Title:

A systematic review of interventions to link families with pre-school children from healthcare services to community-based support

Authors:

Jacky Burns*, David I Conway, Wendy Gnich, Lorna MD Macpherson

1. Jacky Burns : jacquelineburns1@nhs.net

   Institution: NHS Fife, UK

2. David I Conway: David.Conway@glasgow.ac.uk

   Institution: University of Glasgow School of Medicine, Dentistry and Nursing, UK

3. Wendy Gnich: Wendy.Gnich@glasgow.ac.uk

   Institution: University of Glasgow School of Medicine, Dentistry and Nursing, UK

4. Lorna MD Macpherson: Lorna.Macpherson@glasgow.ac.uk

   Institution: University of Glasgow School of Medicine, Dentistry and Nursing, UK

Corresponding Author:

David I Conway

David.Conway@glasgow.ac.uk

School of Medicine, Dentistry and Nursing, 378 Sauchiehall Street, Glasgow Dental Hospital and School, Glasgow G2 3JZ

Abstract:

Background

Supporting patients to access community-based support may be a key intervention to address the wider determinants of health. There is a lack of evidence synthesis around the most effective methods for linking individuals from health services to organisations within communities, especially those aimed at supporting families with young children.

Methods

Papers were identified from seven databases covering peer-reviewed and grey literature. The Effective Public Health Practice Project and CASP Qualitative quality appraisal tools were used to assess methodological quality. Thematic narrative data synthesis based on study quality was performed.

Results

Twenty-four unique publications were included in the review with a range of study designs and variable methodological quality. A broad typology of intervention processes for undertaking linking was developed defining three distinct approaches: signposting, referral, and facilitation. Active processes, such as facilitation, appeared more successful at linking families to community support.

Conclusions

This was the first systematic review to focus on interventions which link families with young children to community-based support organisations. It identified a typology for linking interventions, and while there were limitations in the quality of evidence available, it showed a tendency for more active interventions to be more effective in linking families to community support.

Introduction

Tackling health inequalities is a key public health priority (1-3). Population health and inequalities are influenced by a number of different social factors, such as housing, employment and education, more commonly referred to as the social determinants of health (4). It is recognised that healthcare services cannot alone address health inequalities, although they do have a role to play (5). It is important therefore for healthcare teams to consider how they can contribute to addressing the wider determinants of health through developing new ways of engaging with patients (2, 3, 6). This is especially important when considering the impact health inequalities have on young children and addressing the needs of parents/carers with young children is a recognised priority (2, 7).

There is growing appreciation that closer working between health and social care services, and also with community, voluntary and third sector services is required to provide the appropriate wider support to socioeconomically disadvantaged families and thus influence the experience of health inequalities in communities and populations (5).

To influence the wider determinants at the community level and improve relationships between health and social care services it may be beneficial for health services to enable access to existing community resources and engagement activities through the process of linking individuals to organisations. Within the United Kingdom, there is strong support for these types of interventions – both the UK and Scottish Governments have supported schemes that utilise healthcare workers to support patients to access services beyond health care (8-10). These 'Link Workers' have a role in providing support to patients in developing non-medical solutions to address health and well-being needs- a process often referred to as social prescribing.

There have been a number of systematic and evidence reviews which have found the evidence relating to social prescribing to be weak and not well designed with a lack of consistent definition or implementation (11-14). Thus far the focus of social prescribing has been on the adult population aiming to address individual patient needs by building social capital, largely around mental health and wellbeing and other long-term chronic conditions (10). When considering pre-school children as our population of interest we require to expand our field of influence, and look to support the needs of the whole family to safeguard the health of the child. For this reason, we have used a more generic term of "linking" in this review, as opposed to social prescribing. The linking activities could include a range of approaches to engage parent/carers and their children with services, organisations, or activities beyond traditional health services. Linking activities may provide an opportunity for more effective use of existing resources and better utilisation of existing skills within clinical teams to influence health inequalities. This was shown in a systematic review studying linking interventions for adults with chronic health conditions which informed the development of this review (15).

This review aims to understand how health services can best help parents, carers, and families with pre-school children to engage with community-based support by linking them to local organisations, groups, and agencies. The outcome of interest is engagement with the linked community-based organisation.

Methods

The review protocol has previously been published (16) and is registered with PROSPERO (CRD42016034066) and follows the PRISMA statement for reporting (17). Cochrane and the Centre for Reviews and Dissemination best practice guidelines in completing systematic reviews were used when designing and undertaking the review (18, 19).

Population of Interest

For the purposes of this review, participants should be parents, carers or families with pre-school children (aged under five-years). Studies should focus on interventions that link participants from a health care setting to a wider community organisation. All study designs were considered for inclusion in the review, and no specific comparator was required. The primary outcome of interest was initial engagement with the linked service, defined as attending the intended destination service on at least one occasion following linking. Two secondary outcomes were included: i) continued engagement with the linked community organisation defined as attending or engaging with the intended organisation on more than one occasion; and ii) satisfaction with the linking process either from the practitioner or family/parent/carer perspective.

Search Strategy

Relevant literature was scoped using keyword searching. Papers relevant to the topic were used to identify further keywords and the language used to describe the intervention. From these papers MeSH subject headings were identified in MEDLINE then adapted to other databases. As all study designs were permitted, the use of filters to identify specific types of paper were not applied in this review. The search strategies for all electronic databases are given in Additional File 1.

Electronic database searches

A number of electronic databases which provided a wide cross section of medical and social science journals were searched. Those included in the review were: Embase, CINAHL, Medline and Web of Science (core collection). Databases were searched from their inception to May 2018, with no limits placed on date of publication or language. The reference lists of identified articles were screened to identify any further papers.

Grey literature searches

A grey literature search was conducted to identify relevant literature not listed in the databases outlined above. A number of sources of grey literature were used including TRiP, EThOS and Open Grey. This was supplemented by systematic searching in an internet search engine (Google) guided by the methods outlined by Godin et al for applying systematic search methods to grey literature (20).

Data Management

Two reviewers (JB plus LM, DC, or WG), carried out screening of identified studies independently, this included title, abstract and full text screening. If discrepancies were identified at any stage, these were resolved by discussion amongst all members of the review team. Title and abstract screening was conducted against the pre-agreed inclusion and exclusion criteria which are included in Additional File 2. At this stage any papers where disagreement occurred or where insufficient information was available were kept for full text screening. Full text copies of all studies were obtained and further assessed against the inclusion and exclusion criteria to identify the final list of publications for inclusion in the review following the same process. Publications excluded after full text screening and reasons for this are included in Additional File 3.

Quality Assessment and Risk of Bias

Two reviewers (JB plus LM, DC, or WG) carried out quality assessment and risk of bias independently. Quantitative studies were appraised using the Effective Public Health Practice Project (EPHPP) quality assessment tool (21) which can be used with multiple study designs and has good inter-rater reliability (22, 23). A global rating for the paper is given based on the assessment of selection bias, study design, confounders, blinding, data collection, withdrawal, intervention integrity and analysis. The Critical Appraisal Skills Programme checklist (CASP) was used for quality appraisal of qualitative studies. It has 10 questions related to the rigour, credibility and relevance of the study (24).

<u>Data Extraction and Synthesis</u>

Two reviewers (JB plus LM, DC or WG) performed data extraction on each study using a standardised data extraction tool (Additional File 4). A narrative synthesis approach, guided by the methods of Popay et al was used to synthesise the data (25). Key themes were identified from the data extracted. Quality appraisal was used to weight the studies included in the synthesis. It was decided prior to undertaking the synthesis that those papers that used a mixed-methods design would be appraised using both tools but when reporting and considering their weight within the synthesis the most appropriate quality assessment rating would be used. For example, if the outcomes of interest extracted from the paper were of a quantitative nature, the strength of that evidence would be considered based on the EPHPP tool global rating.

Results

The database searches were completed in May 2018. A total of 19,097 records were identified, following the removal of duplicates the number of unique records was 16,078 including 10 grey literature publications. The flow of the studies through the review process is shown in the PRISMA diagram (Figure 1). After completing title, abstract and full text screening a final list of twenty-four studies was agreed for inclusion. A summary of all papers included in the review are outlined along with the results of quality appraisal in Table 1. All studies were undertaken in either the United States (n= 17, 70.8%), the UK (n= 5, 20.8%) or Australia (n=2, 8.3%). Most were published since 2000, with only three publications prior to this time. There was a range of study designs including randomised control trials (n=3, 12.5%), cohort studies (n=2, 8.3%), qualitative studies (n=3, 12.5%) and mixed methods designs (n=6, 25%). The largest group of studies used a cross-sectional study design (n=10, 41.7%). A variety of settings was included ranging from routine child clinics (n=7) and universal health visiting programmes (n=4), to clinics for children with specific identified needs such as developmental delay (n=7).

Three key themes relating to the process of undertaking the linking intervention were identified from the extracted data; these were signposting, referral, and facilitation. It was also found that screening for social issues was an important component of linking activities regardless of the methodology. Each of these terms is defined in Figure 2. Some studies reported more than one linking element to the intervention provided. Table 2 outlines the themes identified and key results for each of the studies included in the review. Engagement with the linked services was measured in different ways but predominantly relied on self-reported data from the participants involved such as questionnaire data or telephone follow up calls.

Signposting

A quarter of the studies used signposting as a modality to link patients to community resources (26-31). These studies all arose from the USA, and used a range of study designs; two cross-sectional evaluations, two RCTs, one cohort and one mixed-methods evaluation. Most were provided in routine clinics (n=4, 66.7%) with the remaining two studies working with children identified as at risk of developmental delay.

Signposting was usually provided in conjunction with some form of structured screening tool, unless there was already a specified need identified (such as developmental delay). This allowed practitioners to identify the services which would be of interest to the families. The quality of these studies was variable, however, most were considered either moderate or strong in both the EPHPP and CASP appraisals. The efficacy of signposting was found to be very variable with individual study estimates ranging between 20-74%. One single study (31), which was conducted much earlier than the other studies in 1976, was the only study to reach an efficacy of beyond 40% of participants accessing the intended service, this cross-sectional study was considered to be of moderate/low quality. If this study is excluded, the remaining studies (with generally higher methodological quality) have results grouped between 20-40% of families who participated in the intervention accessing the intended linked organisation.

Two studies which were considered to be of high methodological quality, conducted by a single research group, found similar results across different programmes. Garg et al 2007 (26) showed that signposting following screening for social issues resulted in around 18% more families accessing resources than those simply screened for the same problems. Another study by this research group showed an increase of 15% when signposting was delivered in addition to structured screening as opposed to a routine social history taken at a clinic visit (28). This RCT indicated that there was a numbers needed to treat (NNT)) of 1.6 to generate a referral for a social issue, and 6.7 to generate enrolment in a service.

Those accessing community organisations generally reported high satisfaction with the services received, although there were little data recorded on those who did not access the community support following signposting.

Referral

Nearly half of the studies included in the review used referrals to link participants to community resources (27, 29, 32-40). These studies were evenly split in the UK (n=5) and USA (n=6), and were mostly cross-sectional evaluations (n=4) or mixed methods designs (n=4). There was also a RCT, a cohort study and a qualitative evaluation. Most were provided in routine clinics (n=4) or as part of targeted programmes (n=3), but some were for children at risk of developmental delay (n=1), with low incomes (n=1) or involved in health visiting programmes (n=2). Once again, referral was usually accompanied by some form of screening, this was described in various ways in the studies; some used structured questionnaires, whilst others used routine enquiry and broad questions to identify needs.

The quantitative studies were predominantly weak-moderate in nature, however, the qualitative studies were stronger, although fewer in number. Efficacy of referral for achieving engagement with the linked services was estimated to be between 23-54%, with most

results centred around 40-50%. One moderate quality RCT considered referral intervention versus a control of signposting, it estimated an increase in uptake of 17% between the intervention and control arm. The result of this head to head trial is consistent with the pattern observed in our systematic review, where we see a tendency for referral to exceed signposting in rates of successful linking with community organisations. Qualitative data suggested that the coordination and communication of referrals was key and that a good relationship with the referral provider was beneficial for the parent to accept and follow through on the referral.

Facilitation

Eleven studies reporting using a facilitation model to support patients to address social needs. Most were from the USA (n=8), with two from Australia and one based in the UK (27, 35, 41-49). They employed a range of study designs including cross-sectional evaluations (n=4), cohort studies (n=2), mixed-methods designs (n=3) and qualitative evaluations (n=2). This group of studies had the greatest range of settings, which are summarised in Table 3. The methodological quality of these papers was generally considered to be weak or moderate, regardless of the design. However, efficacy estimates were higher ranging from 32-71%. Those studies which had greater methodological quality such as McInnes et al, indicated results around 50-60% (35). The poor methodological quality of most studies could be related to the difficulty in studying more complex interventions, especially as facilitation is often a very individual process. Qualitative results showed that the participants felt the programmes had highly positive impacts; however, practitioners often raised concern over sustainability and the workload created by facilitation. The importance of patient-provider relationships and using an individualised approach were stressed across many studies.

Community Resource Type

Apart from the linking approach, there was no clear pattern of effectiveness of linking families to different types of community resources. All four of the higher quality studies

involved linking with multiple community resources and differential effectiveness by resource type could not be ascertained. There were eight studies with reported linking success rates of over 50% (Table 2), which covered a wide range of community resource types: including related to food and obesity (n=1), financial and welfare benefits (n=2), legal (n=1), and multiple community resources (n=4). Moreover, there was no obvious relationship between success in linking to type of community resource and type of linking approach provided. We found no pattern based on the country of origin of the study in either the effectiveness of the intervention or community resource linked to.

Discussion

Main finding of this study

The key findings of this review show that there is a wide and varied evidence base relating to linking interventions to support families with pre-school children to access community-based resources. There were three key intervention types identified as part of this review, signposting, referral, and facilitation. As the intervention becomes more individualised, tailored and complex, the strength of the evidence relating to that intervention becomes weaker and has greater methodological weaknesses. However, these interventions show greater efficacy in achieving successful linking to the intended destination service or organisation. There were no differences observed by type of community resource with which families were being linked. The majority of the studies were undertaken in the United States and therefore we must recognise the context of the healthcare system in interpreting the data. However, no clear patterns or differences were observed based on the country in which the studies were conducted.

There are a number of factors in addition to these broad intervention types which may influence the effectiveness of linking interventions including relationships between the provider and family, awareness of the local community support landscape and the capacity of the original service to support a tailored and individualised intervention.

What is already known on this topic

A review related to "linking schemes" between healthcare and community resources for patients with chronic conditions was published in 2015 (15). This review found improved health outcomes (depression and anxiety) in those involved in the linking interventions but found little data on how the interventions had been delivered to achieve these results. The review acknowledged that several of the studies included utilised facilitators to provide the linking intervention.

Systematic reviews of social prescribing interventions were identified and the findings demonstrated that there was limited evidence relating to the efficacy of social prescribing (11-14, 50). These reviews utilised a range of different definitions of social prescribing, and acknowledged that no single definition existed. Some broad frameworks for the types of social prescribing interventions were discussed, but the relative efficacy of these was not considered (11). The Centre for Reviews and Dissemination in their evidence review suggested that the focus of future study on this topic should be comparative in design, evaluating when, for whom, and how well social prescribing works (50). Our review attempts to explore this, by considering the relative efficacy of different linking methodologies.

The previous reviews often focussed on studies conducted only in the UK and predominantly included an adult population. The problems identified in these reviews included the evaluative nature of many of the studies identified, with very few publications utilising robust methodologies and providing high quality evidence. The interventions linked to were often tailored to the needs of the individual, such as exercise programmes or art classes. These were very different to the services utilised in the studies identified in this review which were often focussed on wider family circumstances such as income, housing or education (11-14).

What this study adds

To our knowledge, this study is the first systematic review that focuses on social linking interventions with families with pre-school aged children. The findings described are in line with existing evidence relating to social prescribing more generally. We further clarify a typology of linking interventions and show the importance of active linking. Specifically, we show that one-to-one facilitation of supporting families to transition from healthcare services to community-based support services is more effective than passively signposting to services. However, this type of intervention is often poorly studied, with weaker methodological quality due to the complex nature of these interventions and the primarily evaluative nature of the publications which describe them. This was one of the few systematic reviews relating to linking interventions or social prescribing which drew studies from beyond the UK and therefore evidence which would have been excluded from previous studies was included in this review.

Limitations of this study

Whilst this study presents a robust systematic review of linking interventions in families with children under the age of five it is limited by the underlying methodological quality of the studies included in the review. Due to the range of study designs and interventions there was a great deal of heterogeneity in the outcomes reported and no quantitative synthesis could be undertaken. There were no data in relation to on-going participation in community organisations related to linking interventions. This is perhaps not surprising as ongoing participation is likely to be more a function of the organisation and whether it is meeting the family needs – rather than associated with the linking intervention.

This study focussed only on the linking process but it is recognised that other factors are involved in and associated with outcomes related to the social prescribing pathway. A recent realist review (51) identified issues relating to patients' attitudes, expectations and the acceptability of the process as influencing engagement, together with the relationship between patient and prescriber.

The importance of integration of health services with wider social and community support is increasingly being recognised across the world. A 2019 US National Academies of Sciences, Engineering, and Medicine Report sets out "The 5As: Categories for health care activities that facilitate addressing social needs" as: awareness, adjustment, assistance, alignment, advocacy (52). Our findings particularly support the "Assistance" category defined as "activities that reduce social risk by providing assistance in connecting patients with relevant social care resources". But our findings also add more detail to this activity by suggesting that this has to be actively facilitated. Our findings also support the shift in practice across the UK from more passive signposting to developing community support worker or link workers within health and social care settings – e.g. NHS England's Social Prescribing Link Workers and the Scottish Government's Community Link Worker Programme. All these policy and practice initiatives warrant well designed studies assessing health, social, and economic benefits of linking to community resources, which also need to include assessing the effectiveness of different approaches or interventions delivered by community organisations.

Conclusion

This was the first systematic review of the international literature to focus on linking interventions in relation to social prescribing for families with young children to community-based support organisations. We specified a typology of linking methods: from passive signposting to progressively more active interventions of referral and facilitation. While there were limitations in the quality of evidence available, we showed a tendency for more active interventions to be more effective in linking families to community support organisations.

Acknowledgements

References

1.   Bleich SN, Jarlenski MP, Bell CN, et al. Health Inequalities: Trends, Progress, and Policy. Annual Review of Public Health. 2012;33:7-40.
2.   Marmot M, Allen J, Bell R, et al. WHO European review of social determinants of health and the health divide. The Lancet.380(9846):1011-29.
3.   Graham H. Social Determinants and Their Unequal Distribution: Clarifying Policy Understandings. Milbank Quarterly. 2004;82(1):101-24.
4.   Marmot M. Social determinants of health inequalities. The Lancet.365(9464):1099-104.
5.   Allen M, Allen J, Hogarth S, et al. Working for Health Equity: The Role of Health Professionals. London: UCL Institute of Health Equity; 2013.
6.   Bambra C, Gibson M, Amanda S, et al. Tackling the wider social determinants of health and health inequalities: evidence from systematic reviews. Journal of Epidemiology and Community Health. 2009.
7.   Marmot M. Fair Society, Healthy Lives, The Marmot Review. London: The Marmot Review; 2010.
8.   A Plan for Scotland. The Government's Programme for Scotland 2016-17. In: Government S, editor. Edinburgh2016.
9.   Polley M, Fleming J, Anfilogoff T, et al. Making Sense of Social Prescribing. London: University of Westminster; 2017.
10.   Social prescribing and community-based support: Summary Guide. In: England N, editor. 2019.
11.   Pescheny JV, Pappas Y, Randhawa G. Facilitators and barriers of implementing and delivering social prescribing services: a systematic review. Bmc Health Services Research. 2018;18(1):86-.
12.   Bickerdike L, Booth A, Wilson PM, et al. Social prescribing: less rhetoric and more reality. A systematic review of the evidence. Bmj Open. 2017;7(4):e013384.
13.   Polley M, Bertotti M, Kimberlee R, et al. A review of the evidence assessimg impact of social prescribing on healthcare demand and cost implications. University of Westminster; 2017.
14.   Kinsella S. Social Prescribing. A review of the evidence. Wirral Council Business and Public Health Intelligence; 2015.
15.   Mossabir R, Morris R, Kennedy A, et al. A scoping review to understand the effectiveness of linking schemes from healthcare providers to community resources to improve the health and well-being of people with long-term conditions. Health and Social Care in the Community. 2015;23(5):467-84.

16.   Burns J, Conway DI, Gnich W, et al. Linking families with pre-school children from healthcare services to community resources: a systematic review protocol. Systematic Reviews. 2017;6(1):50.
17.   Moher D, Liberati A, Tetzlaff J, et al. Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. Plos Medicine. 2009;6(7):e1000097.
18.   Higgins J, Green S. Cochrane Handbook for Systematic Reviews of Interventions 5.1.0 (updated March 2011) ed: The Cochrane Collaboration; 2011 2011.
19.   Systematic Reviews CRD's guidance for undertaking reviews in health care: Centre for Reviews and Dissemination; 2009 2009.

20.	Godin K, Stapleton J, Kirkpatrick SI, et al. Applying systematic review search methods to the grey literature: a case study examining guidelines for school-based breakfast programs in Canada. Systematic Reviews. 2015;4(1):138.

21.	Project EPHP. Quality Assessment Tool for Quantitative Studies 2009 [Available from: http://www.ephpp.ca/tools.html.

22.	Armijo-Olivo S, Stiles CR, Hagen NA, et al. Assessment of study quality for systematic reviews: a comparison of the Cochrane Collaboration Risk of Bias Tool and the Effective Public Health Practice Project Quality Assessment Tool: methodological research. Journal of Evaluation in Clinical Practice. 2012;18(1):12-8.

23.	Thomas BH, Ciliska D, Dobbins M, et al. A Process for Systematically Reviewing the Literature: Providing the Research Evidence for Public Health Nursing Interventions. Worldviews on Evidence-Based Nursing. 2004;1(3):176-84.

24.	Dixon-Woods M, Sutton A, Shaw R, et al. Appraising qualitative research for inclusion in systematic reviews: a quantitative and qualitative comparison of three methods. Journal of Health Services Research & Policy. 2007;12(1):42-7.

25.	Popay J, Roberts H, Sowden A, et al. Guidance on the conduct of narrative synthesis in systematic reviews: A product from the ESRC Methods Programme2006.

26.	Garg A, Butz AM, Dworkin PH, et al. Improving the management of family psychosocial problems at low-income children's well-child care visits: The WE CARE project. Pediatrics. 2007;120(3):547-58.

27.	Garg A, Sarkar S, Marino M, et al. Linking urban families to community resources in the context of pediatric primary care. Patient Education and Counseling. 2010;79(2):251-4.

28.	Garg A, Toy S, Tripodis Y, et al. Addressing Social Determinants of Health at Well Child Care Visits: A Cluster RCT. Pediatrics. 2015;135(2):E296-E304.

29.	Shannon P, Anderson PR. Developmental screening in community health care centers and pediatric practices: an evaluation of the Baby Steps Program. Intellectual and developmental disabilities. 2008;46(4):281-9.

30.	Bottino CJ, Rhodes ET, Kreatsoulas C, et al. Food Insecurity Screening in Pediatric Primary Care: Can Offering Referrals Help Identify Families in Need? Academic Pediatrics. 2017;17(5):497-503.

31.	Bauman KE, Coulter M. Design and test of a system for tracking referrals. Public Health Reports. 1976;91(6):521-5.

32.	Greasley P. Welfare advice in general practice: a resource for community nurses. British Journal of Community Nursing. 2005;10(8):368-72.

33.	Ross MK, de Caestecker L, Sinclair M, et al. The Starting Well Health Demonstration Project. Journal of Primary Prevention. 2005;26(3):205-20.

34.	Ley CE, Copeland VC, Flint CS. Healthy Start Program Participation: The Consumers' Perspective. Social Work in Public Health. 2011;26(1):17-34.

35.	McInnes K, Burton E. Sure Start Haercliffe, HIghridge and Withywood Evaluation of the Family Link Worker Service. Barnardos. 2004.

36.	Morrow G, Malin N, Jennings T. Interprofessional teamworking for child and family referral in a Sure Start local programme. Journal of Interprofessional Care. 2005;19(2):93-101.

37.	Naven L, Withington R, J E. Maximising Opportunities: final evaluation report of the Healthier, Wealthier Children (HWC) project. Glasgow Centre for Population Health. 2012.

38.	Silverstein M, Mack C, Reavis N, et al. Effect of a clinic-based referral system to head start: a randomized controlled trial. JAMA: Journal of the American Medical Association. 2004;292(8):968-71.

39.	Stetler K, Silva C, Manning SE, et al. Lessons Learned: Implementation of Pilot Universal Postpartum Nurse Home Visiting Program, Massachusetts 2013-2016. Maternal and Child Health Journal. 2018;22(1):11-6.

40.   Klein MD, Beck AF, Henize AW, et al. Doctors and Lawyers Collaborating to HeLP Children -- Outcomes from a Successful Partnership between Professions. Journal of Health Care for the Poor & Underserved. 2013;24(3):1063-73.

41.   Purcal C, Muir K, Patulny R, et al. Does partnership funding improve coordination and collaboration among early childhood services? - Experiences from the Communities for Children programme. Child & Family Social Work. 2011;16(4):474-84.

42.   Knowles M, Khan S, Palakshappa D, et al. Successes, Challenges, and Considerations for Integrating Referral into Food Insecurity Screening in Pediatric Settings. Journal of Health Care for the Poor and Underserved. 2018;29(1):181-91.

43.   Ariza AJ, Hartman J, Grodecki J, et al. Linking Pediatric Primary Care Obesity Management to Community Programs. Journal of Health Care for the Poor and Underserved. 2013;24(2):158-67.

44.   Garg A, Marino M, Vikani AR, et al. Addressing Families' Unmet Social Needs Within Pediatric Primary Care:The Health Leads Model. Clinical Pediatrics. 2012;51(12):1191-3.

45.   McFarlane J, Wiist W. Preventing abuse to pregnant women: Implementation of a 'Mentor mother' advocacy model. Journal of Community Health Nursing. 1997;14(4):237-49.

46.   McKay FH, McKenzie H. Food Aid Provision in Metropolitan Melbourne: A Mixed Methods Study. Journal of Hunger and Environmental Nutrition. 2017;12(1):11-25.

47.   Roizen NJ, Shalowitz MU, Komie KA, et al. Acquisition of services recommended by a multidisciplinary medical diagnostic team for children under three years of age evaluated for developmental delays. Journal of Developmental & Behavioral Pediatrics. 1996;17(6):399-404.

48.   Taylor C, Mills A, Schmied V, et al. What works to engage young parents into services? Findings from an appreciative inquiry workshop. Contemporary Nurse. 2012;42(2):258-71.

49.   Summers JA, Wall S. Cross referrals between programs for infants and toddlers with disabilities: perceptions of Part C and Early Head Start providers. Infants & Young Children: An Interdisciplinary Journal of Early Childhood Intervention. 2008;21(4):324-33.

50.   Centre for Reviews and Dissemination. Evidence to inform the commissioning of social prescribing. York: University of York; 2015.

51.   Husk K, Blockley K, Lovell R, Bethel A, Lang I, Byng R, Garside R. What approaches to social prescribing work, for whom, and in what circumstances? A realist review. Health Soc Care Community. 2019 Sep 9. doi: 10.1111/hsc.12839

52.   Bibbins-Domingo K. Integrating Social Care Into the Delivery of Health Care. JAMA. 2019;322(18):1763–1764.

Table 1- Summary of Included Studies

Study	Year	Country	Study Type	EPHPP Tool	CASP Tool	Population/ Intervention
Ariza et al.	2013	USA	Cross-sectional	Weak		Children at risk of obesity referred to obesity management programmes using a practice referral coordinator.
Bauman et al	1976	USA	Cross-sectional	Mod/ Weak		Pilot study of a referral tracking system for children attending a Developmental Evaluation Clinic.
Bottino et al	2016	USA	Cross-sectional	Moderate		Routine child clinic, caregivers complete a web-based, self-administered assessment and referral tool. It gives suggested referrals based on answers and could also self-select referrals. Caregivers are given a print out of suggested services.
Garg et al.	2007	USA	RCT	Strong		Routine child clinic referring to multiple community resources. Control group signposted to book of community resources. Intervention group completed pre-visit screening questionnaire on unmet social needs and healthcare provider signposted to community resources based on identified need.
Garg et al.	2010	USA	Cohort	Weak		Routine child clinic referring to multiple community resources. Clinic staff referred families to a Help Desk where volunteers screened for social needs and facilitated access to community based resources
Garg et al.	2012	USA	Cohort	Weak		Routine child clinic referring to multiple community resources. Families given a pre-visit screening questionnaire for social

				🟥		issues and referred to a help desk which facilitated access to community based resources
Garg et al.	2015	USA	Cluster RCT	Strong		Routine child clinic referring to multiple community resources. Control group given usual care, with routine social history to prompt clinician to signpost to community resources. Intervention group were given a pre-visit screening questionnaire on unmet social needs which was reviewed by healthcare provider and signposted to community resources.
Greasley	2005	UK	Mixed-methods	Moderate		Families with a health visitor referred for welfare advice in a general practice setting. Cases closed when advice issues have been addressed.
Klein et al	2013	USA	Cross-sectional	Moderate		Routine child clinic where clinician screens for family needs and refers family to the child HeLP service. A legal advisor works with the family to address needs.
Knowles et al	2018	USA	Mixed-methods	Weak	Mod/Strong	Routine child clinic, self or doctor administered screening for food insecurity. If identified as food insecure, consent gained to pass details to the Benefits Data Trust whose outreach workers would conduct further screening and facilitate referrals.
Ley et al.	2011	USA	Cross-sectional	Weak		Healthy Start Programme referring to multiple community resources. Healthy Start Staff assessed health and social needs, developed a care plan and referred to community resources
McFarlane et al.	1997	USA	Cross-sectional	Weak		Pregnant mothers at risk of domestic violence in a public health clinic referred to an advocacy and education programme.

				(Red)	(Gray)	Identified through screening in ante natal clinic and referred to a domestic violence counsellor.
McInnes et al.		UK	Mixed-methods	Moderate	Moderate	Children enrolled in Sure Start referred to multiple community resources. Family Link workers worked with families to identify unmet needs and facilitated access to community groups and resources.
McKay et al.	2006	USA	Cross-sectional	Weak		Child at risk of developmental disorder referred to multiple community resources. Primary care providers used telephone referral and care coordinators to facilitate access to services.
Morrow et al.	2005	UK	Qualitative		Moderate	Pre-5 child in a deprived area referred to Sure Start services and other community resources. Multi-disciplinary team meetings to discuss referrals required and agree support plans for individual families.
Naven et al.	2012	UK	Mixed-methods	Moderate	Moderate	Families with financial issues referred to money advice service. Early years staff make financial enquiries with the family, if a need is identified a referral is made and the service facilitates access.
Purcal et al	2011	Australia	Mixed-methods	Weak	Mod/Weak	Pre-school children in the community engaging with a number of services. Study aimed to explore how better partnership working could support engagement with services.
Roizen et al.	1996	USA	Cross-sectional	Weak		Child at risk of developmental disorder referred to social and educational resources. Screening and diagnosis by a multi-

						disciplinary team, family conference to agree services needed and facilitation to access agreed services.
Ross et al.	2005	UK	Cross-sectional	Moderate		High intensity health visiting programme with a multi-disciplinary team including a community support facilitator. Project for pre5's in a deprived area, working with families to set goals and identify how to achieve these.
Shannon et al.	2008	USA	Mixed-methods		Mod/Strong	Child at risk of developmental disorder referred to community resources. Child screened during a clinic visit, outcomes discussed with parent who is then signposted or referred to suitable community resources.
Silverstein et al.	2004	USA	RCT	Moderate		Low income, general population referred to Head Start Programme. Control group signposted to Head Start by healthcare provider, intervention group signposted, plus a formal referral sent.
Stetler et al	2018	USA	Cross-Sectional	Weak		Welcome Family Universal Health Visiting. Nurse completed screening during home visits, offers advice, education and referral to services.
Summers et al	2008	USA	Qualitative		Mod/ Strong	Study exploring shared working and collaboration between different services working with children with potential developmental delay. Helps parents navigate services and empower them to access care.

| Taylor et al | 2012 | Australia | Qualitative | | Weak | Multi stakeholder workshop exploring what the barriers and facilitators are to engaging with services and developing strategies to address them. |

Table 2: Themes and main findings identified from studies

Study	Intervention Theme(s) Identified	Key Findings of Study
Ariza et al.	Facilitation	64.7% success in linking interested individuals to services. Qualitative results showed high satisfaction from practitioners but a concern regarding stability and sustainability.
Bauman et al	Signposting	74% of services recommended to families were taken up. This was from a small sample of 61 participants.
Bottino et al	Signposting	At 1 month follow up there was a success in linking participants of 29%. Screening was for food insecurity
Garg et al. (2010)	Facilitation, Signposting, Referral	32.2% success in linking participants to services but a very low uptake of linking service (6%) Variable methods of linking used.
Garg et al. (2012)	Facilitation	50% success in accessing services at 6 month follow up. High use of linking service by practitioners within the health service.
Garg et al. (2007)	Signposting	Control arm (screening only)- success rate was 2.2% Intervention arm (screening+ signposting)- success rate was 20% All participants happy to complete screening exercise.
Garg et al. (2015)	Signposting	At 12month follow up: Intervention (structured screening + signposting)- 39% success Control (routine social history)- 24% success NNT to generate referral=1.6, to generate enrolment= 6.7

Greasley	Referral	Referral to welfare advice, of 112 participants there were 101 complete cases. All cases complete had successful outcomes.
Klein et al	Referral	1614 referrals made, 89% of these had positive outcomes. The model used the whole staff in the practice which was seen as a positive element to the programme. There was a high uptake for the intervention.
Knowles et al	Facilitation	Success rate was 20.7% Qualitative data explored barriers and facilitators to providing the facilitation intervention.
Ley et al.	Referral	Self reported enrolment with linked service was 50% in the follow up survey, however response rates were low 202 or 1000 contacted.
McFarlane et al.	Facilitation	100 women studied, which generated 870 referrals. Ranged from 0-32 referrals, mean 8 per participant. Relationships between service users and staff vital. Very challenging group to work with.
McInnes et al.	Facilitation, Referral	52% success in linking to services. Level of success varied by case, showed the difference in working with individual families. Staff members were satisfied with the link role as part of their role.
McKay et al.	Facilitation	43% success in linking, although uptake of intervention unclear from survey. Multiple episodes of contact were required for a referral o be carried out suggesting high intensity of intervention.
Morrow et al.	Referral	Staff involved in the programme found that referral meetings where support for families was agreed were useful. They recognised that central coordination was required to avoid duplication of error.
Naven et al.	Referral	54% success in linking to services, although this ranged by different areas in the study 42-70%. Case studies recognised some limitation with signposting and highlighted how the referral model could address these issues.

Purcal et al	Facilitation	Under the partnership working programme there was increased active referrals of families and greater involvement with families. There were concerns over competition for funding and the high work burden created by facilitation processes.
Roizen et al.	Facilitation	Success rates ranged between 38-71% dependent on the type of service being linked to.
Ross et al.	Referral	34% of referrals made in the service were to community resources. There was a 23% drop out in the programme. Qualitative data highlighted the importance of coordination, access to staff and the relationships they developed with clients.
Shannon et al.	Signposting, Referral	A range of referrals were provided to participants. There was high satisfaction with the intervention provided.
Silverstein et al.	Referral	Intervention arm (referral) showed 17% higher success rate than control arm (signposting). There was a 75% retention rate to the study.
Stetler et al	Referral	There was 23% success in accessing service at 2-3weeks follow-up. Uptake of the health visiting service was low compared to the number of live births.
Summers et al	Facilitation	69 people were involved in qualitative focus groups. The data provided explored the barriers and facilitators to providing a facilitation intervention. Positive elements included smoothing the transition for parents, empowering parents, identifying concerns early and supporting parents. Negative elements were complex referral processes, difference of opinion and emotional barriers, not knowing what is available and not seeing facilitation as part of their role.
Taylor et al	Facilitation	Qualitative study exploring the barriers and facilitators to young parents accessing services. Indicated the importance of flexibility, accessibility and reliability of the service providers. Establishing relationships was important, as was using an individual approach to delivering the service.

Table 3: Settings of studies utilising a facilitation intervention

Setting	Number of Studies	Description of Studies
Multi-Agency Community based programmes	2	McInnes et al- families involved in the Sure Start programme Purcal et al- families involved in multi-agency partnership programme
Routine child health clinics	3	Garg et al (2010)- routine clinic, multiple issues screened for Garg et al (2012)- routine clinic, multiple issues screened for Knowles et al- routine clinic, screening for food insecurity
Children at risk of developmental delay	3	McKay et al- children at risk of developmental delay, use of care coordinators Roizen et al- children at risk of developmental delay, use of multi-disciplinary planning Summers et al- children at risk of developmental delay, qualitative study
Other specific risk groups identified	3	Ariza et al- children identified at risk of obesity McFarlane- pregnant mothers at risk of domestic violence Taylor et al- Young parents

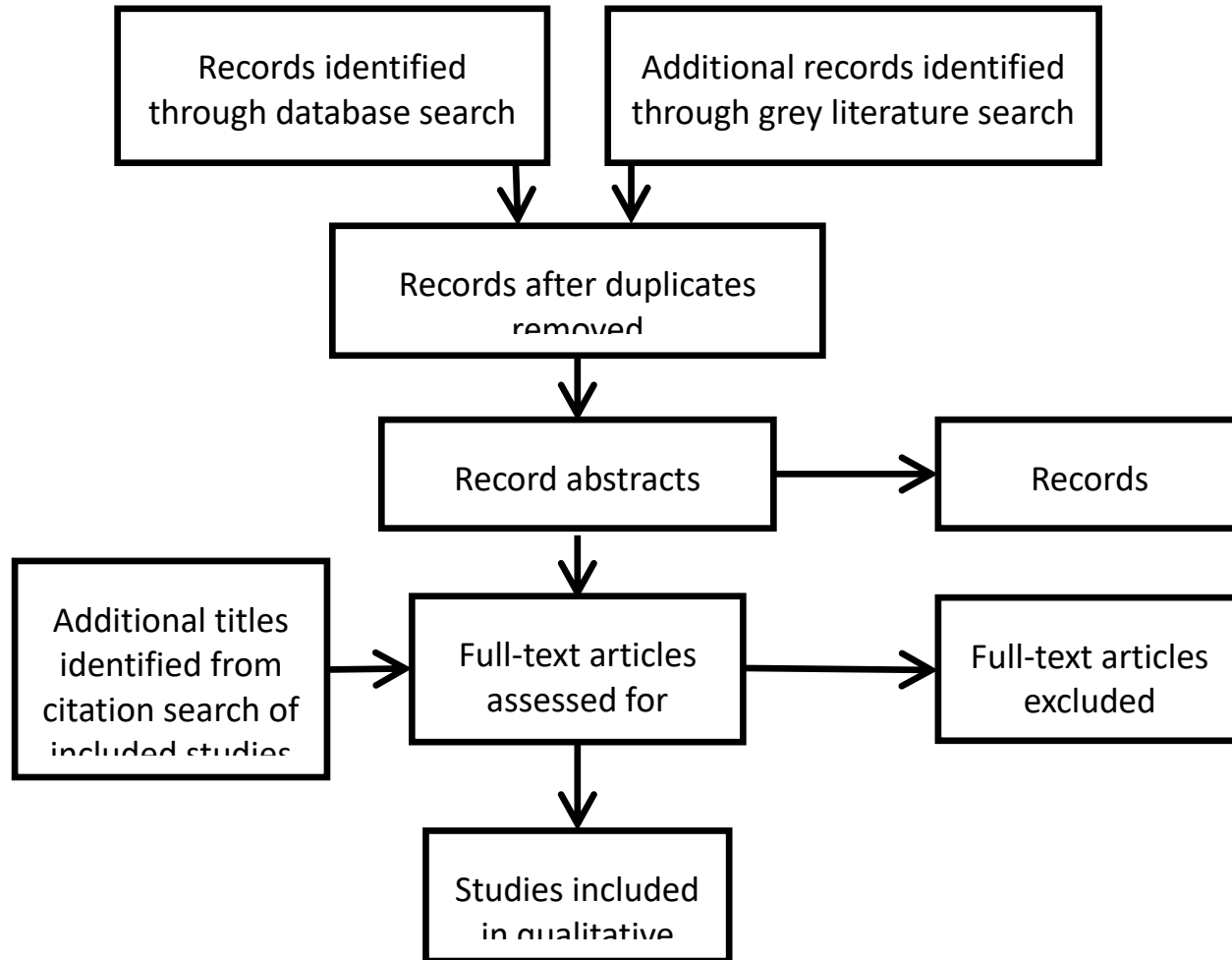Figure 1: PRISMA flow diagram for included studies

Figure 2: Definition of key themes identified from data extraction.

Signposting

- The provision of information regarding a potential service/community based activity on which the parent/carer must act to access the service. Examples could include providing a leaflet about services, or giving a phone number, date or time of a relevant community group.

Referral

- Where a healthcare provider sends information about a patient or thier paent or carer to the service being requested. Examples include making phone call, writing a letter or completing a standard referral template provided by the service being requested.

Facilitation

- An active process where by an individual within the healthcare service works with a family to enable them to access the requested service. Support is provided on a one-to-one or small group basis and is tailored to the needs of the individual family. This can include making appointments on their behalf, accompanying them to the service or working out practical arrangements such as transport.