Title: A systematic review of practitioner enquiry into adverse childhood experiences in primary care

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ABSTRACT

This article presents the findings of a systematic review undertaken to assess adverse childhood experiences (ACE) enquiry among practitioners of primary care for children's services. Literature was eligible for inclusion if it included the primary care practitioner experience of ACE enquiry, was published from 1998–2021 and was in English. The most frequently cited themes across all included studies were time and training, with time the most commonly cited barrier. The findings indicate that aspects of the health visitor service model include facilitators to integrate ACE enquiry into routine health visitor practice, although the research highlights barriers of time and resources. Further research is required to expand the limited evidence base for incorporating ACE enquiry into health visitor practice in the UK and to similar models of care internationally.

Key points

■ Adverse childhood experiences (ACEs) have been shown to have lifelong effects on physical and mental health, as well as health-harming behaviours

■ Several agencies have recommended an urgent public health approach to tackle ACEs, to reduce the personal and financial burden of disease from health-harming behaviours

■ Until recently, the majority of studies were USA based and there are still few studies relating to ACE enquiry by health visitors in the home environment and the UK

■ The findings of this review indicate that health visitors are well placed to integrate ACE enquiry into routine health visitor practice, although translation needs to be placed in the current context of health visitor services in the UK

■ The ability of health visiting teams to integrate ACE enquiry safely and sensitively requires adequate staffing levels to meet demand and sufficient community resources

INTRODUCTION

Adverse childhood experiences (ACEs) have been shown to have lifelong impacts on physical and mental health, with these harms known to be cumulative and intergenerational (Bellis et al. 2017; Felitti 1998). Several agencies have recommended an urgent public health approach to tackle ACEs, to reduce the personal and financial burden of disease from health-harming behaviours (EIF 2020; WHO 2018; Jones 2019). Research is emerging on the feasibility and acceptability of ACE enquiry for practitioners, particularly physicians and paediatricians within the primary care setting (Bryant and VanGraafeiland 2020; Hardcastle and Bellis 2019; Pearce 2019). Until recently, the majority of studies were USA-based and there are still few studies relating to ACE enquiry by health visitors, within the home environment or the UK (Davis and Kane 2016; Hardcastle and Bellis 2019).

Awareness of ACEs can lead to improved understanding and assessment of family needs resulting in better-targeted support interventions and increased trauma-informed practices within health visiting (Hardcastle and Bellis 2019). Trauma-informed practice means that practitioners recognise the link between trauma and health, help people feel safe and take measures to prevent re-traumatisation through their care (The Kings Fund 2019). There is strong evidence for positive health implications resulting from routine ACE enquiry, though some studies advise caution, and debate the best way to achieve positive results and reduce potential harms (Finkelhor 2018).

In particular, ethical concerns have been raised around risks of retraumatising, the skills of professionals enquiring and the risk of routine screening replacing empathic conversations (EIF 2020).

ACE enquiry is not routinely practiced as part of the Healthy Child Programme framework which guides health visitor practice in the UK (NHS England 2020; Public Health Scotland 2020; DHSSPS 2020; NHS Wales 2019). Health visitors have a community-orientated public health role (Bryar 2013) as Specialist Community Public Health Nurses (SCPHN) who specialise in early identification of health needs in families with a child from birth to five years. Health visitors lead the Healthy Child Programme, which in England encompasses the 4-5-6 model (NHS England 2020) through which targeted support can be offered to children and families most at risk of poor health or social outcomes.

A systematic review in 2019 (Ford and Davies 2019) of routine enquiry into ACEs, identified gaps which can be addressed through future research. Results found that barriers of confidence and guidance were the main themes emerging from studies of practitioner feasibility and the main barriers reported by service users were lack of empathy and time from practitioners. In the UK, some health visiting services routinely conduct listening visits for maternal mental health concerns, make informal enquiries about past

experiences, are trained in infant mental health development and motivational interview techniques (Brazelton 1978; Day 2014; Hirdle 2016).

The 2019 review (Ford and Davies 2019) highlighted an urgent need for research on ACE enquiry in other countries and in other health settings, for example to assess the transferability of current evidence to systems in state provided structures, such as the UK National Health Service (NHS).

A further review of screening for ACEs published in 2021 (Rariden et al. 2021) examined the acceptability, feasibility and implementation of ACE screenings from the perspectives of clinicians in the USA, providing evidence that implementing screening is possible in a variety of health care settings including prenatal care, adult primary care and home visits. Multidisciplinary ACE-awareness events and pilot studies are beginning to be held across the UK (Hardcastle and Bellis 2019; Mortimore 2021; Quigg 2020; ACE-Aware Scotland 2021)

This systematic review aims to explore experiences of ACE enquiry within primary care for children's services, settings which are translatable to the UK health visiting caseload. Concerns have arisen from reviews related to ACE enquiry during one-off consultations often lacking follow up, signposting and support (EIF 2020; Finkelhor 2018). The purpose of this review is to translate findings from existing relevant studies in order to expand

understanding of factors influencing integration of ACE enquiry into routine health visitor practice in the UK and consider whether this particular service delivery model could have potential to mitigate some of these concerns.

METHODS

The review was reported in line with the PRISMA 2020 guidelines (Page et al. 2021).

Eligibility criteria

Initial scoping searches highlighted a low number of studies relating to ACEs within health visitor practice. The search was therefore broadened to include primary care practitioners. Due to the first major studies on ACEs emerging after 1998 (Felitti 1998) searches were limited between 1998 and April 2021. No limits were set for the geographical context of studies but were restricted to those that were published in English due to limits on resources.

Literature was eligible for inclusion if it included the primary care practitioner experience of ACE enquiry. No limits were imposed on methodology or source types to ensure richness of data and all formats were initially included, due to the emerging nature of the field of study. Any measure or record of experiences of ACE screening or enquiry were included for review, together with outcomes relating to perceived barriers and facilitators, study population, setting and ACE enquiry tool used. All measures of practitioner perspective were included. During the process of

quality assessment and full text screening, the review team considered some relevant articles too methodologically limited to provide meaningful data, though they provided useful data for background. Literature was therefore restricted at that stage to those that reported primary data to facilitate data extraction.

Exclusion criteria included studies relating to the care of adults who were not parents or in the perinatal period; studies based in secondary or tertiary care settings; studies addressing the outcomes or treatment of the impact of ACEs or that reviewed a population of secondary mental health services practitioners. Studies were excluded where primary data was not reported such as feature articles and opinion pieces.

Search strategy

The research strategy completed between 21-31 March 2021 was devised in collaboration with an experienced academic librarian (AL) who was also a member of the review team. A search for relevant studies was conducted of the following bibliographic databases: CINAHL Complete, EMBASE and APA PsycINFO. These were selected to gain a wide, interdisciplinary scope of results. Grey literature was searched using the following electronic sources: Google scholar, NICE Evidence Search: Health and Social Care, Open Grey and TRIP medical database together with citation tracking of relevant articles.

The following search terms were used: *adverse childhood experiences or ACEs, screening adverse childhood experiences, trauma-informed, health visit*, specialist community public health nurse, SCPHN, public health nurse, community nurse, child health nurse, child and family health nurse, practitioners' perspective, primary care, home visit*, home visiting program*, house calls.* Search terms were defined using the most commonly used terms for health visitors or their international equivalents as well as abbreviations and medical subject headings where appropriate.

There are several interchangeable terms used within the literature for ACE enquiry. 'Routine enquiry' is becoming the preferred term due to concerns that the term 'screening' can lead to routine ACE enquiry becoming a tick box exercise, which risks re-traumatisation through a lack of appropriate follow up and support (EIF 2020) However, scoping searches showed 'screening' to be the term most commonly used in conjunction with ACEs and captured other relevant terms adequately and was therefore used for the purpose of this search strategy. The syntax was translated dependant on the requirements for each database.

Data extraction

Due to a high heterogeneity of methodologies observed across included studies, an integrative approach to data extraction and synthesis was utilised in order to preserve the methodological context of the findings when

compared and meta-analysis could not be meaningfully undertaken. NVivo software (Version 12) was used to complete selective extraction and line by line coding of qualitative results relating to practitioner perspectives.

Data synthesis

The lead researcher (LA) completed searches and title and abstract screening independently, therefore a process of repeat screenings was applied to allow reflection and resolution of discrepancies against a bespoke, piloted screening and selection tool to limit selection bias. At this stage, seven borderline studies (n=22%) were cross-checked by two members of the review team (DN, EK). Full-text studies were reviewed by four members of the review team (LA, DN, EK, AL) prior to quality assessment and data extraction.

Quality assessment was completed by the lead researcher using the CASP tool for qualitative studies (CASP 2019) and the EPHPP tool for quantitative studies (EPHPP 2009). Quantitative data was analysed and presented separately for clarity.

A thematic approach to data synthesis was taken. Topics arising from the data were broadly designated under two initial headings of ‘barriers’ and ‘facilitators’ to aid analysis of whether factors enhanced or impeded enquiry, as single themes were often cited in both a positive and negative context.

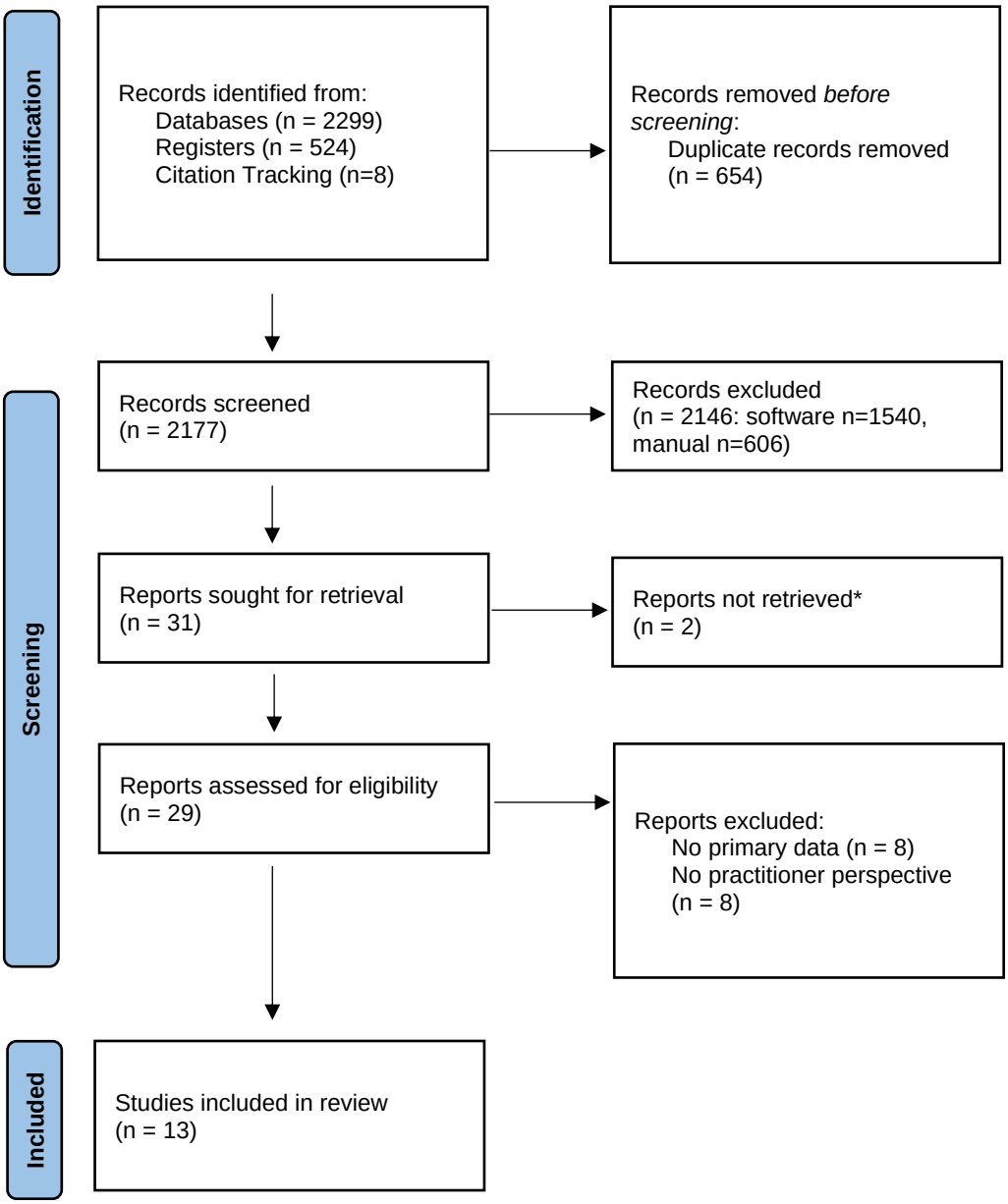
Expressed perspectives were coded to nodes that generated iteratively. Nodes were then reviewed and renamed manually where they overlapped, which developed into eight broad themes.

RESULTS

The search strategy located a total of 2177 articles for screening following removal of duplicates, of which 29 were assessed by full-text screening. A total of 13 met the inclusion criteria (figure 1). Of the final 13, 11 were based in the USA (Bodendorfer et al. 2021; Bright et al. 2015; Bryant and VanGraafeiland 2020; Davis and Kane 2016; Flanagan 2018; Gillespie and Folger 2017; Kerker et al. 2016; Kia-Keating et al. 2019; Marsicek 2019; Mersky et al. 2019; Popp et al. 2020) while two were conducted in the UK (Hardcastle and Bellis 2019; Pearce 2019).

Eight of the studies were based in a practice setting (Bodendorfer et al. 2021; Bright et al. 2015; Bryant and VanGraafeiland 2020; Flanagan 2018; Gillespie and Folger 2017; Kerker et al. 2016; Kia-Keating et al. 2019; Marsicek 2019), four were conducted in community settings within families' homes (Davis and Kane 2016; Hardcastle and Bellis 2019; Mersky et al. 2019; Pearce 2019) and one was conducted in an academic setting (Popp et al. 2020).

Figure 1. PRISMA Flow Diagram



*Campbell, TL. 2020. Screening for Adverse Childhood Experiences (ACEs) in Primary Care: A Cautionary Note https://jamanetwork.com/journals/jama/article-abstract/2766775
(viewpoint article, full text unavailable)
*Stevens JE. 2012. (from Woolridge) https://acestoohigh.com/2012/03/23/public-health-clinic-adds-child-trauma-to-smoking-alcohol-hiv-screening/ (unable to locate original study findings)

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71

Of the included studies, six utilised mixed methods (Bodendorfer et al. 2021; Bright et al. 2015; Flanagan 2018; Gillespie and Folger 2017; Hardcastle and Bellis 2019; Kia-Keating et al. 2019), two qualitative methods (Davis and Kane 2016; Pearce 2019) and five quantitative (Bryant and VanGraafeiland 2020; Kerker et al. 2016; Marsicek 2019; Mersky et al. 2019; Popp et al. 2020). The six mixed methods studies employed qualitative methods to research practitioner perspectives and were therefore presented together.

Data collection methods included; semi-structured surveys or questionnaires (n=4); interviews (n=3), focus groups (n=2) and observational study (n=1). Five of the studies used quantitative methodologies, all of which used surveys or questionnaires for data collection. Six of the studies collected data on the views of service users, but all also included data on the practitioner perspectives and therefore was the only study data reviewed for the purposes of this systematic review. Out of the 13 included studies, ten were assessed to be of high or moderate quality.

[Insert table 1 – see end document]

Eight broad themes emerged from the data; knowledge/training; importance/responsibility to screen; comfort/acceptability; resources; frequency/likelihood of screening; time; multidisciplinary working and rapport.

Qualitative & mixed methods studies

Of the qualitative and mixed methods studies, time was cited by seven. Time was expressed equally as a barrier and a facilitator by six of these. Participants in five studies expressed concerns about ACE screening taking too much time during consultations (Bright et al. 2015; Flanagan 2018; Gillespie and Folger 2017; Kia-Keating et al. 2019) or being an additional task when there are already too many conditions to screen for (Bodendorfer et al. 2021; Bright et al. 2015; Kia-Keating et al. 2019). Bodendorfer et al. (2021) highlighted providers found it difficult to determine the best timing for the ACEs conversation within the time allowed for the consultation.

Two studies referred to the time required following ACE enquiry. Hardcastle & Bellis (2019) highlighted concerns around the time required to provide additional support and Pearce et al. (2019) described the additional time needed for reflection after the session due to the emotional burden experienced, which was not available due to workload constraints.

Six studies reported positive findings in relation to time. Four studies included responses to trialling ACE enquiry, including the conversation being quick (Bodendorfer et al. 2021), time concerns decreasing (Flanagan 2018; Hardcastle and Bellis 2019) and the average time for the ACE conversation measured at 3-5 minutes (Gillespie and Folger 2017). Two studies (Hardcastle and Bellis 2019; Pearce 2019) discussed the ability to continue the

conversation over several appointments and valuing the flexibility within their role to use their professional judgement to balance timing of the ACE conversation with the needs of families and demands of organisations.

Knowledge and training was referenced by eight studies (Bodendorfer et al. 2021; Bright et al. 2015; Davis and Kane 2016; Flanagan 2018; Gillespie and Folger 2017; Hardcastle and Bellis 2019; Kia-Keating et al. 2019; Pearce 2019) and was viewed as a facilitating factor by all, though three cited a lack of knowledge and training as a barrier (Flanagan 2018; Gillespie and Folger 2017; Pearce 2019). This highlights a lack of practitioner confidence and concerns regarding how to talk to patients and address their responses in a sensitive way.

Significant improvements in knowledge and confidence were reported by providers in four studies following ACE education (Flanagan 2018; Pearce 2019), even when they had pre-existing awareness of ACEs research (Davis and Kane 2016; Pearce 2019). Participants in one study (Kia-Keating et al. 2019) expressed a desire for ACE training to be more frequent, especially in settings experiencing high staff turnover. In four studies, the practice of ACE enquiry was recognised as important for developing confidence (Bodendorfer et al. 2021; Hardcastle and Bellis 2019; Kia-Keating et al. 2019; Pearce 2019), two of which showed that increased knowledge and confidence

improved practitioners' motivation, leading to a deeper understanding of families' needs (Hardcastle and Bellis 2019; Pearce 2019).

Six studies discussed the benefits of integrated care between professionals (Bright et al. 2015; Davis and Kane 2016; Flanagan 2018; Hardcastle and Bellis 2019; Kia-Keating et al. 2019; Pearce 2019), three reported improved communication with partner professions and found practitioners made increased referrals (Bright et al. 2015; Flanagan 2018; Pearce 2019), particularly to mental health services (Flanagan 2018; Pearce 2019).

Two studies highlighted a lack of professional support services available (Bright et al. 2015; Flanagan 2018). Two studies found that ACE enquiry did not increase referrals, with Hardcastle & Bellis (2019) reporting no service users required onward referrals and Gillespie & Folger (2017) reporting just two clients were referred to mental health services during the study period.

The client-provider relationship featured frequently, with participants of six studies initially reporting anxiety around 'opening a can of worms' (Gillespie and Folger 2017; Pearce 2019) or upsetting clients (Bodendorfer et al. 2021; Flanagan 2018; Gillespie and Folger 2017; Hardcastle and Bellis 2019; Kia-Keating et al. 2019; Pearce 2019). In four of the studies, these concerns were not borne out in trials, with respondents reporting on the ease of screening

and widespread service-user acceptability (Bodendorfer et al. 2021; Flanagan 2018; Gillespie and Folger 2017; Hardcastle and Bellis 2019).

In two feasibility studies (Hardcastle and Bellis 2019; Pearce 2019) participants expressed pre-pilot concerns that ACE enquiry may be detrimental to the practitioner-service user relationship. Both reported positive findings following the pilot projects including, increased client openness, improved understanding and a sense of empowering clients. Key facilitators expressed by participants were training, supervision and flexibility in delivery. Six studies highlighted improved rapport with service users (Bright et al. 2015; Flanagan 2018; Gillespie and Folger 2017; Hardcastle and Bellis 2019; Kia-Keating et al. 2019; Pearce 2019), describing greater empathy (Gillespie and Folger 2017; Pearce 2019) and a 'deeper alliance' (Kia-Keating et al. 2019). In addition, two studies found that resilience screening had a positive effect through empowering clients (Flanagan 2018; Pearce 2019).

[Insert Table 2 – see end document]

Quantitative studies

In the quantitative studies, the most commonly measured variables were: knowledge among practitioners, the importance of ACE enquiry, comfort with screening and frequency of screening. The most frequently cited

barriers to ACE enquiry were a lack of knowledge or training and time. The most commonly cited facilitating factor was receiving education in ACE screening.

Respondents in three of the studies viewed time as a barrier to enquiry (Bryant and VanGraafeiland 2020; Marsicek 2019; Popp et al. 2020). One measured provider perception of having enough time to screen for ACEs and found no statistically significant increase post-intervention (Bryant and VanGraafeiland 2020). One found around half of respondents reported not having enough time to screen due to too many conditions to screen for (63%) and high caseloads (44%) (Popp et al. 2020). One study collected only narrative data on the theme of time and found that a perceived lack of time was presented as a secondary driver preventing screening, though no increased clinic time was reported.

Four of the studies examined providers' knowledge of ACEs research (Bryant and VanGraafeiland 2020; Kerker et al. 2016; Marsicek 2019; Popp et al. 2020). Two studies compared knowledge pre- and post-intervention. Bryant and VanGraafeiland (2020) found statistically significant differences in familiarity following interventions including ACE education. Marsicek (2019) found no such improvements, though respondents felt they would benefit from more frequent education. Two studies collected one-time survey data. One reported 76% of the paediatricians studied had no

familiarity with the original ACEs research (Kerker et al. 2016). One measured provider familiarity at 59% overall, with 65% of paediatricians citing a lack of professional education on the topic as a barrier to ACE enquiry (Popp et al. 2020).

Four studies highlighted the importance of professional training when enquiring about ACEs in order to aid more frequent ACE enquiry (Bryant and VanGraafeiland 2020; Kerker et al. 2016; Marsicek 2019; Popp et al. 2020), one of which measured statistically significant improvements in providers' knowledge and confidence following ACE education (Bryant and VanGraafeiland 2020). Two studies, reported a preference amongst providers for ACE training to be recurrent (Kerker et al. 2016; Marsicek 2019) and one showed a link between provider and client discomfort, recommending that client discomfort may be mitigated by enhancing provider interview skills through education and training (Mersky et al. 2019).

[Insert table 3]

DISCUSSION

Across all included studies, reported barriers and facilitators to ACE enquiry were comparable, with no notable differences observed between practice-based or home visiting services or between geographical settings.

Knowledge and training were the most cited theme across all settings and a lack of confidence pre-intervention was expressed in both USA- and UK-based studies, despite the majority of ACEs research to date being published in the USA. Nine of the studies placed a high focus on ACE education as a facilitating factor and included training as an integral part of pilot projects. All thirteen studies discussed knowledge and training, with all valuing ACE education and seven expressing increases in confidence and understanding post intervention.

Participants of the included studies reported finding direct enquiry using a structured questionnaire to be useful to clinical practice (Gillespie and Folger 2017; Hardcastle and Bellis 2019) and practitioners felt that without it, important information would remain unknown, preventing opportunities for support (Hardcastle and Bellis 2019; Pearce 2019).

The time needed for screening was cited frequently. Participants' initial concerns were shown to be offset by the short time required for ACE enquiry (Bodendorfer et al. 2021; Bright et al. 2015; Gillespie and Folger 2017). Increased options for flexibility and subsequent opportunities for further discussion around ACEs were a feature of the UK-based studies and were the only studies to discuss the additional time needed by practitioners and service users following enquiry where disclosures are made (Hardcastle and Bellis 2019; Pearce 2019). This may reflect the differing care models between paediatric and home visiting services.

Within the two studies of USA-based home visiting services, neither discussed time specifically, though one alluded to structural and institutional constraints more generally (Davis and Kane 2016). As health visitors are already experienced in assessing risk factors for adversity, existing practice could be adapted to incorporate ACE enquiry without the creation of an additional task.

Several authors discussed the value of collaboration with a wider team of professionals. Colleagues in mental health were viewed as a facilitating factor among study participants, increasing their confidence that the appropriate services and resources would be available following client disclosure. Variations were evident between studies in relation to referrals with some reporting no increase in referrals following screening (Bodendorfer et al. 2021; Hardcastle and Bellis 2019) and others seeing slightly increased referrals to services (Bright et al. 2015; Pearce 2019).

Merskey et al. (2019) and Pearce et al. (2019) highlighted the emotional impact of ACE enquiry on practitioners and additional requirements for reflection and supervision, particularly for those who have experienced ACEs themselves.

The client-provider relationship frequently featured in the qualitative studies. Initial concerns regarding emotional distress in clients were largely

unfounded post-intervention, with ease of screening and widespread service-user acceptability reported (Bodendorfer et al. 2021; Flanagan 2018; Hardcastle and Bellis 2019). In addition, many noted improved practitioner empathy (Gillespie and Folger 2017; Pearce 2019), a quality considered vital for future practitioners in public health (Hanlon et al. 2012).

The findings of this review are comparable to those of earlier reviews addressing the feasibility and acceptability of ACE enquiry among practitioners (Bellis 2014; Flanagan 2018; Ford and Davies 2019), finding that practitioners across settings believed in the importance of addressing ACEs and valued training on the topic, but expressed concerns around lacking time and resources. This supports the validity of the findings and enhances confidence in translating them to health visitor practice and potentially to similar health visiting service models internationally.

Few variances were observed between practice settings, though one key difference was the greater continuity of support built into UK health visiting practice. Pilot studies set in the UK found that more flexible, longer-term service provision, continuity of care and a multidisciplinary approach facilitated sensitive ACE enquiry (Hardcastle and Bellis 2019; Pearce 2019), which has considerable potential to mitigate concerns around routine ACE screening lacking empathy and follow up support (EIF 2020; Finkelhor 2018).

STRENGTHS AND LIMITATIONS

A strength of this review was that publication bias was reduced by adopting a broad approach to the search strategy with the inclusion of grey literature. This resulted in methodological heterogeneity among studies which required separation by methodology for the purpose of quality assessment, interpretation and presentation of results.

The CASP tool was used to systematically appraise the quality of the eight qualitative papers based on clarity of reporting regarding the validity, methodology and results of studies. Of these, two were considered strong and six considered moderate. For the five quantitative papers, the EPHPP tool was utilised, which rates components of the studies as high, moderate or weak. Of these, one measured as strong, one moderate and three weak.

The majority of included studies were USA-based with just two based in the UK. This highlights a gap in research in this field but limits confident extrapolation of results to other geographical areas. Risk of reviewer bias was mitigated by the support of the review team including an academic librarian and academics with systematic review expertise to cross-check decisions and resolve discrepancies. Risks were further reduced through the lead reviewer (LA) completing a process of reflection and rescreening, use of a pre-piloted screening and selection tool and NVivo software for data synthesis.

CONCLUSIONS

Adverse childhood experiences (ACEs) have been shown to have lifelong impacts on physical and mental health and health-harming behaviours (Bellis et al. 2017; Felitti 1998). ACE enquiry is not routine across health visitor practice in the UK (DHSSPPS 2020), though awareness is growing and routine enquiry has begun to be implemented in two regions to date (Hardcastle and Bellis 2019; Quigg 2020). Research is emerging into ACE enquiry conducted in home visiting settings and outside of the USA, but this remains limited (Davis and Kane 2016; Hardcastle and Bellis 2019; Pearce 2019).

This study differs from existing ACEs reviews in two key ways. Firstly, it specifically reviews the literature relating to primary care for children's services and secondly, it includes UK-based studies and examines findings within the context of the service delivery model of the UK NHS Healthy Child Programmes.

The included studies varied in quality and were mostly USA-based, therefore reliable translation to the context of health visiting in the UK or internationally is limited. However, the findings of this review indicate that aspects of the UK health visitor service model include facilitators to integration of ACE enquiry into routine practice, such as increasing

awareness of the impact of ACEs and flexibility in time and delivery of enquiry.

Health visitors have relevant, pre-existing knowledge and experience of sensitive conversations with families. In the UK many health visitors receive regular training in perinatal mental health, safeguarding children and interview techniques. Some health visiting services include limited, informal consideration of past experiences (Day 2014) and they work within communities, routinely collaborating with multidisciplinary teams across health, social care and education sectors.

However, the research consistently highlights barriers of time and resources, elements that may be further hindered by reductions in services due to austerity measures (Institute of Health Equity 2020) and the impacts of the Covid-19 pandemic. Health visitors are often working in environments of impaired capacity due increased workloads and low health visitor numbers, which can limit continuity of care (Institute of Health Equity 2020).

The ability of health visiting teams to integrate ACE enquiry safely and sensitively, depends upon adequate staffing levels to meet demand and sufficient community resources (Institute of Health Equity 2020; Torjesen 2016). These findings support calls for investment in cost-effective early intervention services (EIF 2020; Bellis 2014; Institute of Health Equity 2020).

Further research is required expand the limited evidence-base for incorporating ACE enquiry into health visitor practice in the UK and to similar models of care internationally. Research should consider whether ACE enquiry improves identification of need above current screening and discussion methods employed by health visitors (Day 2014). Future research could further explore the views of health visitors regarding enquiry, including factors such as practitioner ACE scores and discomfort (Mersky et al. 2019) to indicate the infrastructure and leadership required for successful integration.

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Table 1. Summary of studies included in the review

Author	Study methods	Data collection method	Origin	Sample/population	Study setting
Bodendorfer et al (2021)	Mixed methods	Cross-sectional questionnaire Survey	USA	238 parents 13 providers (physicians/physician assistants)	Primary care
Bright et al (2015)	Mixed methods	Observational study	USA	210 paediatricians	Paediatric office
Bryant and Van-Graafeiland (2020)	Quantitative quality improvement project	Pre-post-test survey	USA	7 medical residents 2 nurse practitioners	Paediatric primary care clinic
Davis and Kane (2016)	Qualitative	Community-based research Interviews	USA	11 home visitors	Home visitor programme
Flanagan et al (2018)	Mixed methods	Surveys and focus groups	USA	375 patients 18 physicians 3 nurse practitioners 5 nurse/midwives	Paediatric offices
Gillespie and Folger (2017)	Mixed methods	Questionnaire	USA	1308 parents 18 paediatricians 1 nurse practitioner	Children's clinic
Hardcastle and Bellis (2019)	Mixed methods	Focus groups Questionnaire	UK	8 health visitors 2 service managers	Anglesey Health Visiting Service
Kerker et al (2016)	Quantitative	Survey	USA	302 paedatricians	Paedatric primary care
Kia-Keating et al (2019)	Mixed methods	Questionnaire, semi-structured interviews	USA	151 patients 3 paediatricians 3 medical assistants 2 wellness navigators 1 social worker	Paediatric care, community medical centre
Marsicek et al (2019)	Quantitative quality improvement project	Questionnaire Survey	USA	1206 patients 5 physicians 24 medical residents	Paediatric clinic

Author	Study methods	Data collection method	Origin	Sample/population	Study setting
Merskey et al (2019)	Quantitative descriptive study	Cross-sectional questionnaire	USA	1678 clients 161 providers	Home visiting programme
Pearce et al (2019)	Qualitative	Interview	UK	3 health visitors 2 family advocates 1 family wellbeing practitioner 1 support worker	Health visiting service, drug and alcohol charity, charity family support service and local authority family support service
Popp et al (2020)	Quantitative Descriptive study	Survey	USA	30 family/paediatric physicians 5 osteopathic doctors 11 physician assistants	Community practices

Table 2. Summary of findings from qualitative and mixed-method studies

Theme	Authors	Summary of perceived barriers to ACE screening	Summary of perceived facilitators to ACE screening
Time	Bodendorfer et al (2021)	Timing for the conversation was important	The conversation was quick
	Bright et al (2015)	Extreme [patient] load, high volume of no shows Too much 'red tape' Already have too many conditions for which to screen	The speed of the conversation
	Davis and Kane (2016)	Structural and institutional constraints Lack of supervision	
	Flanagan et al (2018)	Time/workflow	Concerns that screening would take too much time decreased
	Gillespie and Folger (2017)	Not enough time during the visit	The average ACEs conversation lasted 3–5 minutes
	Hardcastle and Bellis (2019)	Lack of flexibility as to when to enquire Prescence of partners/family members Time needed to deliver the enquiry process and provide additional support	Continued conversation across appointments Quick and efficient method for gathering relevant information
	Kia-Keating et al (2019)	Time pressures and responsibilities in the clinic Workflow	'Flow' of the process could be improved
	Pearce et al (2019)	Time limitations and service restrictions	Asking the questions at the most appropriate point in the assessment We could revisit it later on once we had built up a rapport with them

Table 2. Summary of findings from qualitative and mixed-method studies

Theme	Authors	Summary of perceived barriers to ACE screening	Summary of perceived facilitators to ACE screening
Knowledge/training	Bodendorfer et al (2021)		After initial trainings and experience with having the ACE conversation, providers felt prepared, motivated and comfortable doing so Having the conversation increased awareness around ACEs
	Bright et al (2015)	61.2% (*n*=123) had completed some form of training on child maltreatment 58.3% (*n*=116) had completed some form of training on at least one of the other ACEs	Defining and understanding the effects of toxic stress should be incorporated into training for future and current paediatricians
	Davis and Kane (2016)		Through previous staff training, home visitors were already familiar with the ACEs framework as a helpful approach to thinking about their work supporting parents who have experienced ACEs and attempting to prevent future ACEs Close connection between individual and structural factors Reflection Value of continued supervision and training
	Flanagan et al (2018)	Before the pilot, clinicians reported moderate knowledge, ability, and concerns around ACE screening Lack of training in trauma-informed care and ACEs	Clinician confidence and knowledge increased
	Gillespie and Folger (2017)	Not knowing what to say to a parent who had experienced trauma Not being able to help. Not having confidence to address the issues raised	Better understanding of the forces that shape parenting
	Hardcastle and Bellis (2019)	Initial reservations cited during engagement and training	Challenged assumptions Positive experiences during implementation of

Table 2. Summary of findings from qualitative and mixed-method studies

Theme	Authors	Summary of perceived barriers to ACE screening	Summary of perceived facilitators to ACE screening
			both the feasibility and acceptability of the enquiry model
	Kia-Keating et al (2019)		Clear connection between mental and physical health Ongoing training The sensitive nature of ACEs screening and referral requires staff to have more hands-on training
	Pearce et al (2019)	Lack of confidence in asking and responding appropriately Feeling significantly under-skilled to respond to disclosure appropriately	Change in knowledge, perception and practice How and when to ask Increase in understanding and empathy among other professionals Training increased confidence and competence Training had prepared practitioners for embedding routine enquiry into practice Clinical case supervision was beneficial
	Bodendorfer et al (2021)		Few disclosures of adversity (9%), none of which required mandatory reporting.
	Bright et al (2015)	Limited referral resources once ACEs are identified Psychologists are scarce	Multidisciplinary approach recommended Coordination of services Referral for parent education
Multidisciplinary working	Davis and Kane (2016)		Partnering with higher education institutions Importance of coordination of services
	Flanagan et al (2018)	Lack of professional support services	Clinician champion Strong links with behavioural health and psychiatry
	Hardcastle and Bellis (2019)		Signposted to national and local support services No onward referral or specialist involvement required

Table 2. Summary of findings from qualitative and mixed-method studies

Theme	Authors	Summary of perceived barriers to ACE screening	Summary of perceived facilitators to ACE screening
Comfort/acceptability	Kia-Keating et al (2019)		Importance of holistic, integrated care
	Pearce et al (2019)		Increased referrals for counselling
	Bodendorfer et al (2021)	Concern that the parent/guardian felt accused or took offense to the conversation	Most parents/guardians were receptive to the conversation, appreciated the education, and agreed that ACEs are an important topic to discuss
	Flanagan et al (2018)	Screening might be too upsetting for patients	Acceptable to patients Easier to do than they initially expected, and their comfort increased over time
	Gillespie and Folger (2017)	Opening a can of worms during the visit Triggering a full mental/emotional collapse	Ease of screening Little resistance from parents in completing this assessment tool
	Hardcastle and Bellis (2019)	Potential for upset or distress	No explicitly expressed upset or discomfort
	Kia-Keating et al (2019)	Anxiety Families' ambivalence around the purpose of screening, and mandated reporting	
	Pearce et al (2019)	The emotional impact of hearing and responding to disclosures initial concern about asking the questions, feeling they might be ‘opening a can of worms’ that we can't deal with	

Table 2. Summary of findings from qualitative and mixed-method studies

Theme	Authors	Summary of perceived barriers to ACE screening	Summary of perceived facilitators to ACE screening
Rapport	Bright et al (2015)		Strong rapport with patient
	Flanagan et al (2018)		Resilience screening Greater rapport and trust
	Gillespie and Folger (2017)		More empathy for, and communication with their patients Parents' willingness to discuss difficult experiences
	Hardcastle and Bellis (2019)	Initial concerns of a detrimental impact on practitioner–service user relationship	Improved understanding of service users Greater openness in relationships
	Kia-Keating et al (2019)		Deeper alliance between provider and patient Improved quality of understanding of the families' experience Build and increase rapport between practitioners and families
	Pearce et al (2019)		A more ACE-informed understanding of clients Therapeutic conversations often dramatic and Invaluable for some clients [ACE enquiry] seemed to empower clients and increase their sense of autonomy over making change
Resources	Bodendorfer et al (2021)	Desire for resources to provide to parents/guardians	Resources helpful
	Bright et al (2015)	Wished for greater access to resources Lacking an appropriate screening tool	

Table 2. Summary of findings from qualitative and mixed-method studies

Theme	Authors	Summary of perceived barriers to ACE screening	Summary of perceived facilitators to ACE screening
Importance/responsibility to screen	Flanagan et al (2018)	Resource availability	Resource handout
	Gillespie and Folger (2017)	Not having resources to offer parent and families	Information within the assessment tool was useful to clinical practice Providers had not needed any resources
	Hardcastle and Bellis (2019)		Prompts and supporting materials Professional judgement Signposting, but no onward referrals required
	Kia-Keating et al (2019)		Referral to appropriate resources
	Bodendorfer et al (2021)	A social worker or behavioural health consultant would be more appropriate	Six of seven providers believed that they were the right person to have this conversation
	Bright et al (2015)	Not the paediatrician's responsibility to screen Do not have the power to change circumstances	Early recognition important Awareness raising via media
	Flanagan et al (2018)		Value for clinicians Importance of the pilot project's education about the potential life-long consequences of ACEs
	Pearce et al (2019)		ACE-informed awareness helped to maintain a sense of motivation
Frequency/likelihood of screening	Bright et al (2015)	Providers least likely to screen for sexual abuse and neighbourhood violence	Providers most likely to screen for emotional abuse and divorce

Table 2. Summary of findings from qualitative and mixed-method studies

Theme	Authors	Summary of perceived barriers to ACE screening	Summary of perceived facilitators to ACE screening
	Pearce et al (2019)	Asking clients to talk about things they don't necessarily want to think about	Making sense of the impact for clients Picked up on more issues Empowered clients and increased their sense of autonomy over making change