers to primary care HCPs' response to abuser-patients in general, including a lack of training and knowledge, safety fears, poor relationships, and uncertain duty of care to suspected victim-survivors who are not their patients (Penti et al., 2017; Williamson et al., 2015).

To our knowledge, no UK peer-reviewed primary research explores cancer and DA, however, our England and Wales consultation report (Dheensa, 2021) echoes international findings. It also reports that cancer HCPs considered it their responsibility to ask and respond to patients and their partners/family members about DA if they suspected it but lacked the confidence and knowledge to do so. Additionally, it reports that victim-survivors rarely disclosed DA to cancer HCPs because they were not asked questions that could elicit a disclosure. Still, they felt cancer HCPs were well placed to identify DA and signpost or refer them for support. Jetelina et al. (2020) call for increased awareness and enquiry among cancer HCPs. Two interventions based in the US (where DA screening is generally implemented) highlight that IPV enquiry in cancer care is feasible but hindered by a lack of training, time, and private space (Narayan et al., 2019; Owen-Smith et al., 2008). One UK study found that respondents with a breast cancer history felt that cancer HCPs should give patients opportunities to disclose childhood abuse (Clark et al., 2014), which affects experiences of cancer care (Clark et al., 2011).

UK National Health Service (NHS) policy is driving towards personalised cancer care (NHS, 2019): tools such as Macmillan Cancer Support's 'holistic needs assessment concerns checklist' inform patients' personalised care planning. Parallel UK government guidance for NHS hospital trusts (which provide secondary healthcare services in geographical areas) recommends that staff receive DA training and that trusts establish DA coordinator roles (UK Home Office, 2022). DA coordinators are generally employed by a DA organisation and are 'co-located' in the hospital. While not patient-facing, they train staff and improve DA policies, procedures, and referral routes to specialist services. Evidence from one trust shows that implementing a coordinator increased the referral rate for victim-survivors at high risk of harm and was potentially cost-saving (Melendez-Torres et al., 2024; Pell et al., 2024).

Following the findings of our consultation report (Dheensa, 2021), which highlighted a learning need among staff and support need among victim-survivors affected by cancer, Macmillan Cancer Support funded a new partnership. Two DA coordinators were employed by a DA organisation and co-located in two NHS trusts in England to deliver an intervention, primarily training staff. One coordinator was in a tertiary cancer hospital (Site 1) for 12 months (Jul 2022–Jun 2023, training began in Sept 2022) and the other was in a larger trust's oncology centre (Site 2) for 18 months (Jul 2022–Dec 2023, training began Nov 2022). Around 6000 specialist cancer staff members work across the two sites (4500 site 1, 1500 site 2). In this article, we present a service evaluation of this intervention (i.e., the coordinators' training and monitoring thereof (and, in Site 2, support). The specific objectives of the evaluation were

1. to explore pre-intervention preparedness to identify and respond to DA among cancer HCPs in the two sites
2. post-training increases in confidence and awareness regarding identifying and responding to DA
3. post-training increases in other aspects of preparedness to identify and respond to DA
4. post-training increases in the number of DA identifications in the site
5. key moderators between intervention components and outcomes
6. additional intervention components needed.

1.1. Theoretical framework and theory of change

We adopted Colombini et al. (2022) health system readiness as the theoretical framework to frame our theory of change (Fig. 1 and analysis. The readiness framework comprises 'readiness indicators', which are necessary preconditions for health systems to successfully integrate DA interventions. There are readiness indicators for patient/client, community, and HCP preparedness (individual HCPs and HCPs as a collective); and organisational, structural, and political capabilities. In our theory of change, the intervention components aimed to enhance individual HCP preparedness: specifically increased knowledge, confidence, motivation, and openness to addressing DA, and increased perception and use of support from others, e.g., mentoring, supervision, and team networks. We expected that the intervention would in turn lead to increased organisational capabilities.

1.2. Intervention components

The core cancer and DA intervention component was a training package and monitoring process. The training was about cancer and DA, and was group-based, either face-to-face or via Microsoft Teams: Table 1 contains the training context and details. Other components were coordinators raising awareness of and distributing existing DA resources, e.g., DA intranet pages, policies and protocols (with the coordinator participating in updating the DA policy in Site 1); and a Domestic Abuse Link (DAL) network that could support and advise other staff members and cascade knowledge. Site 2 had an additional intervention component: the coordinator supported and debriefed with staff who were managing a (suspected) DA case. The intervention was administered as intended.

2. Methods

2.1. Design

This service evaluation used mixed methods: an explanatory sequential design. The rationale was that the survey asked about readiness in brief to keep the response burden low, and follow-up interviews allowed exploration in detail. We present integrated quantitative and qualitative findings.

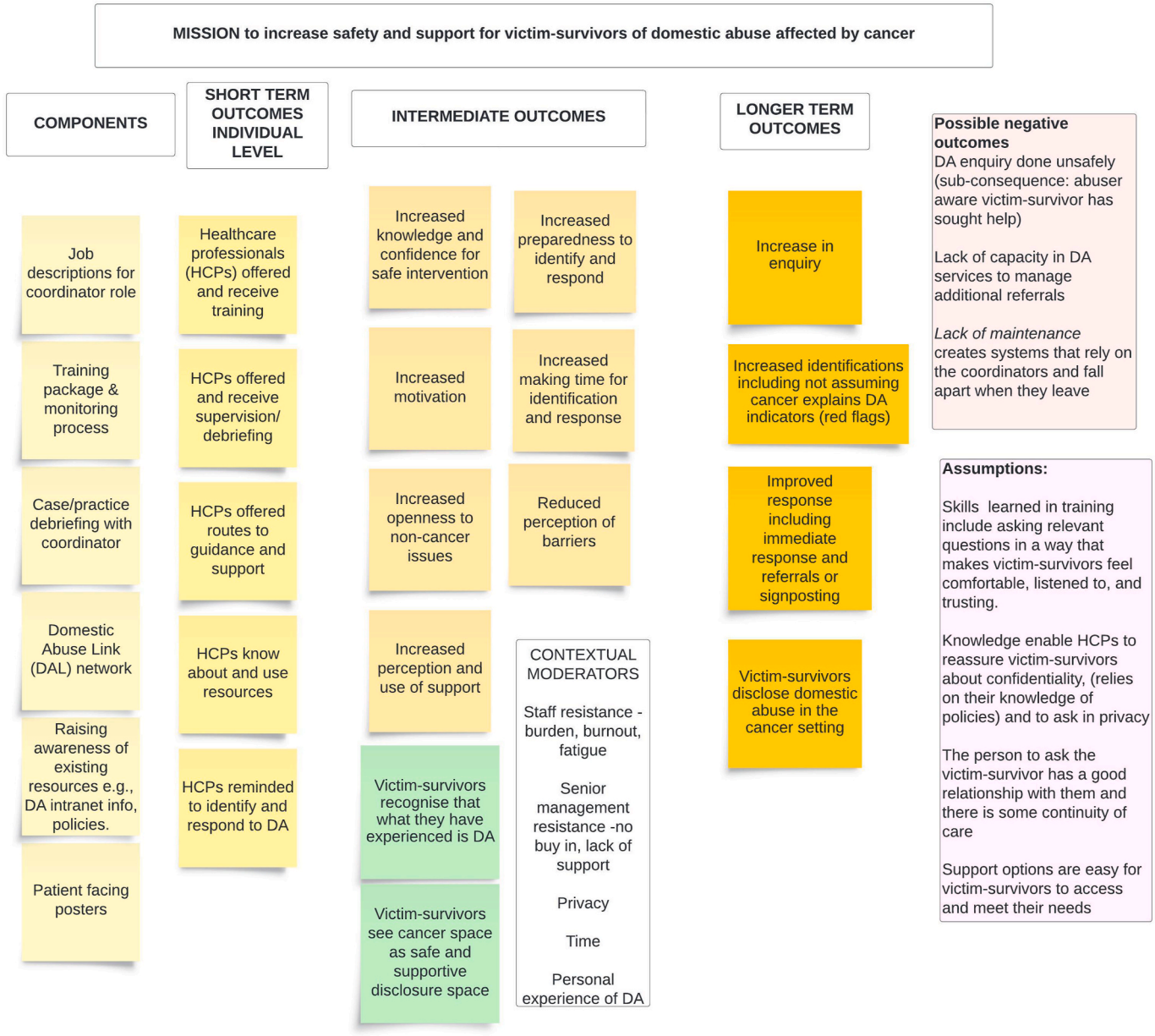

Fig. 1. Theory of change.

2.2. Data collection and recruitment

Service evaluations are exempt from NHS ethics review. However, both Trusts' research and development teams reviewed and approved the service evaluation plan which included participant information sheets, consent forms, a data management plan, and standard operating procedures for safeguarding and distress management. All procedures were performed in compliance with relevant laws and institutional guidelines (e.g., GDPR, confidentiality) in England.

Quantitative data comprised training attendance records; survey 1, administered within a week post-training, which asked about pre- (Time 1 [T1]) and post-training (Time 2 [T2]) views; survey 2, administered 4–9 months post-training ($\bar{x}$ 6 months, Time 3[T3]), which asked similar questions and could be linked to survey 1 with an ID code; and service-level data on DA identification rates.

The lead author developed survey items and an interview schedule based on cancer and DA consultation findings (Dheensa, 2021), other relevant research including broader healthcare responses to DA (e.g., Hudspeth et al., 2022), and the project theory of change. The project team provided feedback on the survey and interview schedule drafts, but the short timeframe precluded formal pre-testing and piloting. Surveys asked about confidence in seven aspects of identifying and responding to DA, mapping onto the 'AVAA' (ask, validate, assess risk, and take action) model promoted by national DA guidance for UK health organisations (Pathfinder Consortium, 2020). Level 1 trainees (see Table 1) were asked about two aspects, as training did not cover other aspects. Survey items about numbers of DA cases encountered and actions taken, and confidence in and perceived barriers to DA identification and response, were adapted for brevity and relevance from the validated Physician Readiness to Manage Intimate Partner Violence Survey (PREMIS). We chose not to use the full PREMIS due to its burdensome length and primary care focus (Ramsay et al., 2012). Interview schedules covered the following broad topics, which were explored flexibly according to the participant and their context: knowledge and experience with DA, experiences of training, knowledge of what to do in DA cases, different approaches when the victim-survivor is the patient versus caregiver of an abusive patient, comparisons with other areas of medicine and healthcare, and outstanding training and support needs.

Table 1
Cancer and domestic abuse training details.

Site domestic abuse (DA) context	Both Trusts had a patient DA policy, DA posters, and a DA steering group led by safeguarding leads. Site 2 had a patient-facing 'independent domestic and sexual violence advocate' (IDSVA) in post who could receive referrals from the emergency department. Trusts' generic (non-cancer specific) safeguarding training covered DA but not in detail. Both Trusts were specialist centres for cancer treatments with patients across a range of ages and geographical areas.
Coordinator-delivered training levels	1. Basic DA Awareness: DA definition, DA as a health issue and links with cancer, an overview of the Trust's DA response pathway. 2. DA Awareness: DA definition and dynamics, DA as a health issue and links with cancer, identifying DA, DA enquiry, validation following disclosure, assessment for immediate and ongoing risk, action including referral to specialist services. 3. Domestic Abuse Link (DAL) training: enhanced training following which the trainee is named a 'DAL', i.e., a person with enhanced knowledge and skills who can support colleagues with responses to DA. Opportunities to practise enquiry and risk assessment. Activities focused on safety planning and managing immediate risk.
Adapting training for cancer setting	Training materials were adapted from the partner DA service's generic DA training for healthcare professionals, but incorporated case studies and quotations from our cancer DA consultation. A Level 2 training example: *Claire (aged 42) has breast cancer; she is having chemotherapy treatment at [Trust]. Claire is a human resources advisor at her local NHS [National Health Service] Trust and is studying management. She has been in a relationship with her partner for 10 years. They cohabitate and have three children aged two, four, and eight. The abuse is escalating. Claire is scared that her partner will hurt her and the children. After Claire collects her children from school this afternoon, she will leave her partner.* Evaluation feedback informed training revisions, e.g., coordinators re-aged 'Claire' to 51 (and re-aged her children) as cancer is more prevalent in this age group and renamed her with ethnic neutrality to reflect both sites' ethnic diversity. Coordinators added content on older victim-survivors in January 2023 in response to feedback.
Raising awareness of training	Training commenced in Site 1 in September 2022 and site 2 in November 2022. Raising awareness was time intensive. Coordinator 1 at times had hot-desk space with non-safeguarding/support staff due to space restrictions. Coordinator 2's desk was in an open plan shared office alongside cancer clinical nurse specialists and cancer support workers, which helped raise awareness of training among these key staff members. Senior staff introduced coordinators to other key staff members, recommended groups they should train (e.g., therapeutic radiographers as they have time alone with patients, receptionists as they meet people regularly and see waiting room interactions and behaviours), used email and team meetings to cascade information, and encouraged staff to invite coordinators to team meetings to introduce the project. In Site 1, the coordinator attended high-level meetings, an existing DA steering group offered an opportunity to meet key staff members, the learning and development team uploaded DA training onto the online learning hub enabling staff to book sessions, and DA trainees included executive leads and members of the executive management team who mandated the DA training for other staff.
Content warning	At the start of training, coordinators acknowledged that attendees may have personal DA experience and encouraged them to step away from the training if needed.
Bespoke sessions	The training was adapted to meet particular staff groups' needs e.g., telephone befriender volunteers who do not have access to patient records. Learning about roles and tailoring training relied on coordinators building relationships with senior staff members who were able to facilitate access to teams.

Our surveys were launched on REDCap, a secure web platform. The first page was participant information, highlighting voluntariness and confidentiality, with a consent statement requiring a checkmark before progressing to the survey. Surveys invited respondents to express an interest in follow-up interviews. All trainees were eligible.

Coordinators incorporated a hyperlink to the survey in the last training slide and allocated time for in-session completion. Coordinators also shared attendee email addresses with SD with their consent: SD emailed attendees to prompt survey 1 completion a week post-training and survey 2 completion ~six months later. Thus total enumeration sampling of all those trained was attempted.

For semi-structured interviews, the project's short timeframe meant convenience sampling was adopted and those who had seen an affected patient or caregiver were prioritised. SD sent potential interviewees a participant information sheet and consent form to complete and return pre-interview. Interviews were via Microsoft Teams or in person with SD. Individual interviews explored participants' survey data and issues not covered in the survey (Creswell and Creswell, 2018). New questions added to the interview schedule explored themes from the concurrent qualitative analysis. SD conducted all interviews, taking a non-judgmental approach and refraining from using the interview as a training session (e.g. if their suggestions were not best practice). Interviews were recorded and either transcribed via a professional service or using Microsoft Teams' in-built transcription service if accurate enough. Survey data collection ceased after two reminder emails to the last trainee batch. A combination of 'theoretical sufficiency' (Dey, 1999) (we achieved a sufficient depth of understanding) and practicalities (the funded period was ending) were the criteria by which we decided to stop interviews. Other qualitative data comprised project team (senior site staff, coordinators, and lived experience representative) meeting minutes, coordinators' monitoring and case notes, and evaluator fieldnotes.

Site 1's internal safeguarding team was asked to share DA identification numbers pre- and post-coordinator hire: staff did not routinely report all DA cases to safeguarding teams thus this number was an approximation of actual numbers. Site 2's safeguarding team did not routinely document referral sources, precluding equivalent data collection; instead we recorded the number of cases where the DA coordinator provided support to staff. The local DA service moreover began documenting data on the numbers of clients affected by cancer, which we collected.

2.3. Data analysis

Quantitative survey data were analysed descriptively, using multinomial logistic regressions for confidence outcomes, and using logistic regressions for changes in perceived barriers. We explored significant mean differences in scores at all three time points for confidence and perceived barriers (unit of analysis was individuals). Both regression sets controlled for age, sex and/or gender, role, Trust, and training level. For multinomial logistic regressions, we constructed a data subset excluding Level 1 training for outcome variables that were asked only in Level 2 and 3 training. Levels 2 and 3 only regressions were conducted upon this data subset. Given the large loss to follow-up in T3, we also replicated our analysis using T1 (pre-training) and T2 (post-training) only as a form of sensitivity analysis (see Supplementary Table 1). We reported multinomial regression results using relative risk ratios (RRRs) and logistic regression results using marginal effects.

Interview data were analysed using a Framework Analysis approach (Gale et al., 2013), combining inductive and deductive analysis. It involved reading and re-reading transcripts and other qualitative data (including free-text survey data) to enhance familiarity, and charting the data according to a framework. The framework consisted of the outcomes from our theory of change (deductive) and other over-arching and cross-cutting categories (inductive), interpreting the data to answer our objectives. SD conducted the qualitative analysis. There were no discernible inconsistencies or divergences between quantitative and qualitative data. Regarding trustworthiness of qualitative findings (Onwuegbuzie and Leech, 2007), prolonged engagement with the analysis and ongoing discussion with the project team about

interpretation of data enhanced credibility and confirmability, and description of context and process allows for the assessment of transferability and dependability.

3. Results

We first present training uptake data, then evaluation findings, including how the intervention components led to short-term, intermediate, and longer-term outcomes, and intervention and contextual moderators that affected the intervention effects.

3.1. Training uptake and engagement

Coordinators trained 1080 staff: 17.1% of staff from the main two sites overall (1026/6000), 16.8% of staff from Site 1 (758/4500), and 17.9% from Site 2 (268/1500). Coordinator 2 additionally trained staff members from three different nearby Trusts (which often shared patients with Site 2), members of a journal club covering Site 2's region (specific sites unknown), and one community healthcare organisation that worked closely with Site 2. Table 2 presents frequencies and percentages by training type and site. Three-quarters of trainees received Level 1 (1-hour) training. Comparably more nurses than other HCPs (especially doctors and surgeons) were trained.

Intervention moderators, i.e., factors that affected intervention implementation, included staff being permitted or willing to attend Level 1 training only. Urgent patient care pulled some attendees away just before or during the session and at Site 1 mandatory training on a new digital records system made room booking and staff release for non-mandatory training difficult. Level 3 attendees reported that manager support and being able to book study leave and plan shifts or workloads facilitated their attendance. Overall, most trainees attended voluntarily; a few were mandated by line managers or senior staff.

Coordinators reflected that staff were engaged and interacted in all training levels, and used longer training sessions to reflect on past DA cases. Coordinators also reflected that Level 1 and sometimes 2 felt rushed and precluded discussion of such cases, and that training on Microsoft Teams was flexible, but in-person was more interactive and insightful.

3.2. Survey respondent demographics

Table 3 presents the individual-level characteristics of the T1&2 survey respondents. There was a 44.9% response rate for survey 1 (T1&2) (n = 485) and just 8.8% (n = 95) for survey 2 (T3) with attrition throughout the survey—we report denominators to indicate total sample sizes for each result. Most respondents were female and just over 40% were nurses, a few with strategic or management roles. Among the non-HCPs were administrators and receptionists. Of allied health professionals, n = 38 were radiographers. Respondents were generally representative of roles trained. Low numbers of men responded. Thirteen professionals completed follow-up interviews: all female (six nurses, one managerial nurse, two support workers, and one volunteer coordinator, social worker, radiographer, and GP trainee).

3.3. Objective 1: to explore pre-intervention preparedness to identify and respond to DA

A third of respondents encountered DA cases in the 12 months pre-training (see Table 4). On average, respondents had each encountered one survivor-patient (i.e. person with cancer who experienced DA) and one abuser-patient. Free-text survey responses indicated that around a third identified DA having noticed indicators and behaviours and two-thirds after a victim-survivors' direct disclosure. Respondents reported that victim-survivors had marginalised identities or characteristics relevant to equality and diversity, particularly older age, and language barrier (actual numbers will be higher as the question was added part way through data collection). Respondents identified most cases in outpatient consultations, phone appointments, and hospital wards. Chemotherapy units and support groups were less common, potentially due to being non-private spaces. Respondents largely took appropriate action, although those who had encountered abuser-patients found it challenging to know what to do and tended to seek advice from colleagues or safeguarding teams. Results indicated that respondents at baseline were motivated to identify and respond to DA and had DA

Table 2
Descriptive statistics, training, and sites.

	Frequency	Percentage of all staff trained (i.e., of n = 1080)
Site		
Site 1	758	70.2%
Site 2	268	24.8%
Other National Health Service (NHS) Trust near Site 1	20	1.9%
Non-NHS Site 1 collaborator	5	0.5%
Unknown	29	2.7%
Training level		
Level 1	808	74.8%
Level 2	152	14.1%
Level 3	122	11.3%
Role		
Nurse	448	41.5%
Other: non-healthcare professional	193	17.9%
Allied health professional	156	14.4%
Doctor	64	5.9%
Support worker	48	4.4%
Healthcare assistant	38	3.5%
Other healthcare professional	35	3.2%
Volunteer	26	2.4%
Surgeon	2	0.2%
Blank	70	6.5%

Table 3
Descriptive statistics – individual-level characteristics.

	Survey 1 (Time 1 & 2) n = 485		Survey 2 (Time 3) n = 95	
Sex and/or gender[a]	Frequency	Percentage	Frequency	Percentage
Male	32	9.0	7	8
Female	323	90.7	79	89.8
Prefer not to say	1	0.3	2	2.3
Total	***356***	***100***	***88***	***100***
Age				
≤25	23	6.5	4	4.5
26–35	103	28.9	24	27.3
36–45	73	20.2	15	17
46–55	90	25.3	25	28.4
56–65	55	15.4	17	19.3
66+	10	2.8	1	1.1
Prefer not to say	2	0.6	2	2.3
Total	***356***	***100***	***88***	***100***
Role				
Nurse	184	41	43	45.3
Allied health professional	91	20.3	20	21.1
Other: non-healthcare professional	58	12.9	15	15.8
Support worker	35	7.8	5	5.3
Doctor	28	6.2	4	4.2
Other: healthcare professional	22	4.9	4	4.2
Volunteer	20	4.6	1	1.1
Healthcare assistant	10	2.2	3	3.2
Surgeon	1	0.2	0	0
Total	***449***	***100***	***95***	***100***

[a] No one chose other gender options. Questions were at the survey's end, hence high attrition.

awareness.

3.4. Objective 2: are there post-training increases in confidence and awareness regarding identifying and responding to DA?

Table 5 presents (unadjusted) means and standard deviations (SDs) for each time point (T1 = pre-training, T2 = post-training, T3 = 6 month follow-up), and (unadjusted) means and SD differences pre-post-training at T2 (T2-T1) and pre-post-training at T3 (T3-T1) for seven aspects of confidence in identifying and responding to DA. Level 1 trainees were asked about 'understand' and 'refer' outcomes only, as their training covered only these aspects. The scores were as follows: 1 = very confident, 2 = quite confident, 3 = not very confident, 4 = not confident at all, thus 1 was the ideal score for training to achieve. Negative mean differences in all outcomes and both T2-T1 and T3-T1 suggest respondents' confidence increased in all seven outcomes.

3.4.1. Regression results

Table 6 presents the multinomial logistic regression results for all seven confidence outcomes. The score 1 (for 'very confident') was our comparison base. We were particularly interested in significant differences in the time variable. Since comparisons used T1 (pre-training) as the denominator in the relative risk ratios (RRRs), increases in confidence would mean RRR <1. The table shows significant meaningful differences in scores for all outcome variables when comparing pre- (T1) and post-training (T2) scores. RRRs became even smaller as scores increased, suggesting that respondents became progressively less likely to feel 'not very confident'/'not confident at all'. Comparison with 6 month follow-up (T3) also saw a significant reduction in the likelihood of higher scores, although a pattern was less clear likely due to the smaller number of completed T3 surveys. Additionally, Level 3 training was significantly associated with a reduction in RRRs, particularly for score 2, suggesting that longer training type improved respondents' confidence. There was no significant difference by site in most outcomes.

In a separate question about whether DA awareness increased post-training at T3, 92% (n = 81) said yes. Of the 8% (n = 7) who said no, n = 3 said that the training was not specific enough to their caseload: two said training neglected male victim-survivors and one explained that it was thus irrelevant to her role in prostate cancer.

Table 4
Time 1 domestic abuse cases.

Have you encountered domestic abuse (DA) cases, including patients experiencing or using DA and where no disclosure was made but you strongly suspected DA, in the past 12 months? Total n = 413	
No	265, 64.2%
Yes	92, 22.3%
I think so	56, 13.6%
Did they have any of the following equality and diversity characteristics (which can be barriers to seeking help or getting to safety)? N = 37 answered with at least one	
Older age	21, 56.8%
English not being their first language	12, 32.4%
Mental health diagnosis	11, 29.7%
Minoritized ethnicity	7, 18.9%
Disability (aside from cancer itself)	5, 13.5%
Substance or alcohol use disorder	4, 10.8%
Abuse from a partner of the same sex or gender	2, 5.4%
Insecure or unclear immigration status	2, 5.4%
Sex working	1, 2.7%
Pregnancy	0
Gender minority	0
What actions did you take for them? N = 108 answered with at least one	
Offered validation (e.g., 'I believe you') and immediate support	70, 64.8%
Documented the disclosure in their care record	53, 49.1%
Provided phone numbers/leaflets/other resources about support services	49, 45.4%
Assessed risk to them and/or their children	48, 44.4%
Did something else (free text): mostly reported or referred the person to safeguarding, senior team member, or cancer psychologist, or no action in line with victim-survivor wishes or because action had already been taken.	43, 39.8%
Referred them to an external domestic abuse service	19, 17.6%
Referred them to a multi-agency risk assessment conference (MARAC)[a]	4, 3.7%
Contacted the police	1, 0.9%

[a] At MARACs, representatives from sectors such as police, health, child protection, and DA advocacy share information about victim-survivors at high risk to co-ordinate an action plan to improve safety - Safelives 2014 safelives.org.uk/sites/default/files/resources/MARAC%20FAQs%20General%20FINAL.pdf.

3.5. Objective 3: are there post-training increases in other aspects of preparedness (aside from confidence) to identify and respond to DA?

3.5.1. Perceived barriers to identifying and responding to DA pre- and post-training

Our theory of change purported that the intervention would reduce the perception of common barriers to identifying and responding to DA (listed in Fig. 2)). The exceptions were privacy (both sites had limited access to private space away from other patients and staff and insufficient strategies to separate patients from others—a particular issue in all cancer settings, since patients are encouraged to bring companions) and time, which was less amenable to change by the intervention.

Changes in perceptions of these barriers pre and post-training are shown in Tables 7 and 8. Table 7 shows that mean differences vary by the barrier and were negative (i.e., reduction in seeing the statement as a barrier) for insufficient training (largest difference), worry about intervening safely (second largest difference), and no access to resources (third largest difference). Reductions were negative but small (i.e., little change in its perception as a barrier) for DA not a priority, own experience, and no privacy. Reductions were negative but very small for insufficient support and no time. A few interviewees discussed their own experience, including a Level-3 trained nurse who said the coordinators' training made her realise that what she had experienced was DA. She debriefed, sought colleagues' support, and reflected it made her "*more likely*" to respond to patients "*… knowing how it can feel*" (Interviewee 12). Regarding privacy, a Level 1-trained GP explained, "*Often family members won't leave a patient's side … because it's a big situation: they're trying to be supportive*" (Interviewee 5). Respondents were unsure how to separate potential victims from potential abusers even on phone consultations: "*You don't know when you ring if they're [alone], and 'Are you on your own?' is a pointed question: I wouldn't feel comfortable saying that*" (Interviewee 13, Level 1-trained nurse).

Table 8 shows a highly significant decrease in the barriers of insufficient training, worry about intervening safely, inadequate resources, and not a priority, as well as a significant decrease in the barrier of insufficient support, which translated into an improvement when comparing pre-post training. The significance is reduced or disappears when comparing T3 to T1, which implies that the effect of training on barriers is more important immediately after it takes place and becomes smaller or less relevant over time. No time, no privacy, and own experience were non-significant.

3.5.2. Intended or actual practice changes following training

At T2 most respondents (312/331, 94.3%) said they intended to make changes to practice: the 4.8% (16/331) and 0.9% (3/331) who said 'quite' or 'very unlikely to make changes' were generally in roles with limited patient contact or already had high confidence. One senior staff nurse reported that time would prevent changes. Two respondents said training was not specific enough to their caseload e.g., because it lacked information on male victim-survivors as reported earlier. At T3, a slight majority (52.8%, 47/89) said they had made practice changes and the remainder said they had not.

The changes the respondents made or intended to make included improved DA identification: "*I'm more vigilant … aware of subtle signs*" [Interviewee 4, nurse, Level 1-trained] such as not assuming or

Table 5
Mean differences and standard deviations (SDs) by outcome.

Time (T) (T)	Understand domestic abuse (DA) dynamics	Recognise DA signs	Know what to ask to find out if someone is experiencing DA	Know what (not) to say if someone tells you they are affected	Assess immediate and ongoing risk	Refer to a support service	Safe and appropriate documentation in patient's record
Pre (T1)	n = 378	n = 155	n = 155	n = 155	n = 155	n = 379	n = 154
Mean	**2.294**	**2.271**	**2.677**	**2.658**	**2.761**	**2.578**	**2.481**
SD	0.725	0.638	0.738	0.777	0.739	0.820	0.818
Post (T2)	n = 354	n = 146	n = 146	n = 146	n = 135	n = 354	n = 134
Mean	**1.588**	**1.548**	**1.671**	**1.705**	**1.941**	**1.678**	**1.701**
SD	0.526	0.526	0.577	0.565	0.655	0.567	0.638
Post (T3)	n = 89	n = 44	n = 44	n = 44	n = 43	n = 84	n = 43
Mean	**1.753**	**1.750**	**1.977**	**1.955**	**2.465**	**2.024**	**2.070**
SD	0.510	0.534	0.590	0.645	0.767	0.728	0.768
Differences							
(T2-T1) mean	−0.706	−0.723	−1.006	−0.953	−0.821	−0.900	−0.779
(T2-T1) SD	0.779	0.579	0.743	0.725	0.774	0.887	0.748
(T3-T1) mean	−0.541	−0.521	−0.700	−0.704	−0.296	−0.554	−0.411
(T3-T1) SD	1.184	1.135	1.313	1.315	1.353	1.351	1.285

explaining away DA indicators: "*You might have brushed it off as 'they're just a bit of an aggressive person*'" [Interviewee 9, therapeutic radiographer, Level 1-trained]. Training lowered their threshold of concern which was crucial because emotional reactions to cancer can mask abusive behaviours: "*It's being careful not to dismiss what you're seeing is simply an emotional reaction to cancer*" [Interviewee 8, social worker, Level 2-trained]. This interviewee highlighted that disentangling the reaction to cancer from potential DA would require "*longer-term work … as [patients] settle into the rhythm of treatment*".

Respondents also made changes to DA enquiry and noticed DA indicators their untrained colleagues missed or did not act upon: e.g., "*I asked a patient [about] their husband's attitude because of one of their answers in a breast surgery consultation, which the consultant did not pick up on*" [survey respondent, nurse, Level 3-trained]. They moreover reported that training improved their response to victim-survivors, including by signposting to specialist services e.g., "*I now carry [resources] with [DA] helpline printed on in my workbag*" [survey respondent, speech and language therapist, Level 1-trained]. Respondents also made clear to victim-survivors that DA is part of their role: "*There's a door open for them to come and talk to you*" [Interviewee 7, volunteer coordinator, Level 2-trained].

3.6. Objective 4. does the number of DA identifications increase after coordinators are hired?

3.6.1. Site 1 safeguarding data

In the nine months before and after the coordinator's first training, safeguarding teams documented 36 and 41 DA identifications, respectively, totalling a 13.9% increase. Drawing on meeting minutes, the adult safeguarding lead reflected that before the coordinator's hire, staff would mainly contact her team for advice on what to do if they were concerned about DA, whereas after, they more frequently contacted the team simply to inform them that they had received a disclosure of, and responded to, DA. The safeguarding lead said staff were more confident and taking the correct action.

3.6.2. Self-reported DA identifications post-training

At T3, a fifth (17/85) of survey respondents encountered DA cases, including suspected cases. Table 9 summarises T3 data on DA cases. While at T1 respondents had encountered one patient on average, at T3 they encountered one to two. Again, victim-survivors commonly had equality and diversity characteristics that could be help-seeking barriers. Respondents took appropriate action. Notably, in contrast to pre-training, most identifications were via noticing indicators and behaviours rather than direct disclosures. However, T3 respondent numbers were too small for significance testing.

3.6.3. Site 2 cases with which the coordinator supported staff

Across 13 months, site 2's coordinator supported nine professionals, including clinical nurse specialists, cancer support workers, and a psychologist to provide immediate DA support (e.g., safety planning, referral to services) to 13 patients or caregivers. Nine were patients experiencing DA, one was a patient worried about his own abusive behaviour, two involved younger patients whose mother had experienced recent DA, and one was a case where staff were worried that an abuser (caregiver) was portraying himself as a victim of the patient. In 7/13 cases, the DA was not known to other agencies or services.

3.6.4. Improved referrals to DA specialist services

A month after training began, Site 2's local DA service began recording whether newly referred clients were affected by cancer: at the time of writing, fifteen referrals where the client had cancer (three referred by Trust staff) and two where the abuser had cancer were received.

3.7. Objective 5. what are the key moderators between intervention components and outcomes?

3.7.1. Culture change work needed

An unsupportive culture whereby peers and seniors have differing values and priorities, and power imbalances within teams whereby one person felt able to override and contradict another, were negative contextual moderators that impeded the impact of training on outcomes. A Level 1-trained therapeutic radiographer said that radiographers were especially well-placed to separate suspected victims and abusers ("*we're quite strict: we don't tend to allow relatives in [the room]*"); however, there was also "*a culture of, 'that's not our main focus … there's nothing we can do*'" (Interviewee 9) thus these rare opportunities to enquire were missed.

In two examples, respondents' untrained colleagues perpetuated the idea that potential DA indicators were normal reactions to cancer. As a coordinator case note reported, a Level-1 trained nurse reported that she found a patient's husband intimidating and controlling, the patient described him as smothering and overwhelming, and he was aggressive

Table 6
Multinomial Logistic Regression Results -reported as relative risk ratios (RRRs) using score 1 (=very confident) as comparison base.

Variables	2 (quite confident)	3 (not very confident)	4 (not confident at all)	2 (quite confident)	3 (not very confident)	4 (not confident at all)
	Understanding domestic abuse (DA) dynamics (base = 1 [very confident])			**Referring to support services (base = 1 [very confident])**		
Time 2	0.316[a]	0.012[a]	0.000	0.592[c]	0.029[a]	0.000
	(0.000)	(0.000)	(0.987)	(0.018)	(0.000)	(0.964)
Time 3	0.468[c]	0.045[a]	0.000	0.895	0.220[b]	0.111[c]
	(0.043)	(0.000)	(0.995)	(0.795)	(0.002)	(0.042)
Training type = level 2	1.578	1.398	0.931	1.328	2.287[c]	1.901
	(0.085)	(0.372)	(0.939)	(0.313)	(0.018)	(0.266)
Training type = level 3	0.477[b]	0.546	0.000	0.475[b]	0.818	0.844
	(0.003)	(0.082)	(0.990)	(0.004)	(0.535)	(0.751)
Site	0.868	0.829	0.523	0.907	0.982	0.763
	(0.396)	(0.430)	(0.311)	(0.579)	(0.937)	(0.486)
Role	0.862[a]	0.835[a]	0.709[c]	0.890[b]	0.872[b]	0.930
	(0.000)	(0.000)	(0.018)	(0.001)	(0.003)	(0.340)
Age	1.037	0.968	1.103	1.078	0.930	0.703[c]
	(0.600)	(0.743)	(0.709)	(0.301)	(0.427)	(0.030)
Sex	1.621	1.425	1.051	1.712	2.330*	2.012
	(0.102)	(0.370)	(0.959)	(0.077)	(0.022)	(0.297)
Constant	3.304	4.910	2.120	1.462	1.745	1.213
	(0.093)	(0.093)	(0.743)	(0.604)	(0.528)	(0.902)
Observations	749	749	749	750	750	750
Variables	2 (quite confident)	3 (not very confident)	4 (not confident at all)	2 (quite confident)	3 (not very confident)	4 (not confident at all)
	Recognising DA signs (base = 1 [very confident])			**Knowing what to ask (base = 1 [very confident])**		
Time 2	0.128[a]	0.005[a]	0.000	0.237[a]	0.010[a]	0.000
	(0.000)	(0.000)	(0.990)	(0.001)	(0.000)	(0.981)
Time 3	0.189[b]	0.020[a]	0.000	0.736	0.044[a]	0.098
	(0.003)	(0.001)	(0.996)	(0.640)	(0.001)	(0.059)
Training type = level 3	0.373[b]	0.244[b]	0.000	0.319[b]	0.133[a]	0.236
	(0.004)	(0.005)	(0.989)	(0.003)	(0.000)	(0.056)
Site	0.574	0.500	0.000	0.506[c]	0.400[c]	0.000
	(0.083)	(0.143)	(0.995)	(0.036)	(0.039)	(0.987)
Role	0.833[b]	0.735[a]	2.720	0.912	0.824[c]	1.034
	(0.001)	(0.000)	(0.338)	(0.116)	(0.014)	(0.781)
Age	1.194	1.353	0.663	1.101	0.979	0.679
	(0.118)	(0.072)	(0.570)	(0.440)	(0.899)	(0.116)
Sex	1.881	1.294	3114508.56	1.106	3.368	1.443
	(0.289)	(0.753)	(0.995)	(0.871)	(0.159)	(0.780)
Constant	8.493	15.277	0.000	20.244	20.746	62813954.4
	(0.140)	(0.181)	(0.997)	(0.052)	(0.149)	(0.985)
Observations	314	314	314	314	314	314
Variables	2 (quite confident)	3 (not very confident)	4 (not confident at all)	2 (quite confident)	3 (not very confident)	4 (not confident at all)
	Knowing what to say in response (base = 1 [very confident])			**Risk assessing (base = 1 [very confident])**		
Time 2	0.421[c]	0.020[a]	0.000	0.836	0.056[a]	0.036[a]
	(0.028)	(0.000)	(0.981)	(0.685)	(0.000)	(0.000)
Time 3	0.590	0.020[a]	0.083[c]	1.297	0.481	0.233
	(0.360)	(0.001)	(0.034)	(0.738)	(0.339)	(0.248)
Training type = level 3	0.282[a]	0.191[a]	0.380	0.374[c]	0.217[b]	0.239[c]
	(0.001)	(0.001)	(0.178)	(0.025)	(0.001)	(0.047)
Site	0.418[b]	0.459	0.132	0.551	0.522	0.000
	(0.008)	(0.063)	(0.065)	(0.088)	(0.104)	(0.988)
Role	0.930	0.841[c]	1.027	0.897	0.841[c]	1.031
	(0.201)	(0.022)	(0.815)	(0.118)	(0.024)	(0.785)
Age	0.961	0.940	0.568[c]	1.189	0.937	0.919
	(0.745)	(0.696)	(0.024)	(0.260)	(0.697)	(0.709)
Sex	0.774	1.601	0.909	1.020	3.495	2.169
	(0.692)	(0.577)	(0.941)	(0.978)	(0.144)	(0.551)
Constant	54.812[c]	43.076	178.822	8.961	10.836	5979449.87
	(0.012)	(0.069)	(0.095)	(0.222)	(0.245)	(0.987)
Observations	314	314	314	303	303	303
Variable		2 (quite confident)		3 (not very confident)		4 (not confident at all)
		Documenting DA (base = 1 [very confident])				
Time 2		0.433[c]		0.037[a]		0.047[a]
		(0.016)		(0.000)		(0.000)
Time 3		0.448		0.139[b]		0.188

(*continued on next page*)

Table 6 (*continued*)

Variable	2 (quite confident)	3 (not very confident)	4 (not confident at all)
	Documenting DA (base = 1 [very confident])		
	(0.154)	(0.004)	(0.151)
Training type = level 3	0.394[b]	0.520	0.266
	(0.007)	(0.132)	(0.073)
Site	0.467[c]	0.464	0.000
	(0.014)	(0.065)	(0.987)
Role	0.914	0.952	1.172
	(0.126)	(0.496)	(0.161)
Age	1.043	1.066	0.905
	(0.734)	(0.678)	(0.637)
Sex	0.870	1.184	0.396
	(0.821)	(0.835)	(0.370)
Constant	21.312[c]	9.316	37978244.2
	(0.044)	(0.255)	(0.986)
Observations	300	300	300

p-values in parentheses.
[a] $p < 0.001$.
[b] $p < 0.01$.
[c] $p < 0.05$.

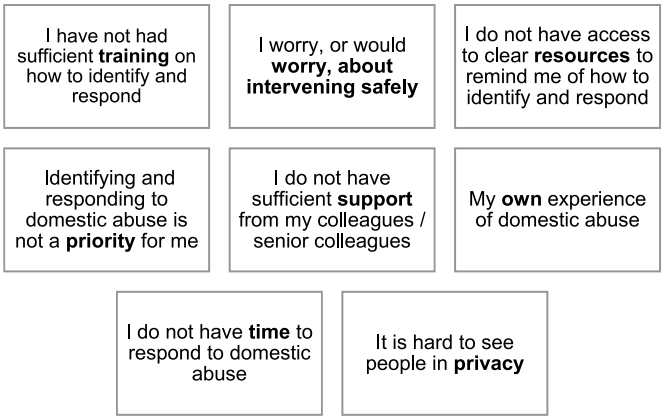

Fig. 2. Barriers to identifying and responding to DA (bold terms correspond to Table 7 headings).

if she tried to advocate for the patient. She reported that her colleague felt he was "*just being a caring husband*". A different Level 1-trained nurse in a similar situation said a colleague contradicted her advice to a junior nurse, deterring any action and leaving the patient at risk:

> *"I implored the staff nurse to seek advice from the safeguarding team and said, "Document your concerns so they [can] build a picture." But then it was contradicted by the [senior nurse] who said, "He may be stressed, she's at the end of her life." I felt inadequate: nobody listened to me."* (Interviewee 6)

At the same time, we also found evidence of the start of culture change: at T3, 11/16 Level 3 (DAL) attendees reported using their training to support colleagues, either with specific cases or by being available for DA questions: this change was the intended outcome of setting up a DAL network.

3.7.2. Support from coordinator 2 in Site 2

T3 survey respondents and interviewees who sought coordinator 2's support reported finding it helpful. Interviewees reported that the support was more immediate, intensive, and tailored than that which safeguarding teams were able to provide, and as the below quotation highlights, was reassuring, informative, confidence-bolstering, and resilience-building:

> *"There is something about knowing someone has your back: for your emotional health and your longevity in the job, it makes a huge difference."* (Interviewee 1)

The coordinator also supported staff in coordinating partnership working between primary care, secondary care, and DA services, and thereby to provide wraparound support to patients at acute risk: in one case this was particularly important because the GP had reached the limit of his advice:

> *"[Coordinator] was very supportive. She explained the available support … and … the best course of action. I said to [patient], "Can I ring your*

Table 7
Mean differences and standard deviations (SDs) by barrier.

Time (T)/barriers	Priority	Time	Safe	Training	Privacy	Resources	Support	Own experience	Other
Pre (T1)	n = 451	n = 451	n = 451	n = 451	n = 451	n = 451	n = 451	n = 451	n = 451
Mean	0.058	0.020	0.503	0.435	0.306	0.220	0.016	0.053	0.044
SD	0.233	0.140	0.501	0.496	0.461	0.414	0.124	0.225	0.206
Post (T2)	n = 451	n = 451	n = 451	n = 451	n = 451	n = 451	n = 451	n = 451	n = 451
Mean	0.013	0.018	0.259	0.033	0.290	0.035	0.007	0.031	0.044
SD	0.115	0.132	0.439	0.180	0.454	0.185	0.081	0.174	0.206
Post (T3)	n = 84	n = 84	n = 84	n = 84	n = 84	n = 84	n = 84	n = 84	n = 84
Mean	0.048	0.036	0.321	0.071	0.369	0.083	0.000	0.036	0.131
SD	0.214	0.187	0.470	0.259	0.485	0.278	0.000	0.187	0.339
Differences									
(T2-T1) mean	−0.044	−0.002	−0.244	−0.401	−0.016	−0.184	−0.009	−0.022	0.000
(T2-T1) SD	0.263	0.195	0.666	0.534	0.640	0.462	0.133	0.290	0.283
(T3-T1) mean	−0.010	0.016	−0.182	−0.363	0.063	−0.136	−0.016	−0.018	0.087
(T3-T1) SD	0.239	0.163	0.550	0.508	0.499	0.430	0.124	0.236	0.234

Table 8
Marginal effects post logistic regression for barriers.

Barriers	Time 2 (post training)		Time 3 (6 month follow up)	
	Marginal effect	p-value	Marginal effect	p-value
Priority	−0.055[a]	0.000	−0.046	0.089
Time	0.002	0.822	0.025	0.426
Safely	−0.321[a]	0.000	−0.206[c]	0.011
Training	−0.470[a]	0.000	−0.396[a]	0.000
Privacy	−0.045	0.220	0.040	0.611
Resources	−0.196[a]	0.000	−0.141[b]	0.006
Support	−0.019[c]	0.047	.	not estimable
Own experience	−0.027	0.089	−0.037	0.173
Other	−0.002	0.920	0.040	0.405

no variation in 'Support' at T3.
[a] $p < 0.001$.
[b] $p < 0.01$.
[c] $p < 0.05$.

GP?" "Yes"….GP said "[Patient] wants a miracle solution and there isn't one. She doesn't want to move out [or] ask him to move out." I rang [DA service], I went to [her outpatient] appointment and spoke to the consultant before. She did have an appointment with [DA service]." (Interviewee 1)

3.8. Objective 6. what if any additional intervention components are needed to improve practice?

More intervention components were needed for greater preparedness. Level 2 and 3 trainees suggested additional training topics: adult-child-to-parent DA, which they reported was common; DA towards men, LGBTQ+, and older people; subtle emotional abuse; and financial abuse, which was unfamiliar terrain but relevant in discussions about lasting power of attorney and welfare benefits. They wanted more detailed and practical advice on responding to abusive patients, safe ways to separate abusers and victim-survivors, and what to do if a suspected victim does not disclose. One respondent who had in-depth DA training from a previous social care role wanted an even greater cancer focus in training: "*Understanding the reaction to cancer more would help, the emotional and psychological processing [of diagnosis]*" (Interviewee 8, social worker, Level 2-trained).

Respondents also wanted quick reference flowcharts that summarised key training points, repeated training, and a permanent co-located DA worker to complement the training. A few wanted to understand whether the 'family or relationship concerns' checkbox from the holistic needs assessment checklist was suitable for DA enquiry—however, trainees realised within the training that in the same Trust, different professionals used different approaches to the assessment: for example, patient self-completion at home or online (which could pose risk if abusers saw victim-survivors' answers) vs in-person in an interview style. At a more organisational and system level, they wanted better joined up working between safeguarding teams in different trusts that patients might move between and multi-disciplinary team meetings to manage cases.

4. Discussion

This study is the first, to our knowledge, to evaluate a DA training (and support) intervention for cancer professionals in England. The key findings included that almost 20% of staff members were trained, outweighing the percentage of staff that co-located hospital DA advocates trained in two hospitals as part of a previous intervention (Safelives, 2016) illustrating the appetite for DA and cancer training. Most trainees were nurses suggesting a wider culture change is needed whereby other professionals, especially surgeons, oncologists, and other doctors, also see DA as part of 'core business'.

Overall, our evaluation contributes further evidence of the benefit of the DA coordinator role; contributes new evidence for the feasibility of adapting the role for a specific context; and illustrates the need for a DA response in the cancer setting. Respondents indicated that they commonly encountered DA in the cancer context, suggesting a high prevalence, and had largely taken appropriate action. Findings suggest that at baseline, HCPs already had motivation and openness to addressing DA and thus some 'readiness' preconditions for DA interventions to succeed were met.

Table 9
Time 3 **domestic abuse c**ases.

Have you encountered domestic abuse (DA) cases, including patients experiencing or using DA and where no disclosure was made but you strongly suspected DA, since training? Total n = 85	
No	68, 80%
Yes	9, 10.6%
I think so	8, 9.4%
Did they have any of the following equality and diversity characteristics (which are known barriers to seeking help or getting to safety)? N= 12 answered with at least one	
Older age	6, 50.0%
Minoritized ethnicity	6, 50.0%
English not being their first language	5, 41.7%
Mental health diagnosis	4, 33.3%
Substance or alcohol use disorder	2, 16.7%,
Abuse from a partner of the same sex or gender	1, 8.3%
What actions did you take for them? N= 17 answered with at least one	
Offered them validation and immediate support	13, 76.5%
Documented the disclosure in the patient's care record	9, 52.9%
Provided phone numbers/leaflets/other resources about support services	8, 47.1%
Assessed risk to them and/or their children	10, 58.8%
Did something else	7, 41.2%
Referred them to an external domestic abuse service	7, 41.2%
Referred them to a multi-agency risk assessment conference (MARAC)	1, 5.9%

NB: we omit rows with zero values.

We found that training increased confidence in identifying and responding to DA across all seven confidence outcome variables, but significance varied by variable and time comparison. Some variation was due to professional role and may have been due to loss to follow-up or previous training (which the survey did not ask about). Other UK-based studies show post-training increases in confidence (Baird et al., 2013; Basu and Ratcliffe, 2014; McCausland et al., 2021; McGarry, 2017; Yeung et al., 2012) and a systematic review showed that training, along with continued education, facilitated HCPs' ability to care for patients affected by DA (Saletti-Cuesta et al., 2018) suggesting that repeated training might bolster confidence further.

Another key finding, highlighted by HCPs, was that DA indicators could be misinterpreted as being a result of cancer treatment or caregiver stress: e.g., anxiety, stress, and aggression. Other DA indicators might also be explained away by cancer including depression, sleep disruption, financial worries, bleeding, and bruising (which chemotherapy can cause) (NIH National Cancer Institute, 2022). Complex mental health problems or older age—common among the victims-survivors that respondents encountered—might make such misinterpretation even more likely: e.g., social isolation, bruises, and injury are common to DA and older age (Solace Women's Aid and Dewis Choice, 2021). Training appropriately lowered respondents' threshold of concern but respondents felt that the cancer-specificness of the training, and focus on older victim-survivors, could be increased.

Perception of barriers decreased between T1 and 2. However, the difference was non-significant for time, privacy, and personal experience and the effects of other barriers were washed away over time—further evidence that ongoing training and other longer-term intervention components are required. Previous research, including Owen-Smith et al. (2008) IPV intervention in gynaecological oncology, and Hudspeth and colleagues' (2022) systematic review of HCPs' perception of barriers to identifying IPV, has highlighted lack of time, privacy, and management support as key barriers.

In part to address barriers, previous authors (Hudspeth et al., 2022) including in England (Pell et al., 2024), have recommended implementing a whole health system response to DA, including embedded training, clear referral pathways, co-located DA workers to support victim-survivors, clinical champions (similar to the DAL network) to support staff, policies, and protocols. Research about personalised cancer care has similarly highlighted a need for investment in staff training, time, primary and secondary care coordination, and referral pathways to support services (Biddle et al., 2016; Snowden et al., 2023). Moreover, authors have recently called for trauma-informed approaches to cancer care (Davidson et al., 2023): they highlight that although evidence about such care is evolving, it is still limited in implementation. With such an approach, support for HCPs with personal experience would be integral. A systematic review has shown that such HCPs had greater DA awareness, responsibility to respond, and sensitivity and signposting knowledge. However, more recent experiences (i.e., those who had less chance to seek support and recover) were related to distress when faced with DA at work (Dheensa et al., 2023).

Most respondents said they intended to make or had made changes to practice because of training: largely being more aware of DA, having a lower threshold of concern, and greater readiness to ask questions and respond to disclosures. Training attendees also reported that they were able to use their training to support colleagues. Evidence suggested that the DAL network approach led to cascaded support and knowledge, but longer-term support is needed to embed the network into practice. We also found untrained colleagues contradicted trainees' advice to others, suggesting that all, or more, professionals (particularly those with seniority or influence), require training. Lewis et al. (2023) evaluated trauma-informed care implementation in healthcare and similarly found that disconnected leaders, differing values, an unsupportive culture, power imbalances, and hierarchy negatively moderated the relationship between intervention and outcomes.

In one site, identifications went up by almost 14% nine months after the coordinator's first training session. A similar calculation was not possible in the other site, but there, the coordinator recorded 13 DA cases where she provided support and debriefing to staff in 13 months. Qualitative findings suggested her role increased confidence. We found that staff sought and accessed coordinator support, which was facilitated by co-location, and staff were reaching 'hidden' victim-survivors, i.e., where DA was not known to other agencies and services. Earlier evaluations of hospital-based DA advocates who supported staff have shown improvements in DA awareness, skills, knowledge, confidence, comfort with enquiring, and relief from having to manage disclosures alone (Basu and Ratcliffe, 2014; Coy and Kelly, 2016; Warren-Gash et al., 2016). Like our findings, Halliwell et al. (2019) found that these advocates reached victim-survivors who were previously not known to DA services: older, higher income, or pregnant victim-survivors. Melendez-Torres and colleagues' evaluation of the DA coordinator role in one Trust suggests that the role increased MARAC referral rate (Melendez-Torres et al., 2024). Our evaluation thus contributes to the wider evidence base that a DA role in a trust can benefit victim-survivors as well as staff. Respondents wanted a permanent DA specialist on site, and more training on responding to abusers, echoing earlier research about identifying and responding to abuser-patients (Penti et al., 2017; Williamson et al., 2015).

4.1. Strengths and limitations

Limitations include that regression results require cautious interpretation as surveys asked different questions according to training level received. Most respondents were women and nurses and responses were constricted geographically, limiting generalisability. The risk of nonresponse bias was high, i.e., those who did not complete the survey may have had lower confidence and awareness of DA. There was attrition throughout the survey, so outcome data were incomplete. A limitation our evaluation shares with the extant literature is that they do not measure long-term confidence. We did not use a validated piloted survey. Data on reasons for non-response and attrition were not collected. We were unable to determine identification rate in Site 2 but in Site 1 we captured identification rate nine months after the first training, which is comparable to previous research (e.g., Szilassy et al., 2021). We were unable to capture impact on victim-survivors as those identified within the short project time frame were potentially too high-risk or clinically vulnerable to safely approach. Assumptions in our theory of change about victim-survivors could be developed further.

4.2. Implications and recommendations for practice, policy, and future research

Our study has shown that there is a need and desire for a DA response in the cancer setting at least in two large sites. Implications for practice and policy are that the intervention was effective, and we recommend that a larger-scale pilot of the DA coordinator role is rolled out in the cancer context, but improvements are needed. Clinical champions among oncologists, surgeons, and other non-nursing professions are needed to elicit a wider culture change. Training content requires stronger integration between cancer and DA including the impact of DA on treatment and recovery, DA indicators in the cancer context, and disentangling DA from 'normal' difficult family dynamics in response to cancer. Future iterations of training should also advise on specific touchpoints for DA enquiry including therapeutic radiography, how to map private spaces in the hospital and ensure telehealth consultations are private (e.g., using published guidance, (e.g., Jack et al., 2021)), and highlight support for affected staff. More diverse victim-survivors should be discussed, including men and older people, and types of DA including adult child-to-parent abuse, potentially as standalone modules to complement other training packages. Other resources, particularly flowcharts to enable quick reference, repeated training, a permanent DA advocate or coordinator within the cancer team, and referral pathways to local DA services, are also needed. The findings of the intervention have fed into a Macmillan Cancer Support 'cancer and domestic abuse toolkit for professionals' which contains such flowcharts (Macmillan Cancer Support., 2024).

Cancer hospitals may be specialist centres for certain treatment types and thus care for national patients: here, professionals would need time to identify and refer to services local to the patient/caregiver. Standalone research to explore whether and how the holistic needs assessment can safely be used to prompt DA discussion and enquiry would be useful: several issues (e.g., inconsistency in use, completion at home by the patient) mean it is not safe in its current format. DA enquiry would only be appropriate in the holistic needs assessment if done carefully and selectively (i.e., not as a form of screening, which could become a 'box-ticking exercise') by trained professionals who can respond to disclosures appropriately.

Future evaluation research should incorporate cost-effectiveness of the coordinators: Melendez-Torres et al. (2024) found that the role was cost-saving based on assumptions about effectiveness and resource use but further, more robust, analyses (e.g., interrupted time series) are needed. Further evaluation research should also explore how intervention components affect victim-survivors' recognition of their own experiences of DA and their perception that the cancer setting is a safe and supportive space for disclosure. This research should explore how to ensure victim-survivors who are caregivers (i.e., where the patient is the abuser) are supported. Research should be co-produced/co-designed with people with lived experience.

CRediT authorship contribution statement

Sandi Dheensa: Writing – original draft, Methodology, Investigation, Funding acquisition, Formal analysis, Conceptualization. **Ruth Hendy:** Writing – review & editing. **Linda Finn:** Writing – review & editing, Conceptualization. **Marion Goodchild:** Writing – review &

editing. **Estela Capelas Barbosa:** Writing – review & editing, Formal analysis.

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Declaration of competing interest

The authors declare that they have no competing interests.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ejon.2024.102724.

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