MASTERS BY RESEARCH

An evaluation study to investigate recruitment into social prescribing interventions and explore the skills sets of Link Workers in dealing with complex case referrals.

Makanjuola, Abraham

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An evaluation study to investigate recruitment into social prescribing interventions and explore the skills sets of Link Workers in dealing with complex case referrals.

Abraham Makanjuola

Student ID: 5004140024

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School of Health Sciences, College of Human Sciences, Bangor University

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List of Abbreviations

ASIST - Applied Suicide Intervention Skills Training

ASSIA - Applied Social Sciences Index and Abstracts

BTEC – Business and Technology Education Council

CAB – Citizen's Advice Bureau

CASP - Critical Appraisal Skills Programme

CBI - Community Based Intervention

CCBC - Collaborative Community Based Care

CCG – Clinical Commissioning Groups

CDW - Community Disability Worker

CHW - Community Health Worker

CHV - Community Health Volunteer

CLHW - Community Lay Health Worker

CMHW - Community Mental Health Worker

CINAHL - Cumulative Index to Nursing and Allied Health

COVID 19 – Coronavirus disease 2019

CPD – Continuing Professional Development

CVM – Contingent Valuation Method

ED – Emergency Department

GBP – Great British Pounds

GCSE - General Certificate of Secondary Education

GDPR - General Data Protection Regulation

GLA - Greater London Authority

GP – General Practitioner

GRADE - Grading of Recommendations, Assessment, Development and Evaluations

HLP - Healthy London Partnerships

HNC – Higher National Certificate

HND – Higher National Diploma

ILM - Introduction to line management

LSOA - Lower Super Output Areas

LW – Link Worker

NERS - National Exercise Referral Scheme

NHS – National Health Services

NICE - National Institute for Health and Care Excellence

NIHR - National Institute for Health Research

NOAA - National Oceanic and Atmospheric Administration

NVQ – National Vocational Qualification

OT - Occupational Therapy

PCN - Primary Care Network

PICO - The Population, Intervention, Comparator, and Outcome Framework

PRISMA – Preferred Reporting Items for Systematic Reviews

SM - Self-management training

SP – Social Prescribing

SR – Systematic Review

UK – United Kingdom

VCSE – Voluntary, community, and social enterprise

WCVA - Wales Council for Voluntary Action

WHO – World Health Organisation

WIMD - Welsh Index of Multiple Deprivation

WSSPR - the Wales School for Social Prescribing Research

WTP – Willingness to Pay

Chapter 1 - Introduction

1.1 Background

There are increasing concerns regarding the financial state of the National Health Service (NHS) and achieving financial efficiency is paramount (NHS England, 2017a). General Practitioners (GPs) are often seen as the gatekeepers of secondary care referrals and as a result, many patients arrive at the GPs surgery with issues that cannot be remedied with a standard pharmaceutical prescription (Gerada, 2011). Secondary care is the term in healthcare whereby patients are referred to specialist treatment from health professionals by health professionals within primary care (NHS England, 2017b). These issues are often linked to social factors such as isolation, housing, and financial issues (Healthy London Partnership, 2019). GPs make referrals based on symptoms exhibited by patients and the effects of social issues are not always apparent which results in the unseen issues left untreated (Hernandez and Blazer, 2006; *General practice (GP) Health Careers*, 2020). This issue is then exacerbated by the 10 minute time constraint that GPs have to see patients, which is not sufficient to delve into a patient's complex needs (Oxtoby, 2010). Evidence examining Social Prescribing (SP) identified that 77% of patients enjoy better wellbeing, a 33% reduction in GP attendances and 50% fewer Emergency Department (ED) visits (Healthy Dialogues, 2018). Furthermore, SP alleviates immediate time, infrastructural and monetary pressures, which include hospitals experiencing issues such as high number of ED re-attendances, high numbers of discharge delays as a result of non-medical issues, high

numbers of non-elective readmissions and high numbers of ED users who have chronic long term conditions or low to moderate mental health issues (Torjesen, 2016; Healthy Dialogues, 2018).

Chapter outline

This chapter will explore the background of SP including how service users access interventions, the different types of intervention and the role of the link worker. In addition, SP development and implementation will be outlined on a global level and then on a UK level including different strategies and policies to improve SP deliverance in the UK.

1.2 What is Social Prescribing?

Social Prescribing (SP) refers to the referral of patients to local non-medical interventions within health, the goal of social prescribing is to empower patients to take responsibility for their own health (Polley, 2017). These referrals come from a range of sources such as; GP surgeries, pharmacies, voluntary and community sectors and self-referrals. SP takes place in primary and secondary care networks and also Clinical Commissioning Groups (CCGs) (Polley, 2017). In the United Kingdom (UK) the Bromley by Bow Centre, London, is the most established of the SP programmes, dating back to 1985 (Davis-Hall, 2018). The seminal practices of SP were documented in the 1970s, at this time this practice was known as 'service brokering', whereby former prison inmates who were on probation were provided with a means of reintegrating into society by referral from their probation officer to different charities and services (Alarid, Cromwell and Carmen, 2007). SP is growing in prominence and has become one of the primary focuses of the NHS. SP addresses socio-economic and environmental issues i.e. social isolation, depression, housing and finances (NHS England, 2019c). There is evidence that SP can improve the wellbeing of service-users that frequently visit the GP resulting in fewer visits (Lynch and Jones, 2019). This type of patient tailored intervention allows for a more patient specific rehabilitation pathway (Boxford, 2019).

Key SP Definitions

Complex cases is the medical term used to describe patients with multiple chronic health conditions such as diabetes, heart failure, and depression (Moffatt *et al.*, 2017). Having

chronic health conditions can have adverse effects on a patient's health and requires a personalised approach to health that is not typically available in primary care (Heyworth *et al.*, 2009; Moffatt *et al.*, 2017)

Personalised Care – Personalised Care refers to the NHS initiative whereby patients have agency over how their care is delivered (NHS England, 2021).

Primary Care Networks – clusters of different sectors that work together to deliver patient care outside of a hospital setting (NHS England, 2021).

Access to Social Prescribing interventions

A typical referral process would follow: a GP referral to the practice Link Worker (LW), following consultation the LW would prescribe the appropriate intervention to the patient and the patient would act upon the prescription received and through the process of co-producing via a number of progress meetings until the predetermined outcome is achieved. General SP is inherently non-exclusive and caters to individuals aged 18 years and over (NHS: Coventry and Rugby Clinical Commissioning Group, 2020). However, the type of SP intervention prescribed would differ from patient to patient; subject to their needs e.g., exercise referral would typically be prescribed to a patient who has some form of chronic physical condition (Husk *et al.*, 2020).

There are different types of access and referral methods in SP which are listed below (Brandling and House, 2007) :

1. Self-referral: where a patient aware of SP interventions directs themselves to the appropriate LW or directly to the intervention itself.
2. Active Signposting: referral from a PCN i.e. a GP or Physiotherapist identifies a potential issue and directs the patient to a LW or SP intervention
3. Access to SP via a LW – e.g., where a LW is based in a GP surgery
4. Referral from non PCNs i.e., Citizens Advice Bureau, local people signposting in a community

Categories of Social Prescribing interventions

SP interventions are multifaceted and take a plethora of different forms for treating the social determinants of health. An outline of successful SP interventions is provided below.

Arts on Prescription

Arts on Prescription is an SP intervention using a range of cultural activities such as museum visits, to dance workshops, painting and drawing workshops, poetry and community choirs. Evidence on the use of arts as a SP intervention has identified that 82% of participants benefiting from a better state of wellbeing as well as a 37% decrease in GP appointments and a further 27% reduction in hospital visits (All-Party Paliamentary Group on Arts Health and Wellbeing, 2017)

Community-based intervention

Community-Based SP intervention is an upstream self-sustaining means of SP intervention, LWs source and train members of local communities to identify individuals that would benefit from SP intervention and then signpost activities for that individual (Pfeiffer *et al.*, 2011). Upstream intervention describes interventions that combat socioeconomic factors, which later results in improved health (Williams *et al.*, 2008; National Collaborating Centre for Detreminants of Health, 2020). Research conducted into the effectiveness of Community-based intervention found that Community-based intervention was effective in reducing health inequalities when members of the community are involved in intervention design (South, 2015; NICE, 2016). Many Voluntary Community, and Social Enterprises (VCSEs) such as for example, the Social Enterprise Solutions initiative has been found to reduce social problems. Social Navigators were based in GP surgeries in the Blackpool area and GP patients could voice their concerns and worries to the Social Navigator and have their concerns and worries heard (Social Enterprise Solutions, 2021). This type of initiative reduces the time burden on GPs. There are over 160,000 VCSEs within the UK, which could be possibly in the future link to SP and improve civil society.

Eco therapy

Eco therapy as a SP intervention which seeks to improve an individual's mental state through activities outside in the natural environment, for example nature walks in green

spaces and the cultivation of allotments and private gardens (Summers and Vivian, 2018). Research into the effect of the environmental therapies on mental health applied a mixed-method literature review. The mixed-method literature review found that green-walking groups can positively impact one's self-esteem and mood (Swinson, Wenborn and Sugarhood, 2020). Green-walking involves walking in green spaces to improve one's mental and physical health (*NHS Forest*, 2020).

Education based interventions

Certain patients suffer from mental health issues as a result of a lack of upwards social mobility, this may be due to a dearth in knowledge of local initiatives, environmental factors, or financial constraints i.e. low income and a large number of dependents. Education based intervention informs patients on how to improve their socioeconomic situation by accessing resources that are pertinent to an agreed reality between patient and LW (Burrows *et al.*, 2011). Education based intervention has been shown to improve the mental health of service-users and yield positive secondary outcomes such as debt reduction and improved finances as a result of improved mental health. For example, support from Citizen's Advice Bureaus

(CAB) to address financial concerns reduces people's anxiety and stress, making them to feel more in control and empowering them to make good choices (Carr, 2011).

Exercise referral

Exercise referral is the branch of SP intervention where patients are given exercise-based prescriptions. Exercise referral prescriptions range from walking football, to swimming, Nordic walking, falls prevention and gym memberships. The Welsh National Exercise Referral Scheme (NERS) is a Welsh Government funded initiative which uses physical activity in its SP intervention (Welsh Local Government Association (WLGA), 2020). The primary objective of NERS is to improve the patient's physical state of health through a given intervention. As a result of an improved physical state, patients can experience less daily discomfort and pain which subsequently results in an improved mental state (Murphy *et al.*, 2010; Rowley *et al.*, 2018). Research into a community hub in North Wales conducting exercise referral intervention for individuals with chronic conditions applied a Social Return on Investment (SROI) approach. The SROI analysis found that the additional social value generated as a result of the exercise referral intervention produces added social value at an individual and societal

level. For every £1 invested into the exercise referral intervention, £5.07 of social value was generated (Jones *et al.*, 2020).

Social Prescribing activity during the COVID 19 pandemic

During the COVID 19 pandemic, SP deliverance had to undergo a shift in mode of delivery; Social distancing and nationwide/local lockdowns meant that LWs had to readjust their deliverance of SP and how they interacted with individuals in their caseload (Tierney, Mahtani and Turk, 2020). Due to social distancing guidelines, LWs were not able to meet in person for consultations and other activities (NHS England, 2020a). Ordinarily, SP intervention is conducted face to face between the service-user and their LW. These adjustments included, assisting vulnerable individuals in accessing food banks, telephone meetings, online delivery of an intervention and postal support for service-users (Melam and Sanderson, 2020).

The role of the Social Prescribing Link Worker

A link worker is a salaried individual whose role it is to assist individuals to navigate support services within local communities, through social prescribing. The titles used to describe the roles can vary and can include “Community Connector”, “Local Asset Coordinator” and “Exercise Referral Instructor”. Although titles often vary, the core roles remain predominantly similar. Link workers are typically funded by the NHS, local authorities and in some cases charities (Polley, 2017).

LWs conduct an initial consultation in order to outline obstacles, desired outcomes and a personal rehabilitation plan (Personalised Care Group, 2019a). The primary remit of a LW is active signposting; this consists of finding the relevant interventions for the patient which contributes to the agreed personalised rehabilitation plan. LWs are expected to stay abreast of activities and programmes within their local area in order to effectively signpost to patients. LWs will often have large caseloads and LWs and patients work collaboratively, enabling patients to empower themselves and combat potential issues in the future. Although this outcome would ostensibly be the end of the link worker patient contact, link workers often continue to reach out to former patients for progress reports (sometimes after 6 months) (Healthy Dialogues, 2018).

The five key responsibilities outlined in an exemplar LW job description in the Social prescribing link workers: Reference guide for primary care networks – Technical Annex Report (Personalised Care Group, 2019b) are as follows:

1. Working under the direction of a GP along with receiving referrals from a number of different agencies
2. Providing bespoke support to individuals and their friends and relatives to manage their health and wellbeing
3. Working with a variety of different people and communities in order to ameliorate the strengths and capabilities of local communities
4. Working to co-coproduce sustainable endeavours with a range of partners to support local voluntary, community and social enterprise organisations
5. LWs will have a role in informing staff (both clinical and non-clinical) in their Primary Care Network (PCN) about which services are available

Social Prescribing's overlap with existing intervention

Similar to SP, Occupational Therapy (OT) seeks to assist individuals in reducing barriers which prevent the individuals from living an autonomous life and engaging in daily activities which matter to the individuals (Royal College of Occupational Therapists, 2021). OT adopts a holistic approach, assessing the physical and mental wellbeing of an individual. Similar to LWs Occupational Therapists will assess any issues preventing individuals leading their life, the therapist and the individual will collaboratively devise a personalised care plan, and the individual will follow the interventions within the plan until their pre-determined goals are reached (Royal College of Occupational Therapists, 2021). However Occupation Therapists do not engage in the signposting that LWs do (Royal College of Occupational Therapists, 2021).

Conversely, OT caters to all ages whereas SP is for individuals 16 years and above. Unlike in SP, in order to become an Occupational Therapist, a BSc in Occupational Therapy is required (Wood, 2021). OT has been posited as a complementary and supporting piece to SP intervention for individuals.

1.2 Strategies and policies focused on Social Prescribing

Globally SP interventions have developed independently since the 1970s. Details of SP interventions from around the globe can be found in Appendix A.

In the UK, the NHS has made SP one of its focal points going forward which we be expounded upon in this section. Table 1 provides an overview of the most pertinent regional and national strategies and policy reports which support the provision of SP within their respective remits the below table takes a UK centric approach to SP strategy. Further details about SP policies among the devolved nations of England, Northern Ireland and Scotland can be found in Appendix B, whilst Welsh policy documents will be outlined in this chapter.

Table 1 The main Social Prescribing Policy documents for the UK

AUTHOR	YEAR	POLICY DOCUMENT	DESCRIPTION
SCOTTISH GOVERNMENT DEVELOPMENT CENTRE FOR MENTAL HEALTH	2007	Developing Social Prescribing and Community Referrals for Mental Health in Scotland	A report outlining how Scotland planned to implement SP into primary care practice
NHS ENGLAND	2016	General Practice Forward View	A report written by the Royal College of General Practitioners (RCGP) detailing ways to improve the deliverance of care by PCNs and GPs, including through SP and the voluntary sector
DEPARTMENT OF HEALTH OF NORTHERN IRELAND	2016	Health and Wellbeing 2026: Delivering Together	A ten year strategy for Health Care in Northern Ireland outlining changes in primary care, community and prevention, including SP initiatives
SCOTTISH GOVERNMENT	2018	Active Scotland Delivery Plan	A strategy outlining how the Scottish government plans to encourage SP initiatives so that the Scottish population more active and resilient

AUTHOR	YEAR	POLICY DOCUMENT	DESCRIPTION
DEPARTMENT FOR DIGITAL, CULTURE, MEDIA AND SPORT	2018	A connected society: a strategy for loneliness (Loneliness strategy)	This strategy outlines how the government will combat loneliness in society through the of SP across the country
NHS ENGLAND	2019	NHS Long Term Plan	A plan outlining how the NHS will ensure that there will be SP link workers within the primary care networks
GREATER LONDON AUTHORITY, NHS ENGLAND	2019	Next Steps For Social Prescribing	This strategy outlines how SP will be rolled out to the most vulnerable Londoners by 2028
DEPARTMENT FOR ENVIRONMENT, FOOD AND RURAL AFFAIRS (DEFRA)	2020	Green Social Prescribing Project	A project seeking to address mental health issues through Green SP intervention

Wales

Table 1 details the strategies and policies that encourage the development of SP in the devolved nations of the UK. In this current section, the Welsh Government's plans and policies in support of SP implementation in the future will be outlined as this Masters by Research was undertaken within the context of Wales.

In Wales, the National Assembly for Wales announced the Social Services and Wellbeing Wales Act in 2014 (National Assembly for Wales, 2014). This Act focuses on the reformation of social services legislation through improvement of vulnerable individuals via collaboration and personalised care plans. The goals of this act mirror the underpinning tenets and objectives of SP interventions (Care Hub May, 2018). The Social Services and Wellbeing Wales Act 2014 is a Welsh parliamentary Act that prioritises a patient tailored deliverance of care; promoting independence and long term health and wellbeing *(Social Services and Wellbeing Wales Ac*t, 2014).

In 2015, the Well-being of Future Generations Act (Welsh Government, 2015b) was announced by the National Assembly for Wales. This act stipulates that different public entities (including local authorities, emergency services, Sports Council of Wales and Public Health Wales NHS Trust) must consider the long-term ramifications of their actions to ensure a better future for the public. The act outlines five means of operating within the core principles of the Well-being of Future Generations Act, via collaboration, prevention, integration, involvement and looking long-term.

Taking Wales Forward (*Taking Wales Forward*, 2016) is a five year strategy to deliver improvements in Welsh citizen's lives, this strategy has four sub strategies in which SP features in the Healthy and Active sub strategy for mental health and wellbeing. Prosperity for All (2017) is a Welsh Government strategy that highlights SP in its plans for improving public health in Wales (Welsh Government, 2017). The Welsh Government stated their hopes to feature SP intervention in the treatment of mental health issues, in building local communities by promoting better health and wellbeing, and increase the workforce working in community health.

Scotland's primary SP focuses are the widespread improvement of mental health and wellbeing, and getting the population physically active as an anchor in preventative care (Royal College of Occupational Therapists, 2021). Scotland is the only nation of the four devolved nations to place this specific emphasis on physical activity to improve mental resilience (NHS Health Scotland, 2016). Scotland relies on multiple approaches to engage individuals in SP in order to improve mental health which include: active signposting, primary care referrals for those experiencing poor mental health and referrals to physical activity (Lejac, 2021).

England primarily delivers SP via referral from GPs to LWs out of a GP surgery and via community asset based referral, England places specific importance on the individual's involvement in how their care is delivered, this is known as personalised care (Gaye Jackson, 2016). Reduction of the effects of loneliness is high on the agenda for the NHS England and the English government (Gaye Jackson, 2016).

Northern Ireland places specific emphasis on a community led approach to SP in order to improve health outcomes and reduce inequalities, by improving the health and wellbeing of

individuals living in rural areas by helping them to access third sector organisations (The Department of Health Northern Ireland, 2016).

Wales employs multiple models for SP deliverance to improve the health and wellbeing of the Welsh populace, such models include LWs based in GPs surgeries, self-referral and referral to the third sector which includes charity and voluntary organisations (Health and Observatory, 2017).

All four of the devolved nations see their respective approaches as a means to reduce the burden of GPs and other primary healthcare professionals, LWs placed to signpost within the GPs surgeries is common amongst the SP strategies of the four devolved nations and patient autonomy is also primordial amongst the four SP approaches. The thirds sector is featured in the four devolved nations however the magnitude of the third's sectors role within each approach varies, Northern Ireland place a greater emphasis on SP deliverance from the third sector than England. Similarly Scotland places the greatest emphasis on the mental health of the wider community and on physical activity also.

Elemental software

In October of 2020, The Betsi Cadwaladr University Health Board in North Wales committed to the roll out of the SP software Elemental in order to improve SP intervention across North Wales (Elemental Social Prescribing Software & Consultancy, 2020b, 2020a). In this section, the Elemental software uses within SP intervention will be explained.

Elemental Software is a case referral tool, which allows LWs to digitally manage and track cases. Often, LWs can manage up to 250 cases per year (NHS England, 2019b). The features of the software include: a register to track the attendance of patients, signposting to appropriate interventions, and health impact measurement tracker (*Elemental Social Prescribing Platform*, 2020).During the COVID-19 pandemic 49% of LWs surveyed highlighted that their greatest concern on to how to implement SP in local communities was impact measurement, i.e. understanding which interventions are most effective (Elemental Social Prescribing Software & Consultancy, 2020c). Other concerns noted included how to organise interventions that with social distancing, the inability to get access to their case referrals, and understanding where the dearth is i.e., provision of new interventions (Elemental Social Prescribing Software & Consultancy, 2020c). Elemental allowed LWs to

identify at risk and vulnerable cases during the pandemic, then share their case files with the relevant organisations e.g., Liferooms, a NHS service that allows service users to educate themselves about community assets.

1.3 Development of this Master's by Research project

This Masters by Research thesis will describe a mixed-method study to investigate recruitment into social prescribing interventions, and to explore the qualifications and skills of link workers in dealing with complex case referrals. This mixed-method study will provide new insight about the LW skillset and future LW training needs from multiple perspectives of those commissioning and delivering SP interventions.

Aim of the study

The aim of this study was to investigate recruitment into social prescribing interventions and explore the skills sets of LWs in conducting their role.

Objectives of this study

1. To identify current LW skills mix.
2. To identify skills required by LW to further enhance their role.
3. To develop guidance for SP training pathway leading to quality improvements.

Thesis outline

Chapter 2 of this thesis will present the research design for this study and will outline the mixed-methods research approach applied and will include the ethical approval.

Chapter 3 will present the Systematic Review results, including an outline of the key words search strategy, inclusion and exclusion criteria, and quality evaluation of included studies.

Chapter 4 will present the semi-structured interview schedule, sample criteria and methods and qualitative interview results.

Chapter 5 will present the LW questionnaire piloting methods, sample criteria, questionnaire dissemination and questionnaire results.

Chapter 6 will review the study aims and objectives, review the methodologies employed in this study, discuss the findings, draw parallels from wider sources and theory, outline limitations of this study, and provide recommendations for future research.

Chapter 2 – Research Design

2.1 Introduction

This purpose of this chapter is to outline the research design for this Master by Research thesis. A mixed method approach was applied which included a Systematic Review (SR) which explored research into link worker (LW) skills and training in Social Prescribing (SP). Building on the findings of the SR, qualitative questions were developed and semi structured interviews were conducted with key stakeholders to examine the skills of LWs and the training available to LWs from the perspective of SP coordinators. Results from the semi-structured interviews helped to inform the questionnaire which was developed which investigated the LW role, training and stated preferences. The questionnaire included Contingent Valuation Method (CVM) questions which were applied to examine the value that LW placed on the benefits of accessing continual professional development training to improve their skills set to undertake their role.

2.2 Research Design

In this thesis, a mixed-method approach to data collection and analysis was adopted; a combination of qualitative and quantitative methodologies to achieve a greater scope of knowledge than using just one type of data collection and analysis method (Schoonenboom and Johnson, 2017). Using mixed-methodologies for SP research is a common approach (Carnes *et al.*, 2017).

This study followed an exploratory sequential type of mixed-method approach whereby a systematic literature review was later followed by qualitative data collection informing the collection of quantitative data (Shorten and Smith, 2017). Mixed-method approaches employ data triangulation whereby two methods provide greater strength in findings and conclusions than a single method approach due to increased credibility (Sandelowski, 2000; Carter *et al.*, 2014). The expectation was that the data from the systematic review, qualitative and quantitative elements of this study would cascade into evidence that will culminate as one concept or idea (Denzin, 1978). Through convergence, the results of the three methods of data collection provided a concluding explanation of the research question (Denzin, 1978; Fielding, 2012). The systematic review results outlined the lack of evidence into the subject area of LW training and confirmed a need for further research.

The question themes that were posed to participants in the semi-structured interview were derived from the findings of the systematic review. Subsequently, the question themes in the LW questionnaire were derived from the results from the semi-structured interview.

2.3 Systematic Review

A Systematic Review (SR) seeks to gather all research evidence based on pre-determined search parameters in order to answer a research question in a particular field (Higgins *et al.*, 2020). The purpose of this SR was to acquire context to understand the training available to LWs. When conducting a SR, it is imperative that each stage of the review is applied in a sequential and rigorous process (Clarke, 2011). The SR process includes the identification of a specific research question, pre-determined search criteria, an explicit methodology to aid future replicability, data extraction conducted by two or more authors, risk of bias analysis, quality appraisal, and synthesis of selected articles (Clarke, 2011). Following the completion of the SR article selection process an interpretation of the results is conducted which will then determine whether the evidence base is sufficient and whether further research should be pursued.

The systematic review protocol for this project was registered on the National Institute for Health Research (NIHR) PROSPERO database and the registration number is: CRD42020158721. SR protocols are registered to ensure adherence to the predefined search strategy, transparency: to aid future researchers to reproduce the SR, and for peer review (Stewart, Moher and Shekelle, 2012). In addition, SR protocols are written before the SR is conducted to lessen the effects of bias (Moher *et al.*, 2015). SR protocols outlines the research question, the context of the research inclusion criteria, the data extraction method, quality appraisal, data synthesis, projected timeline of completion, and future plans for dissemination (Lasserson, Thomas James and Higgins, 2020). The findings of the SR conducted for this thesis on the training needs of LWs is presented in Chapter 3.

2.4 Ethical approval

Ethical approval was received from the Bangor University School of Health Sciences Ethics Committee in April 2020 (Reference: 2020-16678). Each participant received a participant information sheet and a consent form (See Appendix C), detailing the aims of the research,

why they had been selected to participate in the research, what they would be expected to do, potential risks and benefits, how the participant's data will be kept confidential and what would happen should the participant want to withdraw from the study. Written consent was gained where possible and verbal consent was gained in interview situations that did not happen face to face due to the COVID-19 lockdown of March 2020, which coincided with the thesis data collection period (See Appendix D).

2.5 Primary data collection

2.5.1 Sampling

A purposive sample technique was used in the qualitative and quantitative sections of this this mixed-method review. The sample population for the semi-structured interviews, were SP coordinators that worked across the whole of Wales, and commissioning SP interventions with a team of two LWs or more. This sample allowed for representation from different models of SP intervention. The sample population for the questionnaires comprised of different types of LWs delivering SP interventions across Wales. Purposive sampling was appropriate for this mixed-method design, given that purposive sampling allows researchers to identify participants based on a specific commonality that will yield the most relevant information to the research question and allow for generalisation to the wider population (Palinka*s et al*, 2015). Access to the sample population of LWs for the questionnaire was acquired from SP networks via email to a regional SP commissioner, who shared the information with SP Networks across Wales, who cascaded the information to their staff who shared the questionnaire to their team members. Access to the sample population of SP coordinators for the semi-structured interviews was acquired via direct emails to the key stakeholders.

2.5.2 Semi-structured interviews

The semi-structured interview sought the perspectives of key stakeholders identified as those that manage the delivery of SP or those that commission SP interventions across Wales to gain insight into the level of training and peer support available to LWs. The key stakeholders are best qualified to share their perspectives as they are gatekeepers into community development. Semi-structured interview technique is typically seen in SP research (Payne, Walton and Burton, 2020), and the format of this research method

comprises of a conversation between the researcher and participant which is guided by pre-constructed questions, follow up questions could be asked if the researcher deems it necessary (DiCicco-Bloom and Crabtree, 2006). The lack of rigidity in interview design allows for information (which might have otherwise been missed) be collected (Dejonckheere and Vaughn, 2019). Method triangulation was employed in this study as semi-structured interviews within the context of a mixed-method approach would allow for the qualitative data to inform the quantitative research design and data collected and vice-versa (Carter *et al.*, 2014). The semi-structured interviews were audio recorded to allow the researcher to engage in active listening and to ask pertinent questions at appropriate times (Louw, Watsson Todd and Jimakorn, 2011). Despite its strengths a semi-structured interviews use smaller samples in comparison to quantitative methods, semi-structured interviews are time consuming and participants may be subject to investigator bias (Loureiro and Lotade, 2003; Althubaiti, 2016).

2.5.3 Questionnaires

A questionnaire methodology was adopted in this thesis to acquire information on the LW profile, the LW role, and LW stated preference for training. The Questionnaires were distributed to LWs across the whole of Wales following the semi-structured interviews in order to provide complementary information and context to the perspectives of SP coordinators. Initially the questionnaires were intended to be shared in a paper format in person. However, due to the COVID 19 pandemic, the researcher transposed the paper questionnaire to an online format. Online dissemination of the questionnaire meant that a larger sample could be reached in a shorter period time and at an appropriate time for respondents (Regmi *et al.*, 2016). Different SP networks across Wales cascaded the questionnaire down to LWs. The email dissemination of the questionnaire meant that participants could directly contact researchers in the instance of any queries. Using this methodology meant that sharing this questionnaire was feasible enough that the researcher did not have to employ the services of external organisations (Dillman, 1991).
Questionnaires are a survey technique which are prevalent in quantitative methodology used to collect different types of information from a sample based on their responses (Nigel, Mathers and Fox, 2007). Questionnaires are reliable due to their replicability for future

research (Rattray and Jones, 2007). The purpose of questionnaires is to collect a broad range of information from a large target sample in a minimal amount of time (Ponto, 2015). In The questionnaire developed for this project combined the Contingent Valuation Method approach along with closed questions. Closed-questions were selected as the allow for contrast and distinction amongst results (Meadows, 2003). In order to encourage respondent participation of the questionnaire, the questions were grouped and sequenced in order of theme and relevant questions, placing the difficult questions in the latter stages so that the questionnaire was not taxing for the respondents and to mitigate against the effects of respondent fatigue which is consistent with the Total Design Method (Dillman, 1991; Ben-Nun, 2008). Despite its strengths questionnaire design is liable to lack insight to participant's level of question understanding, predetermined responses created by the researcher does not provide any rationale for responses (Jones, Baxter and Khanduja, 2013). Similarly, it is unclear how honest the respondent is in their responses (Jones, Baxter and Khanduja, 2013).

The questionnaire went through two stages of piloting. A small sample of LWs were asked to read the participant information sheet and consent form, and answer the preliminary draft questions to ensure that the questions were easily understandable and yielded the appropriate responses (See Appendix F). Any discrepancies were rectified before the final version of the questionnaire was shared. Following data collection, the data was inputted into a Microsoft Excel sheet to allow for descriptive analysis of results.

2.5.4 The Contingent Valuation Method

The Contingent Valuation Method (CVM) approach is a stated preference technique used to value non market goods not traded in the open market and the approach estimates the Total Economic Value (TEV) including the use and non-use value of a good or service (Cawley *et al.*, 2006). Non-use value refers to the perceived private benefit an unavailable good/service (Frey Id and Pirscher, 2019). The CVM derives from one of the core assumptions of neo-classical economic theory which assumes that individuals seek to maximise their utility and the price that an individual pays for a good evinces the utility the individual expects to receive from the good, along with their preferences (Weintraub, 2007). CVM technique is used as follows: a hypothetical yet realistic scenario of the provision a

good or service is presented, a value elicitation method is then employed and followed by a census of the socio-economic and environmental factors that could determine how the participant values the hypothetical good or service (Chatterjee *et al.*, 2017). Willingness to Pay (WTP) is the elicited maximum value that a respondent places on a good/service expressed in monetary terms (Weatherly, Faria and Van den Berg, 2014). The CVM is appropriate for this particular study as it takes into account people's choices, preferences and value estimates for the topic under discussion (Johannesson, 1996).

Elicitation Method

The exponential payment card allows respondents to place a value on a good/service based on their perceived benefit with the assistance of a visual aid (Bonato, Nocera and Telser, 2003). The intervals along the payment card were predetermined, starting with the lowest bid (£10) and ending with the highest bid (£600). Following the second bid (£50), the bid intervals increased by £50 up to £600 (See Appendix F). Respondents were also given the option to select £0, so that respondents were able to indicate that they place no value on the good/service and therefore do not have a perceived benefit (Soeteman, van Exel and Bobinac, 2017). The National Oceanic and Atmospheric Administration (NOAA) report suggests that in order to the mitigate against the effects of 'budget effects', it is essential that researchers ask respondents to reflect upon their finances before selecting a monetary value to elicit their true WTP (Arrow et al., 1993).

Stated preference via WTP has high validity within research design as the exponential payment ladder card respondents to state the WTP for a good as opposed to the researchers making assumptions from other observed and reported behaviour (Pearce and Zdemiroglu, 2002).

Sequencing

In CVM questionnaire design, the sequence in which questions are presented within the questionnaire should contain a logical flow in progression between questions to understand the choices and preference indicated by respondents (Howe, Lee and Bennett, 1994).Equally, questions answered earlier in the questionnaire are liable to impact the responses provided in the latter portions of the questionnaire, therefore it is important that questions are engaging, easily understandable, and disarming (Bateman *et al*, 2002). In this CVM questionnaire that respondents were asked if they would participate in a hypothetical

training scenario if the training was available free of charge in order to set a precedent for the responses to follow. Following the initial question, respondents were informed that the training would not be available free of charge and asked to indicate on an exponential payment ladder the value they would place on accessing this training. Participants were asked to indicate the maximum amount they would pay out of pocket for this hypothetical training scenario. Once the willingness to pay estimate was elicited participants were asked to provide a reasoning for the amount indicated. For further context, participants were asked to provide information about living costs as it pertains to their household. This questionnaire adopted the 'funnel approach' whereby the initial CVM question in the questionnaire was a used to contextualise the hypothetical scenario, the first question did not address the main purpose of the CVM questions. Following the contextualisation of the hypothetical scenario, the elicitation task is presented and concludes with the delicate questions regarding socio-economic situations (Bateman *et al.*, 2002). It is imperative that participants have full awareness and understanding of hypothetical training scenarios and its impacts on their career and household (Longo, Hoyos and Markandya, 2015).

2.5 Chapter 2 Summary

This chapter outlined the rationale behind the mixed-methodology applied within this research, including systematic review, semi-structured interview and questionnaire theory. The CVM questions included in this research will aim to gather information about LWs willingness to pay for further training to enhance their knowledge and skills.

The process for ethical approval was outlined along with theory about sampling and how the researcher went about acquiring the sample population. The purpose of this chapter was to provide the rationale context and theory of the research design employed in this research. In the next chapter, the systematic review results will be outlined in what is the first step of data collection within this research. Subsequent Chapters 4, and 5 will outline the results from the semi-structured interviews and questionnaire survey respectively.

Chapter 3 – Systematic Review

A Systematic review to investigate recruitment into social prescribing interventions, and to explore the skills of link workers in dealing with complex case referrals.

3.1 Introduction

The purpose of this chapter is to present the rationale and in-depth process undertaken in conducting the systematic review which will provide the hierarchy of evidence to support and develop this research propjet. The relevant literature will be explored in depth to examine link worker skill set along with training undertaken in assisting link workers in the roles in dealing with complex case referrals. The systematic review aims to provide insight into the current knowledge base, which could potentially inform a growing evidence base into link worker training and guidance for their role.

3.2 Background

Social Prescribing (SP) is a non-medical intervention which involves helping individuals to improve their health, wellbeing and social welfare by connecting them to community services (Drinkwater, Wildman and Moffatt, 2019). SP is a means of enabling General Practioners (GPs), nurses and other primary care professionals to refer individuals to a range of local, non-clinical services (BMA, 2019). A Link Worker (LW) is responsible for enabling and supporting an individual to assess their needs, co-producing solutions for them making use of appropriate local resources (NHS England, 2019a). Patients require LWs to help access and navigate SP interventions and in order for LWs to develop the necessary skills to manage the complex needs of individuals, training is required (Tierney *et al.*, 2020).

Given that the LW role is a new role, it is unclear to which support and training systems are in place to aid LW professional development (NALW, 2019). In order to construct the relevant LW training it is essential that all literature related to LW skills and training be reviewed to understand the current evidence base in order to make pertinent recommendations to improve LW opportunities for training (Brown *et al.*, 2018)

3.2.1. Systematic review process

Systematic reviews are a form of literature review that seeks to systematically answer a specific research question by summarising and appraising all known research into the stated

subject area (Hemingway and Brereton, 2009). The systematic review process comprises of creating a protocol in that will be adhered to throughout the review in order for the systematic review to be replicated in the future (Centre for Reviews and Dissemination, 2009). The protocol outlines the rationale for the review, devising the search with inclusion and exclusion criteria, data extraction, study appraisal, analysis of the results, conclusion, and potentially dissemination of findings (Uman, 2011). Systematic reviews are rigorous in the search process in order to provide evidence-based answers that display the extent of research knowledge in a particular field (Boland, Cherry and Dickson, 2017). According to the hierarchy of evidence systematic reviews are considered as the most reliable research methodology in evidence-based practice (Murad *et al.*, 2016). The hierarchy of evidence ranks different research methodologies in evidence-based research which assesses effectiveness, appropriateness, and feasibility (Evans, 2003). The hierarchy of evidence is often depicted with the visual representation of a pyramid, upon which the least rigorous evidence methodology is found at the bottom and the most reliable evidence methodology is found at the summit (Peterson, 2020).

3.2.2. Study aim

The aim of this systematic review is to identify the current key skills matrix of social prescribing link workers involved in the assessment of individuals with complex issues and needs.

Study objectives

- To identify current Link Workers (LW) skills mix
- To identify skills required by LW in dealing with more complex referrals

3.3 Literature search strategy

The literature search strategy serves a significant purpose within systematic reviews. Search strategies provide a detailed and transparent plan outlining the way in which a search can be conducted (Cooper *et al.*, 2018). This transparency allows for readers to understand the rationale behind the study selection process and the relevance of included study articles within the context of the review question (Grewal, Kataria and Dhawan, 2016).

3.3.1. Database searches

The Population, Intervention, Comparator, and Outcome (PICO) framework was incorporated into the systematic review research design to improve search techniques (Schardt *et al.*, 2007).

Database searches take place in systematic reviews since they can be searched for multiple keywords relevant to the research question which appear in the titles, abstracts and or full-texts of academic literature (Kugley *et al.*, 2017).

Population

The target demographic of this systematic review is Link Workers and any equivalent workers that possess a different title with similar roles and responsibilities. Aside from this stipulation, there are no other factors within the stated criterion.

Intervention

This systematic review will investigate impact of current skills matrix of LWs in provision of improved outcomes for patents with complex issues and needs.

Comparator

In this review there is no comparator applicable.

Outcomes

This systematic review will give greater insight into the skillsets that link workers possess presently in collaborating with patients with complex and long term health issues. Additional outcomes include identification of key skills required by link workers in dealing with more complex referrals, and development of guidance for Social Prescribing process referral pathway leading to quality improvements.

A health services librarian from Bangor University assisted in all the searches and was instrumental in developing the search strategy. Search results were managed using the online platform Refworks and Mendeley (*RefWorks*, 2020; *Mendeley Reference Manager*, 2020). The database searches were conducted over two days in February 2020. Inclusion and exclusion criteria comprised of peer reviewed publications including a timeframe of 30 years (1990-2020), the papers searched were in English or French since the primary author speaks English and French fluently. The databases used for the literature search were Applied Social Sciences Index and Abstracts (ASSIA), the Cumulative Index to Nursing and

Allied Health Literature (CINAHL), the Cochrane Library, the American Psychological Association database, PsycINFO, and the biomedical literature database, PubMed. The databases were chosen as these databases would provide comprehensive evidence on the review question. Duplicates were removed by using the remove duplicates function of the RefWorks Reference Management software (*RefWorks*, 2020).

3.3.1 Search terms

A list of search terms was compiled which are outlined in Table 2. The search terms were derived previous studies along with job advertisements for various link worker positions. An expert in the field of Social Prescribing and commissioner of SP interventions was also consulted during the compilation of the key search terms in order to identify the most relevant search terms and ensure thoroughness.

Table 2 Search terms used in the systematic review

Population	**Intervention**	**Outcome**
Social Prescriber*	Social Prescribing	Qualifications
Link Worker*	Social intervention*	Skills
Community Navigator*	Community-based intervention*	Degrees
Facilitator*	Behavio?r intervention*	Masters
Instructor*	Social Value	GCSEs
Care Navigator*	Health & Wellbeing intervention*	A Levels
Health Trainer*	Exercise intervention*	BTEC
Social Prescribing Coordinator*	Bio-socio/ Social Model	NVQ
Community connector*	Community development	HND
Community health agent	Outcomes framework	HNC
Local Asset Coordinator*	Loneliness and isolation	Course
Community worker*	Arts in Health	CPD
Wellbeing officer	Positive mental wellbeing/ mental health	
Health Advisor		
Community Care Coordinator		
Practice Health Champion		
Wellbeing advisor		
Community health worker		

During the keyword searches a number of operators were used. The Boolean operator made the search concise via the use of the operators 'AND' and 'OR' to locate all articles containing the keywords. Truncation (denoted by the *) was used in order to open the scope of the papers. The search term 'Bio-socio/ Social Model' was not yielding any search results, so it was broken down to 'Bio-socio Model' 'Social Model' in order to open the scope of the search. Proximity measures were used also. Proximity measures searching allows for two words to be searched that appear within a certain number of words apart in a sentence of a search result. The wildcard character (denoted by ?) was used to ensure all spelling variations of words in regional variations of a language were taken in account i.e. behavio?r allows the UK English spelling of the word 'behaviour' and the US English spelling of the same word 'behavior' to be searched. Smart searching results were also taken into consideration.

A number of search terms did not yield results in their searches. The population terms include Local Asset Coordinator, Wellbeing Officer, Community Care Coordinator, Practice Health Champion, Social Prescribing Coordinator and Wellbeing advisor. The Intervention search terms that yielded no results were Bio-socio/ Social Model and Health & Wellbeing intervention.

A systematic review protocol for this systematic review was registered on the National Institute for Health Research (NIHR) PROSPERO database in February 2020; registration number: CRD42020158721, and is available globally from the PROSPERO open website.

3.4 Inclusion and exclusion criteria

Inclusion Criteria
The inclusion criteria comprised of the following:

- Peer reviewed journals, papers, reports and also other systematic reviews with content relating to complex case referrals, SP referral criteria and key skillsets of LWs
- English and French written publications
- Publications within the stipulated timeframe (1990-2020)

Exclusion Criteria
The exclusion criteria comprised of:

- Publications outside of the stipulated timeframe (1990-2020)
- Publications liable to contain biased opinions i.e. Newspapers, magazines
- Publications without content relating to complex case referrals, SP referral criteria and key skillsets of LWs
- Publications not in English or French

3.5 Study selection process

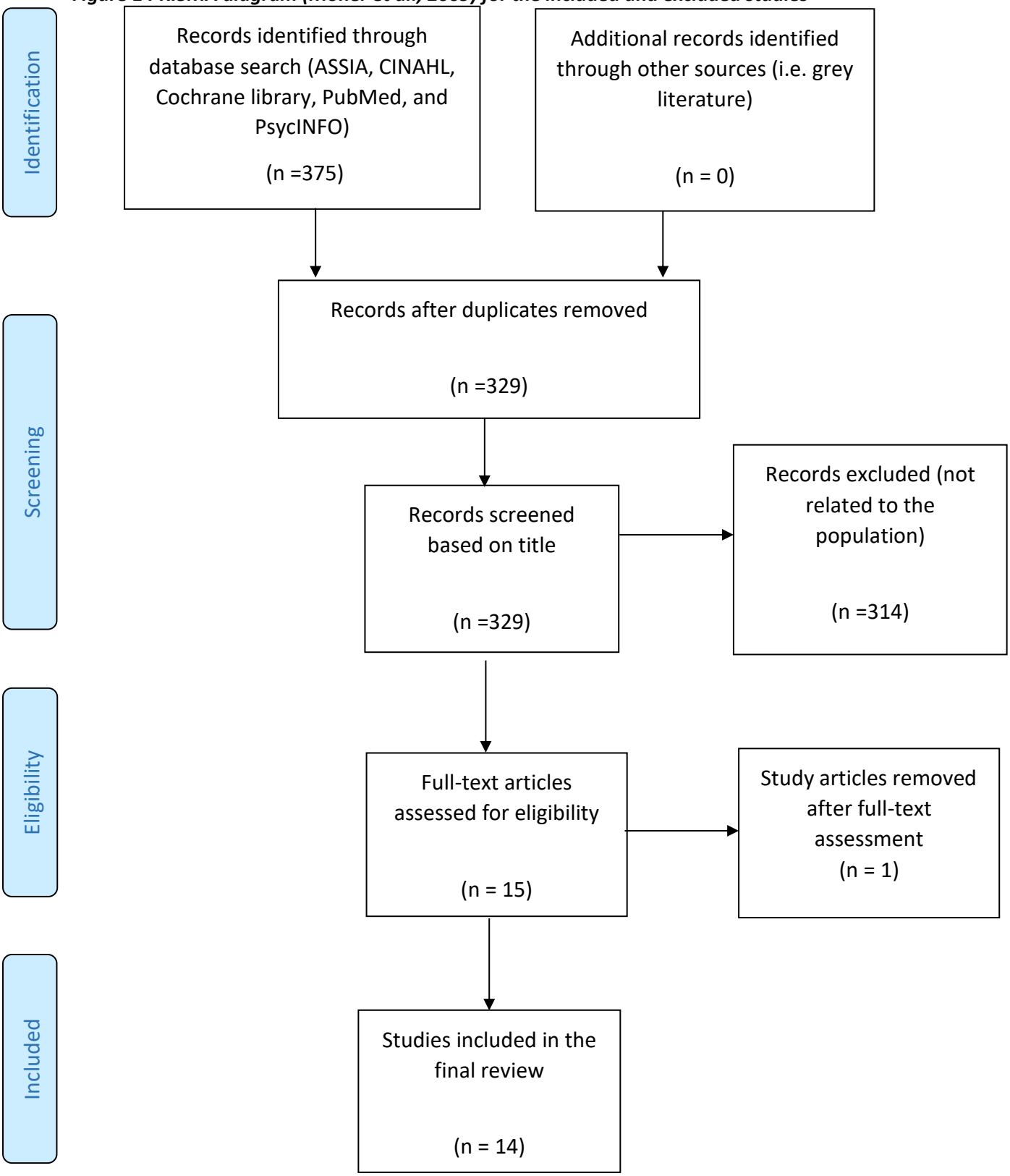
The study selection process follows multiple stages which include title and abstract screening by the review team applying the inclusion and exclusion criteria, deciding on whether the study articles are included into the full review. Details about the searches can be found in the PRISMA diagram (Rathbone, Hoffmann and Glasziou, 2015). See Figure 1 for the PRISMA diagram.

3.5.1 Screening

Three researchers (the MRes Student AM and two research supervisors, ML and LHS) were involved in the study screening process. Initial screening involved the assessment of titles by two researchers independent of one another (AM and ML or LHS). In the event of a disagreement, the third researcher held a vetoing decision (ML or LHS).

The keyword search for the systematic review yielded 375 study article titles, of these, 46 duplicates were removed. The titles of the remaining 329 study articles were reviewed based on their relevance to the population, intervention and outcomes. 15 study articles were deemed potentially eligible and the full texts were examined, 1 study article was then removed during the data extraction process due to not meeting the inclusion criteria. Following the screening process, 14 studies were selected after being identified as pertinent and eligible for inclusion in the systematic review.

Figure 1 PRISMA diagram (Moher et al., 2009) for the included and excluded studies



3.6 Quality assessment

The quality assessments (see Tables 3 and 4) of the selected studies yielded a majority of high quality characteristics with the exception of one paper which had a moderate score. In order to assess the quality of the included studies, the Clinical Appraisal Skills Programme (CASP) tools were utilized (Critical Appraisal Skills Programme Checklists, 2020). For the qualitative studies the CASP tool for qualitative studies was used. This tool features ten questions to which 'yes', 'no' or 'cannot tell' are responded. In this research the 10th question was not used as it was not deemed appropriate (see checklist in Appendix G). For the quantitative study, the CASP tool for cohort studies was used. In this research questions 7, 8 and 12 were not deemed appropriate (Checklist in Appendix H). The quality assessment of studies was conducted by the primary investigator. In this systematic review, high-quality studies featured clear statements of the study's research aims, appropriate use of research methodology, a research methodology that address the research aims, recruitment strategy of the assessed population, method of data collection, clear ethical considerations and a statement of findings.

3.6.1 Risk of bias in the quality assessment

Following the selection of relevant studies for inclusion, the studies were separated different streams of evidence and critically appraised by two independent researchers for methodological quality (with the third reviewer acting as a veto). The Grading of Recommendations, Assessment, Development and Evaluations (GRADE) framework was consulted to assess risk of bias of the selected evidence. Systematic Review researchers employ GRADE by determining the research question and which outcomes are affected by it. Subsequently, the researchers rate the quality of evidence based on their outcomes (Siemieniuk and Guyatt, 2017). Given the subjectivity of the GRADE framework two researchers can reach different conclusions about a study's certainty, however GRADE presents a framework that is reproducible and transparent for grading certainty in systematic reviews (Mustafa *et al.*, 2013).

Table 3 CASP: Quality appraisal for qualitative studies

CASP: Quality appraisal for Qualitative Studies									
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Anderson et al (1997)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Balaji et al (2012)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Bell et al (2013)	Y	Y	Y	Y	Y	Y	CNT	Y	Y
Black et al (2014)	Y	Y	Y	Y	Y	CNT	Y	Y	Y
Javanparast et al (2011)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Kellezi et al (2019)	Y	Y	Y	Y	Y	CNT	Y	Y	Y
Lorenzo et al (2015)	Y	Y	Y	Y	Y	CNT	Y	Y	Y
Majee et al (2019)	Y	Y	Y	Y	Y	N	CNT	Y	Y
Standing et al (2008)	Y	Y	Y	Y	CNT	N	N	Y	CNT
Vareilles et al (2015)	Y	Y	Y	Y	Y	CNT	Y	Y	Y
Wallace et al (2020)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Wildman et al (2019)	Y	Y	Y	Y	Y	Y	Y	Y	Y

Table 4 CASP: Quality appraisal for quantitative studies

CASP: Quality appraisal for Quantitative Study									
Study	Q1	Q2	Q3	Q4	Q5a	Q5b	Q9	Q10	11
Lang et al (2011)	Y	Y	Y	Y	Y	Y	Y	Y	Y
Zordan et al (2010)	Y	Y	Y	Y	Y	Y	Y	Y	Y

Y = YES, N= NO, CNT = CAN NOT TELL.

3.7 Data extraction

Table 5 Study Characteristics

Year Published	Author	Country	Type of study	Study aims	Quality assessment of study
1997	Anderson et al.	Australia	Qualitative study: focus groups	To determine the learning needs of community health workers in rural areas working with domestically abused women	High
2012	Balaji et al.	India	Case Study	To assess and develop a community based intervention for schizophrenia led by lay health workers in three communities in India	High
2013	Bell et al.	Canada	A mixed-method longitudinal study	To examine how alterations to online professional development can provide practical accessible means for public health workers to develop core competencies for public health	High
2014	Black et al.	England	Observational Study	To explore the change in confidence in engaging in discourse that supports parents with leading a healthy lifestyle after having undergone training To examine the difference in staff proficiency in using 'open discovery questioning' after having undergone training To understand the link between confidence and proficiency after having undergone training	High

Year Published	Author	Country	Type of study	Study Aims	Quality assessment of study
2011	Javanparast et al.	Iran	Qualitative study with semi-structured interviews	To identify what attitudes community health workers (CHWs) have towards their participation to Iranian rural health	High
2019	Kellezi et al.	England	Mixed-Method: semi-structured interview and longitudinal survey	To evaluate the extent to which the social cure model of psychosocial represents occurrences that have taken place around healthcare staff and service-users in the social prescribing pathway and the extent to which the psychosocial process forecast how the SP pathway will affect healthcare consumption	High
2011	Lang et al.	England	Quantitative study with surveys	To observe the factors that affect engagement and competency level in community mental health workers	High
2015	Lorenzo et al.	South Africa, Botswana, Malawi	Qualitative (interpretative, with life history) study with semi-structured interviews	To explore the local experiences and procedures of Community disability workers (CDWs) in order to have a better grasp of the role and to display the professional skills and abilities of CDWs in the deliverance of disability inclusive services in more secluded areas by making these interventions more accessible to the disabled	High

Year Published	Author	Country	Type of study	Study Aims	Quality assessment of study
2019	Majee et al.	South Africa	Qualitative study with semi-structured interviews	To understand what gives the impetus to community health workers (CHWs) to undertake self-management (SM) training To explore what skills are acquired from training To recognise the observed effect of training on CHWs health behaviour in their personal and professional capacities	High
2008	Standing et al.	Bangladesh	Literature Review	To explore how deprived people groups can access reliable, and capable knowledge and services in a multifaceted health system in a market rife with lack of regulation via community health agents	Moderate
2015	Vareilles et al.	Uganda	Realist Evaluation	To undertake a realist evaluation that seeks to understand the motivational drivers and factors that influence the performance of community health volunteers (CHVs)	High
2020	Wallace et al.	Wales	Mixed-Methods: Concept mapping and focus group	To formulate a Social Prescribing training pathway for link workers in Wales that can be used to inform key stakeholders and policymakers on how to develop the pathway	High

Year Published	Author	Country	Type of study	Study Aims	Quality assessment of study
2019	Wildman et al.	England	Field Study /Qualitative study with focus groups and semi-structured interviews	To examine lack of understanding in the expectations and responsibilities of link workers (LW) in their roles and the skills and traits deemed critical to ensure service active user participation	High
2010	Zordan et al.	Australia	Quantitative: surveys	To examine the similarities and differences in the experience of trained and untrained leaders in group intervention	High

This review featured a 14 studies with sample populations from multiple countries which included Australia, Bangladesh, Botswana, Canada, England, India, Iran, Malawi, South Africa, Uganda and Wales. A plethora of different research methodologies were seen which included case studies, concept mapping, focus groups, literature reviews, longitudinal studies, observational studies realist evaluations, semi-structured interviews, and surveys.

3.8 Analysis and synthesis

In this section synthesis of the included literature will be conducted by means of thematic analysis. Following data extraction, thematic analysis was selected as the systematic review's means of narrative synthesis since the majority of study articles (n=12) featured a form of qualitative methodology, the remaining study articles featured a quantitative methodology (n=2). Evidence indicates that thematic analysis is a verified and reliable means of synthesis in systematic reviews as it allows review investigators to develop new concepts and theories based on the results from the selected study articles (Thomas and Harden, 2008).

The three themes were develop based on the commonality and homogeneity of patterns within the population and intervention that were identified amongst the study articles. The three themes were independently agreed amongst the three authors (AM, ML and LHS).

Three key themes were identified amongst the selected studies were:

1. Training needs and capacity building of link workers in delivering social prescribing interventions. This theme encompasses identifying training undertaken by link workers along with specific training needs required for effective and efficient delivery of social prescribing interventions. The identification of training undertaken adds data into the current LW skills mix as there a clearer picture of the skills LWs currently possess.

2. Challenges in delivery of SP interventions to understand the obstacles faced by LWs during social prescribing intervention delivery. By identifying the obstacles that LWs face within their role, it accentuates possible gaps in their training which provides an outline of what training is required in the future to deal with complex cases.

3. 'Social solution' for multiple outcomes in complex cases which examines how SP can be applied to different outcomes for patients with complex cases. The identification of different contexts that SP attains in complex cases could add specificity to future training needs of LWs in order to reinforce the positive outcomes reported on a wider level.

A list of the included study articles within their respective themes is seen in table 6

Table 6 Identified key themes of selected study articles

Theme 1 Training needs and capacity building of workers delivering SP interventions	Theme 2 Challenges in delivery of SP interventions	Theme 3 'Social solution' for multiple outcomes in complex cases
Anderson et al (1997) Bell et al (2013) Black et al (2014) Lang et al (2011) Majee et al (2019) Vareilles et al (2015) Wallace et al (2020) Wildman et al (2019)	Lorenzo et al (2015) Standing et al (2008) Zordan et al (2010)	Balaji et al (2012) Javanparast et al (2011) Kellezi et al (2019)

3.9 Analysis of results

Social prescribing is a non-medical intervention which is aimed at addressing the needs of individuals with long-term chronic and complex conditions (Drinkwater, Wildman and Moffatt, 2019). There is increasing evidence to suggest that SP can positively impact the health of referred patients through community based intervention (Ferguson and Hogarth, 2018). Furthermore, the integration of LWs within primary care networks lessens the burden that GPs experience with patients e.g. people from areas of high multiple deprivation (RCGP, 2018). Equally, it is noted that LWs take on a larger workload within PCNs, the role will see increased contact with different health professionals (BMA, 2019). Engaging with different health professionals will require understanding of different facets of PCN networks which LWs would not otherwise possess, it is for this reason LWs require additional training to support them as the demands of the role increase (NHS England, 2019a). SP is delivered within the community where those that deliver and signpost interventions to patients have a number of different job titles and roles (Drinkwater, Wildman and Moffatt, 2019). The range of different job titles within SP is broad, the titles include community development worker, community disability workers, community lay health workers, community health volunteers, community health agents, community health

workers, health coaches, link workers, public health workers, and support group leaders. Although role titles vary within SP, individuals undertaking these roles are increasingly seeing greater demand on their skills and knowledge as a result of referrals of individuals with chronic and complex conditions requiring referral to support services.

3.9.1 Theme 1 - Training needs and capacity building of workers delivering SP interventions.

The purpose of this theme was to examine the training needs and capacity building of workers delivering SP interventions. The theme included eight studies (Anderson *et al.,* 1997; Lang *et al*., 2011; Bell *et al.,* 2013; Black *et al.,* 2014; Vareilles *et al.,* 2015; Majee *et al*., 2019; Wildman *et al.,* 2019; Wallace *et al*., 2020). The studies included within this theme adopted a global perspective with the studies carried out in Australia n=1, Canada n=1, England n=3, South Africa n=1, Uganda n=1, and Wales n=1.

Anderson et al. (1997) sought to determine the learning needs of Community Health Workers (CHWs) in rural areas working with women who had experienced domestic abuse. To ensure positive outcomes within this role there is a need to raise awareness on domestic violence towards women, particularly in rural communities, employing community development principles along with networking principles to deliver quality community intervention. Anderson et al (1997) recommended that a training pathway for rural CHWs is developed based on the needs expressed by CHWs, and that the findings of the study are used to assess the proposed training program's applicable to other communities and that the CHWS can receive accreditation for the proposed training program. This study included a sample size of 52 community based health workers with multiple focus groups. A limitation of this study is that the way in which the community workers were grouped was unclear.

Similarly, Wallace et al (2020) sought to formulate a social prescribing training pathway for link workers in Wales that can be used to inform, key stakeholders and policymakers on key content required in the development of a SP curriculum for LWs. Research findings indicate that many of the training needs deemed essential by the link workers are not available. The training needs were identified via clusters of statements provided by LWs. The themes which emerged from the clusters included compassion, interpersonal skills and networking.

The training needs identified were reported in two categories, training needs which can be met due to the relevant training being available, and training needs which are not able to be met due to the relevant training which has not yet been developed. Key training needs which can be currently met include listening skills, compassionate training, and knowledge of local interventions for accurate referral. Key training needs currently unavailable and identified as important are development of collaborative approaches, understanding health inequalities, SP intervention evaluation, and setting boundaries with service-users. Results suggest that a clear induction pathway is required and in the first year of undertaking the role, key training needs should be identified. Recommendations indicate that future research should be undertaken into identifying the education and training needs of LWs, linked with the diversity of roles within SP provision (Wallace *et al.*, 2020). This study employed two distinct methods of data collection which saw large samples of LWs report what their training needs are.

Bell et al (2013) examined how alterations to online professional development can provide practical accessible means for public health workers to develop core competencies for the delivery of public health interventions in Canada. Evidence suggests that when developing competencies through training and continuous professional development amongst public health workers, it is important to understand the workers and their working environments in order to better tailor training to their needs. Furthermore, they found that support from management encourages full completion of training. Qualitative and quantitative methods to evaluate the pilots, the criteria included measures of relevance, effectiveness and design. The study had a small sample and therefore the generalisations that could be made were limited.

Black et al (2014) conducted an observational study that sought to explore the change in confidence in engaging in discourse that supports parents with leading a healthy lifestyle after undertaking healthy conversation skills training. Findings indicate that LW considered that the course to equip them with skills to engage in conversations with parents whose children attended healthy sure start children's centres to improve their life choices. The training was based upon a problem-solving approach, which is necessary in SP for LWs to brainstorm positive outcomes with service-users. The healthy conversation skills course

provided tangible evidence of an improvement in the confidence of LWs to engage in discourse with parents about leading a healthy lifestyle and in using the open discovery questioning technique. Subsequently, parents assigned greater significance to a healthier lifestyle. This study had a large sample size of 148 total participants and a large variety of job roles were represented in this study. This study could have benefitted from collecting background information on the participants such as age, education, experience and any prior training.

Lang et al (2011) conducted a study to observe the factors that affect engagement and competency level in community mental health workers using self-assessment surveys. Research findings indicated that training quality should be valued over frequency of training when training Community Mental Health Workers (CMHW). In addition, their results highlighted that more training should be available to CMHW where there is high demand amongst patients for specific interventions. In addition, results found that if training is provided early in CMHW's career, this can positively impact how they carry out their role. Lang et al (2011) recommended that the self-assessment method should be used to evaluate and shape a remodel of roles within the Yorkshire Care Pathway Model. This study had a large sample size with a number of different job roles represented. This study experienced a low response rate when compared to other surveys conducted within the context of the NHS.

Majee et al (2019) conducted semi-structured interviews with community health workers (CHWs) from specific regions in South Africa in order to understand what gives the impetus to Community Health Workers (CHWs) to undertake Self-management (SM) training. As a baseline, CHWs were of Afrikaans origin possessing only secondary education. In addition, results indicate that CHWs should engage in continued education on specific health conditions as well as on SM concepts to help CHWs provide community case management for a variety of health conditions and behaviours. Undertaking these types of training courses allowed CHW to gain knowledge on health conditions that patients present with creating greater understanding how to manage multiple health conditions which is essential to the CHW role. Majee et al (2019) asserted that it is paramount that a standardised SM

training pathway is developed, along with a tool which assesses the skills of CHWs in SM. This study would have benefited from pretesting to develop a background profile on participants. The majority of participants in the sample were female and so generalisation of results to other contexts would not be possible in addition to this the sample was quite small (n=20).

Vareilles et al (2015) conducted a realist evaluation to understand the motivational drivers and factors that influence the performance of Community Health Volunteers (CHVs) in Uganda. The study examined two groups of CHVs over a nine month period. Results indicate that after having undertaken a 'capacity-building' programme CHVs performed better when motivated. A sense of duty to the communities in which they were working in and 'good' leadership from their line managers which enabled CHVS to use their own to be autonomous in their decisions were cited as motivational factors. Autonomy of decisions is an important skill for LWs to possess in order to better assist service-users in managing their situations. Furthermore, Vareilles et al (2015) suggest that line managers of CHVs need to be able to accommodate the different motivational factors and evolving needs of CHVs in order for CHVs to achieve greater performance within their job roles. This study was the first published realist evaluation of the motivation and management of CHVs. The sample size was small and there is was a lack of diversity amongst participants. What's more is there was limited background profile on the participants of this study.

Wildman et al (2019) utilised a qualitative methodology consisting of interviews and focus groups with Link Workers (LWs) working in areas of high levels of deprivation in England. The study aimed to examine lack of understanding in the expectations and responsibilities of LWs in their roles and the skills and traits deemed critical to ensure active service-user participation. LWs working in areas of high multiple deprivation reported that barriers to effective deliverance to include a lack of consistency in the caseloads of LWs and that their training does not sufficiently prepare them to carry out their roles. Furthermore, Wildman et al (2019) found that service-user's participation in SP necessitates trained LWs that receive active endorsement from the primary care referrer and bespoke training to keep up with an evolving role. As the caseloads of LWs increase the need for training becomes more

apparent for quality assurance in SP intervention. The longitudinal study allowed for the tracking of changes in LW perceptions. This study was able to interview LWs individually away from the focus group which allowed for more honesty in responses with a large and adequate sample size. This study would have benefited from more post intervention individual interviews.

Of the eight studies that fell in this theme, one of the studies was conducted in a rural setting. Anderson, Black, Lang, Majee, Wallace, and Wildman explicitly stated that a quality training pathway is necessary for LWs. Wallace and Lang expanded upon the need of training by stating that this training was needed in the first year of entering the LW role. Vareilles and Bell were the only studies to specifically mention which types of training were needed. The variety in international settings adds credibility to the need of accredited LW training (Franke and Richey, 2010). This theme addressed the need for a SP training pathway detailing when the training should start in the career of a LW. In addition to this key skills were identified also.

3.9.2 Theme 2 - Challenges in delivery of Social Prescribing interventions

This purpose of this theme was to examine the challenges in delivery of SP interventions. The theme included three studies (Lorenzo *et al.,* 2015; Standing *et al.,* 2008; Zordan *et al.,* 2010). The studies included within this theme adopted a global perspective with studies carried out in Australia (n=1), Bangladesh (n=1), and South Africa, Botswana and Malawi (n=1).

Lorenzo et al (2015) conducted a qualitative study which involved conducting interviews with Community Disability Workers (CDWs) in rural South Africa, Botswana and Malawi to understand CDW local experiences and challenges encountered when delivering SP interventions. In addition, the study aimed to explore and gain insight on the CDW's role and the skills required to ensure that interventions more accessible to the disabled. Research findings indicate that there is a need for better management of the health conditions and factors that limit the disabled persons; a need for lobbying for the development of a more inclusive and accessible community for the disabled; and more streamlined and cohesive structures, and professional accreditation. Professional accreditation for CDWs allows for increased awareness amongst new service-users who

would otherwise not engage with the local interventions. The CDWs identified lack of professional accreditation as a challenge to delivery given that their current skill level and knowledge were not at a high level. This lack of professional accreditation alienates and excludes them from working with their 'highly qualified' peers in SP intervention. The researchers of this study conducted follow up phone calls to allow participants to elaborate on their initial interviews. The sample had representation from three countries which will allow for greater generalisation to wider contexts. A limitation of this study is that the researchers lacked research experience.

Standing et al. (2008) explored how deprived groups in Bangladesh can access reliable knowledge via community health agents about services in a multifaceted health system in a market rife with lack of regulation of healthcare knowledge. Research findings indicate that challenges for CHVs were seen in the areas of means of financial support, gender roles, and motivation. CHVs had to sell pharmaceuticals in order to sustain themselves financially, this undertaking diverts CHV attention away from the individuals within the community. Financial stability is vital in maintaining staff numbers and as a motivational factor to continue to carry out the role of CHV. Members of the local Bangladeshi communities routinely called the legitimacy of the health workers into question. Male CHVs struggled to provide their services to service-users due to the cultural expectations and as a result an all-female model of intervention deliverance was adopted. Standing et al (2008) derived four models for community health agents for the future to solidify the legitimacy of the CHV role amongst services users within local communities. These models include a generic community health agent, a specialist community agent, a patient representative and community mediator. Standing et al (2008) recommend that the health models be implemented to develop trust between service-users and the health agents. This study focused on Bangladesh, limiting its scope to generalise its findings.

Zordan et al (2010) carried out a quantitative study using postal surveys in Australia. The aim of the study was to examine the similarities and differences in the experience of trained and untrained leaders of support groups with participants with of long term health conditions. Research findings indicated that trained support group leaders were considerably younger, supporting smaller cohorts with a greater caseload than their

untrained peers. Furthermore, trained support group leaders tended to be female, younger in age, and possessed a higher level of education than high school. Untrained support group leaders tended to have more challenges than their trained counterparts. The key challenges to intervention deliverance outlined by support group leaders were managing being contacted by support group members out of hours, a lack of leadership training, enrolling new support group members, and managing dominant group members. Untrained support group leaders tended to experience more challenges within their role. Furthermore, untrained support group leaders experienced significantly higher levels of emotional exhaustion when compared with their trained counterparts. Zordan et al (2010) recommend the development of an online platform where ideas and resources can be shared amongst support group leaders to mitigate against challenges faced within the role. This study had a large and diverse sample size, however this diverse sample also meant that it was difficult to find homogeneity when comparing the groups.

Despite the difference in setting and sample populations, the challenges to SP delivery cited in each of the three studies shared similarities. Lorenzo et al (2015) and Zordan et al (2010) reported that untrained LWs experiencing difficulties in conducting their job role. The sample population in Zordan's study were LWs working in an urban setting in Australia, whereas the LWs working in Lorenzo's study were LWs working in a rural setting in South Africa and Malawi. Standing et al's (2008) literature review drew its results from a Bangladeshi setting and also found that specialist models of would improve service-user engagement in community interventions. Research by Mumbo et al (2015) found that a lack of a national curricula meant a decreased ability to deal with evolving health needs (Mumbo and Kinaro, 2015).

Increased ability to deal with challenges within roles in healthcare is consistent with research conducted in the UK, a study conducted by the University of Birmingham found that trained staff healthcare display more confidence when dealing with on the job challenges (McDonnel*l et al*, 2008).

3.9.3 Theme 3 - 'Social solution' for multiple outcomes in complex cases

The purpose of this theme was to explore the 'Social solution' for multiple outcomes in complex cases. The theme included three studies (Balaji *et al.,* 2012; Javanparast *et al.,*

2011; Kellezi *et al.,* 2019). The included studies adopted a global perspective with studies carried out in England (n=1), India (n=1), and Iran (n=1).

Balaji et al (2012) conducted a mixed method study examining Community Lay Health Workers (CLHWs) in order to assess and develop a community based intervention for individuals with a diagnosis of schizophrenia led by lay health workers in three communities in India. A case study was undertaken examining 30 families to assess the feasibility and acceptability of interventions for people living with schizophrenia. The primary objective of Community Based Intervention (CBI) is to alleviate the symptoms service-users living with schizophrenia experience. CBI is delivered by CLHWs and family members of the service-users, CBI employs the use of local assets, raises Schizophrenia awareness and champions a more inclusive community. CBI reduced the symptoms and disabilities experienced by schizophrenics, it also improved adherence to treatment from patients, saw a decrease in stigma and discrimination experienced by schizophrenics in India and the duty placed on caregivers within the service-users family was lessened. It was suggest that the name community based intervention be replaced with 'collaborative community based care' (CCBC) to better illustrate the approach and direction of the intervention, this would allow service-users and other community members to better understand the nature of the intervention and reduce the stigma related to individuals living with schizophrenia. Balaji et al (2012) found that a multi-layered CBI that addresses multiple outcomes and is delivered by trained CLHWs is both an acceptable and feasible means of treating schizophrenia in India. This study employed a systematic methodology which was able to anticipate any challenges to the effectiveness of the intervention. As this study was carried out in India, results may not be generalised to more global settings.

Javanparast et al (2011) conducted a qualitative study that identified what attitudes Community Health Workers (CHWs) have towards their participation to Iranian rural health. The primary outcome measure of the primary care intervention in Iran is to improve the general health of the population in Iran by focusing on infectious diseases, maternal health and child health. CHWs realised that he social determinants of health have a great impact on the level of health of the general populace. Increased awareness of the environment via

health education allows for greater cooperation from local inhabitants of the Iranian rural areas which equates to a higher level of health within the community. Research findings suggest that trust within rural communities is the most important factor when delivering community health intervention. Conversely, a lack of support/supervision, lack of professional development and a large amount of work due to a shortage of CHWs were cited as barriers to in the delivery of multiple outcomes in complex cases. As long as these barriers exist, less health education can be conducted within the local communities. It is concluded that the Iranian CHW initiative is successful in improving the general health of rural communities in Iran. The sample in this study (n=91) was not representative of the wider population as the total population was around 31,000

Kellezi et al (2019) conducted a mixed-method study to evaluate the extent to which the 'social cure' model of psychosocial health encapsulates experiences of healthcare staff and service-users in the social prescribing pathway. The aim of the study was to examine the extent to which the psychosocial process forecast how the SP pathway would affect healthcare consumption in England. The primary outcome measure was to assess the effectiveness of the SP pathway. The effectiveness of the SP pathway would be indicated by a reduction in the access of GP services. The service-users appreciated the diverse range relationships they were able to develop during the course of the SP pathway, including with LWs and in within the community. The SP pathway led to a sense of belonging to a community, which in turn reduced the levels of loneliness seen in patients which finally resulted in a reduction in patient consumption of primary healthcare. The sample of LWs was small (n=6) out of a total sample of (n=19). The population of adults accessing the intervention were from a predominantly wealthy area, so the results are not necessarily applicable to wider contexts.

Balaji, Javanparast and Kellezi's studies all had a sample population from the LW workforce and the LWs were delivering community-based interventions in different settings. All three studies outlined in some way that the perceptions and buy-in of the community of the SP interventions contributed to the treating multiple outcomes through SP intervention. Balaji found that a better understanding of the SP intervention would result in increased

community intervention in CCBC, whist Javanparast cited that trust was a key barrier to delivering SP intervention, and Kellezi reported that individuals felt a greater sense of community after having engaged in the SP intervention.

3.10 Chapter Summary

In this chapter the systematic review process including the background of the review, the literature search strategy, quality assessment and results were outlined. The purpose of this systematic review was to gain insight into the current skillsets of link workers dealing with individuals with complex cases. This systematic review sought to understand the knowledge base into the research of LW skillsets in order to decide whether further research was necessary. This systematic review found that LWs feel that training is needed to ensure improvements in SP deliverance across multiple interventions (Lang *et al.*, 2011; Bell and MacDougall, 2013; Majee *et al.*, 2019; Wildman *et al.*, 2019; Wallace *et al.*, 2020). Training is available for a limited number of training needs (Wallace *et al.*, 2020), and there is evidence to suggest that training can improve LW competence and confidence (Black *et al.*, 2014). In order to guarantee LW uptake for training, encouragement from the managers of the LWs is essential (Bell and MacDougall, 2013; Vareilles *et al.*, 2015). Further research into the research area of LW training is required. Due to this need for further research, the authors will report the results of semi structured interviews with social prescribing coordinators in Chapter 4.

3.12 Strengths and limitations

All of the 14 included papers except for one where of a high quality assessment and the remaining study article was deemed moderate in quality. This review had a global perspective, and four of the included study articles were based in the UK. The broad timeframe allowed for the identification of three decades of development of research pertaining to the skills of social prescribing link workers.

In addition, there was only one included study article which used an entirely quantitative methodology, the remaining studies used qualitative and mixed methodologies with small sample sizes. Due to the diversity in names of SP intervention and LW job roles, other titles

found to be missing from the search terms used in this systematic review, included 'community referrer', 'living well worker', 'service broker' and 'triage worker' (Kinner *et al.*, 2013; NALW, 2019)

3.13 Conclusion

This systematic review demonstrates that there is a need for training for the role of link worker, and that link workers are seen to provide 'social cures', but the role of link worker does not provide financial stability for the link workers themselves and therefore, the role attracts less experienced young people who are mainly female. This lack of stability, could act as a barrier to entry for individuals considering the LW profession given that unless training is provided by the employers, LWs would face difficulty funding additional training themselves. SP as a 'social cure' is effective in addressing wider factors which affect service-user wellbeing. Where males are working as link workers, there are sometimes negative reactions from communities in some areas of the globe e.g. Bangladesh (Bloom, Standing and Lloyd, 2008), because of needs predetermined by services users within the rural community. On a global level, there is gender inequality in health, especially within lower level intervention. The systematic review findings presented in this chapter indicate the need for further research, further key points of inquiry have been identified, which include the question of 'what training is currently available for LWs?'; 'is the training currently available accredited by a health governance body?'; 'why does there appear to be a gender bias in the LW role?', and 'does the LW role sufficiently remunerate LWs?',.

Chapter 4 - Qualitative semi-structured interviews with key stakeholders

4.1 Introduction

Following the identification of key findings from the systematic review results in Chapter 3, it was decided that semi-structured interviews with key stakeholders responsible for managing LWs signposting Social Prescribing (SP) interventions should be conducted. The systematic review found that professional development training was not available for all training needs, accredited training was a need expressed by link workers (LW), and endorsement of training by those managing the LWs encourage participation in training. It is on this basis that it was decided to conduct qualitative interviews with Social Prescribing Coordinators in Wales. This chapter outlines the semi-structured interview process and provides descriptive reporting of results from the data collected.

The primary objective of the semi-structured interviews was to gain insight into the skills and training available for LWs in SP from a managerial perspective. In addition, the Social Prescribing Coordinators were asked to share their perspectives on what kind of training is valued for their role in commissioning SP interventions to members of the community living with complex care needs.

Semi-structured interviews are in-depth interviews seen in qualitative methodology, which are often used by a range of healthcare professionals in research (Jamshed, 2014a). Semi-structured interviews follow the format of that the interviewer asking predetermined core questions on a specific point of inquiry.

Interviewers will ask follow-up questions based upon the response of the interviewee to provide further context. Given the richness of semi-structured interview data, semi-structured interviews are usually recorded to ensure all verbal data is collected. Recordings allow for verbatim quotes to be recorded and analysed. Given that semi-structured interviews are a part of qualitative methodology, thematic analysis was employed in this study to contextualise the findings of this study and to draw key points of further discussion (Bryman and Burgess, 1994). Thematic analysis within semi-structured interviews allows for the researchers to draw parallels between the varying perspectives of different interviewees within the sample (Braun and Clarke, 2006).

The Interview Schedule

The semi-structured interview comprised of 15 questions prepared for the purpose of this study. All the questions in the interview schedule fell into one of the following categories: social prescribing interventions; demographic information; information about the Social Prescriber coordinator role; funding; qualifications, skills and training; and peer support. The themes of the semi-structured interviews were derived from the key findings of the systematic review in Chapter 3.

Methods

The Social Prescribing Coordinators interviewed are currently based across Wales, UK. The principal researcher (AM) interviewed key stakeholders in SP (n=6). All six stakeholders were SP managers with the same kind of work role in Wales. Given the COVID 19 pandemic, the interviews were conducted over the video communications platform Zoom (*Zoom Video Communications platform*, 2020). Participants received information sheets and consent forms electronically, however given that the interviews took place over the internet, verbal consent was taken at the beginning of the interview, and the stakeholders were made aware of their right to withdraw their data during and after the interview data collection. The length of the interviews were between 12 and 51 minutes, and were audio recorded on the videoconferencing software Zoom. The answers to each of the interview questions asked were transcribed into Excel (*Microsoft Excel Spreadsheet Software*, 2021) verbatim by the Masters student who also conducted the interviews. The themes were developed following completion of the data capture *(a posteriori).*

4.2 Semi-structured interview results

In this section the results of the semi-structured interview will be presented; the participant demographic information, the Social Prescribing Coordinator role and funding

The author of this thesis (AM), a Masters by Research student, funded by a KESS2 scholarship, conducted all the semi-structured interviews with selected individuals working as Social Prescribing Coordinators. The interviewees were identified as key stakeholders in SP around North Wales by regional commissioners of SP services. The criteria for selection

was managing a team of LWs and coordinating the deliverance of SP on a local or regional level.

4.2.1 Participant demographic information

Of the total number of SP coordinators interviewed (n=6) 67% were female and 33% male (see Table 7).

Table 7 Gender of interviewees

Gender	Number	Percentage
Male	2	33%
Female	4	67%
Total	6	100%

The qualitative interview data was analysed within 4 themes based on the questions and responses provided (Ritchie *et al.*, 2013) the four categories were as follows:

1. Social prescribing role – This theme comprises of insights into the job roles of the interviewees, their experience in the field and the type of SP activities delivered through their organisation. Understanding the roles of the SP coordinators and the variety of different SP activities provides context to the current LW skills mix.

2. Funding – This theme outlines the sources of funding for SP projects which include staffing costs of LWs and SP coordinators. Understanding how much funding a SP project receives can provide context into the level of training LWs have currently, and also how to allocate funds for future training and professional development.

3. Peer support – This theme takes in to account the type of support that is available to LWs.

4. Training – This theme includes the type of training that LWs and SP coordinators have undertaken, the types of upcoming training, and the SP coordinators views pertaining to essential skills of LWs. This theme explicitly relates to the training and skills that LWs currently have.

4.2.2 The Social Prescribing Coordinator role

SP coordinators were asked to outline the SP activities delivered through their organization in order to have a greater knowledge of the breadth and depth of SP intervention. Results show that 83% of SP coordinators commission the deliverance of 'community-led' SP intervention. These activities include gardening, arts and cultural activities, life coaching, social groups and walking groups. Having more knowledge on which SP activities are currently offered will help when constructing an SP training pathway and curricula.

"Our project is specifically linked to GPs surgeries…"

"Some are based in Primary Care…"

(Interviewee 6)

A range of titles were reported by SP coordinators, which include: Chief Officer, Exercise Referral Coordinator, Community Wellbeing Team Leader, Programme Director, Business Development Officer and Project Lead. As all six SP coordinators had slightly different job titles, it was not possible to group them and to analyse by sub-group role. For example:

"I am the Project lead for the Social Prescribing project"

(Interviewee 1)

"My role is Business Development Officer"

(Interviewee 2)

"My formal job title is Programme director"

(Interviewee 3)

To understand the amount of experience SP coordinators had in their roles, SP coordinators were asked to report their tenure in their current roles. Results show that SP coordinators have occupied their roles on average of 4 years and 5 months with a range of 2 years and 6 months to 9 years.

"[I've been working in my role] for about two and a half years"

(Interviewee 1)

To determine the amount of experience within the field of SP, SP coordinators were asked to report their total amount of experience. Results show that the SP coordinators have worked within SP for an average of 11 years and 8 months, with a range of 3 to 20 years.

"I have been doing that [Social Prescribing] since about 2003 so about 16 years"

(Interviewee 1)

4.2.3 Funding

To understand the size of the teams delivering SP, SP coordinators were asked to indicate number of LWs that they managed. SP coordinators reported an average of 35 LWs within a team with a range of 2 to 150 LWs.

"I have two Link Workers… and we have a part-time admin support"

(Interviewee 2)

To understand the contractual obligations SP Coordinators, SP Coordinators were asked to state the duration of their contracts. 50% of the SP Coordinators interviewed were on Fixed-term contracts and 50% were on permanent contracts.

"I am on a fixed term contract until March 2021"

(Interviewee 4)

"Mine is a permanent role, of which Social Prescribing is a part"

(Interviewee 2)

To gain insight into the ways in SP Coordinators are paid, SP coordinators were asked to state the nature of their funding. 50% of the SP coordinators were paid via funding and 50% of the SP coordinators were paid via core funding.

"[I am funded by] grant funding, it's called the Integrated Care Fund"

(Interviewee 4)

When asked to state where the LWs that the SP Coordinators managed received their salary, the SP Coordinators reported that all the LW on their teams are paid via funding.

"Yes, the project is fully funded by the Welsh Government. The salaries and all the related costs"

(Interviewee 2)

The funding availed to the SP Coordinators for SP intervention includes Welsh Government funding, Local University Health Board funding, GP clusters and core Local authority funding.

Understanding how SP projects are funded (including staffing, and training) allows for more insight into potential ways in which a LW training pathway can be funded.

4.2.4 Peer support

To understand the level of support available to LWs to carry out their role, of the SP Coordinators were asked if the LWs they supervise received peer support. All of the SP Coordinators reported that the LWs they supervise had access to peer support. 83% of the SP Coordinators reported that 'intra-team' peer support is available, whereby LWs can discuss challenges and obstacles with the other LWs in their team and also with their line manager. 33% of the SP Coordinators reported that the LWs on their team received peer support from the Social Prescribing Network (SPN). 17% of the SP Coordinators reported that peer support was available through local authority initiatives i.e. counselling. Understanding the level of peer support available to LWs is essential, as it may be through their peers they receive recommendations of which training courses to undertake in order better carry out the role.

"We have regular supervisions and we have team meetings on a monthly basis"

(Interviewee 4)

"Our closest GP surgery we've been working with for 25 years on Social Prescribing we've always been here as a charity offering Social Prescribing it just didn't have the buzz name"

(Interviewee 6)

4.2.5 Training

To understand which skills the SP Coordinators perceive as necessary for LWs delivering SP interventions, the SP Coordinators were asked which skills they felt were most necessary to carry out the LW role. Understanding which skills SP coordinators feel are most necessary to carry out the LW role adds a more insight into which skills LW will require in the future.

It was found that 87% of SP Coordinators stated that personal skills, (i.e. communication and listening skills) were amongst the most essential skills that LWs require. 33% of SP Coordinators reported that adaptability was amongst the most essential skills that LWs

require. Other key skills mentioned were innovation, the ability to follow through, and suicide prevention training (e.g. Applied Suicide Intervention Skills Training), and management and organizational skills.

"ASIST, which is suicide training, has helped talk people down (from a suicide attempt) on a number of occasions"

(Interviewee 2)

To identify any gaps within training needs, SP Coordinators were asked to state the training provided for the LWs within their teams. SP Coordinators cited was a vast range of training. See the following quotes from each of the six interviewees. By identifying which training courses LWs currently engage in provides greater context into the skills LWs currently possess.

"We do the [training] around the Future Generations Act… We try to encourage them to do Dementia awareness training… we've got a team that like doing different things"

(Interviewee 1)

Interviewee 1 reported that training to understand the Future Generations and Social Services Acts and dementia awareness training (National Assembly for Wales, 2014; Welsh Government, 2015a). Interviewee 1 also mentioned that LWs are also able to present other training they wish to complete.

Interviewee 2 reported that bespoke SP training was available via a module delivered by a local university and mental health charity.

"I have links with [a local] University and they have a Link Worker course and they gave me 2 free courses … and then [our research funder] developed its own course for the Link Workers"

(Interviewee 2)

Interviewee 3 reported SP training at [a local] University.

"Training [at a local University] is available and learning on the job"

(Interviewee 3)

Interviewee 4 reported Health and Safety training, the Prince 2 management program, and asset based community development training.

"The ABCD which is the Asset Based Community Development training is one of the main ones [training] staff have been required to undertake… and also a project management qualification such as the Prince 2"

(Interviewee 4)

Interviewee 5 reported Motivational interview training, Public Health Wales' Online course 'Making every contact count' and the safeguarding vulnerable adults course.

"The referral staff [some of them] have had motivational interview training and everyone has making every contact count from Public Health Wales… they also need to have completed safeguarding training of vulnerable adults…"

(Interviewee 5)

Interviewee 6 reported training on the online SP platform Elemental, motivational interview training, and admin training.

"We've got a training for Elemental [software] training next week"

(Interviewee 6)

When asked which types of training would benefit an individual carrying out the role of SP coordinator, most participants responded with some form of leadership and management training, half of the SP Coordinators mentioned the Prince 2 management program and asset based community development training. A third of the sample highlighted Health and Safety training. Some mentioned Innovation, Public Health training and the Level 3 exercise referral course respectively as requisites to effectively carry out their role.

"…in terms of the manager's role … to have managerial experience of at least two years and something like the ILM (Introduction to line management) are the main criteria for the role"

(Interviewee 4)

Other comments related to skills and training are presented here: Interviewee 1 responded that the community voice is the most important thing and that interventions should be tested to find out what is effective and allow the specific projects to evolve in order to suit community needs.

"…you have to give people space and let the project evolve to suit the communities better"

(Interviewee 1)

Interviewee 2 responded that training should be availed to LWs via peer mentoring and that a clear pathway is needed for the various different types of SP.

"I would say I am completely sold on Social Prescribing because I have seen the results… the right people, in the right place, with the right training can make a difference to people's lives and we can prove it"

(Interviewee 2)

Interviewee 3 said that training should follow a suite format as opposed to a one size fits all format to accommodate different brands of SP.

"What I would like to see is, that the grant funding becomes core funding so that people have more security in their roles and will therefore develop in their roles"

(Interviewee 3)

Interviewee 4 highlighted that communication and organization are imperative.

"With the role itself, you've got to be a real people person and communicate with members of the public from various different backgrounds and ethnicities… organisational skills are second to none"

(Interviewee 4)

Interviewee 5 expressed concerns about the difficulty to hone in on specific training courses and the paucity of a clear structure, going on to say that SP requires a course that allows LWs to learn what is important, what is of benefit, signposting and finally troubleshooting.

"The field of Social Prescribing is so broad… there's something missing in between a vocational qualification and making every contact count, just some training around how to ascertain what is important to people, what would be of benefit and make the links of what is going on locally… and deal with any barriers that come up "

(Interviewee 5)

Interviewee 6 responded that if a LW wants to make sustained change to patient lives a therapy element is required and solely signposting. Therefore, a form of Cognitive Behavioural Therapy training is required along with familiarity with NICE guidelines is essential.

"we're following the NICE guidelines on how you initiate change with people… there has to be an element of appropriate listening and how you can use Cognitive Behavioural Therapy to influence people to make changes in their life *"*

(Interviewee 6)

4.3 Chapter 4 Summary

In this chapter, the semi-structured interview process including the rationale behind why interviews were conducted and results were outlined. The purpose of the semi-structured interviews was to gain insight into the skills and training available for LWs in SP based on the key findings of the systematic review in Chapter 3. Information was also gained on funding and types of contracts held by current link workers in Wales, and what kind of training they would like to have in the future to develop their roles. Most SP Coordinators reported that 'Personal skills' are the most essential skills required by LWs in SP intervention. Personal skills refer to communicational skills, empathy and the ability to listen to the needs of the service user (NALW, 2019). Training is available for LWs, however the training undertaken varies depending on the type of intervention delivered by the LW. All the LWs managed by

the SP Coordinators receive their salary from external funding, one interviewee cited that this is an obstacle for LW development

"What I would like to see is, that the grant funding becomes core funding so that people have more security in their roles and will therefore develop in their roles"

(Interviewee 3)

The semi-structured interviews conducted with the key SP stakeholders yielded rich information and insight into LW training. To achieve a full portrayal of LW needs, it was decided that further insight was needed through the use of a LW questionnaire. Chapter 5 will outline the results of a questionnaire shared with LWs in Wales.

Chapter 5 - Contingent Valuation Questionnaire results

5.1 Introduction

This chapter presents the descriptive statistics from the survey of Link Workers (LW) which was designed to gain insight into level of education, past and current training needs as well as elicit LW value to undertake training. The questionnaire questions were based on key finding from the semi-structured interviews with Social Prescribing (SP) coordinators that commission and deliver SP interventions and identify the training needs of LWs to undertake their role.

The questionnaire contained 20 questions which were divided into the following categories demographics, role, and explored preferences and choice regarding training requirements. The Contingent Valuation Method (CVM) was applied to examine the value that respondents place on accessing training and elicits respondents Willingness To Pay (WTP) for goods not normally traded in the open market (Carson, 2000). This study applies the non-market valuation techniques of CVM in order to value the benefits of increased access to training for LWs (Bonato, Nocera and Telser, 2003). The value assigned to training was elicited via an exponential payment ladder to assess the value LWs place on the benefits of professional development training and networking. Following the valuation exercise, respondents were asked follow up questions to understand the choices and preferences of respondents and the value placed on accessing training along with the constraints and rationale for the responses and valuation estimates.

Due to the COVID 19 pandemic the questionnaire, which was originally developed in a paper format was placed on KoBoToolbox an open source digital questionnaire platform (*KoBoToolbox Data Collection Tools for Challenging Environments*, 2020). KoBoToolbox was selected as when compared with other digital platforms the KoBoToolbox platform did not collect the IP addresses of respondents, which would help maintain anonymity in compliance with the General Data Protection Regulation (GDPR) which ensures safeguarding of personal data in healthcare research (*GDPR: technical guidance - Health Research Authority*, 2018). In addition, the questionnaire was available in two formats English and

Welsh with both versions shared amongst LW networks, with SP Coordinators and via online message boards. The majority of data returned was in English (n=51) and the remaining data was in Welsh (n=3).

The data from the questionnaire was analysed with Microsoft Excel and the Map data was created using Tableau Desktop Professional (*Tableau Desktop*, 2020; *KoBoToolbox Data Collection Tools for Challenging Environments*, 2020)

The questionnaire was tested by means of two rounds of pilots with stakeholders in SP and healthcare. Following amendments made to the questionnaire post piloting the questionnaire was distributed. Weekly reminders were sent out via email to a network of SP organizations including via the Wales Council for Voluntary Action (WCVA) and the Wales School for Social Prescribing Research (WSSPR) to stimulate completion of the questionnaire. The questionnaire was available to LWs for four weeks from 11th May 2020 until Friday 5th June 2020 to allow LWs delivering SP enough to time complete the questionnaire. The actual number of LWs in Wales is unknown and so not all LWs in Wales were invited to take part in the study which is why all the relevant networks were solicited in order to cascade the questionnaire link to others. The SP networks sent out weekly reminders to stimulate questionnaire completion. The average time spent filling out the questionnaire was 7 minutes, this shows that it was accessible and comprehensible for the sample population. The questionnaire was completed by community connectors, wellbeing officers, link workers, exercise instructors, and local asset coordinators across Wales, for the purpose of this research the sample population will be referred to as LWs given their job roles and responsibilities are similar. Purposive sampling was used for questionnaire, in order to ensure representation from multiple perspectives within the given sample, this technique allows researchers to determine a common themes amongst the sample (Palinkas et al., 2015).

5.2 Results

In this section, the results of the LW questionnaire will be outline. Specific focus will be placed on themes within the data i.e. the LW profile, the LW role and LW valuation of professional development training using the Contingent Valuation Method (CVM). The CVM

will elicit the value that LWs place on training based on their perceptions of the benefits gained and provide reasoning why they assigned this value to training based on their household's financial situation

5.2.1 Link worker profile

The profile of the respondents when examining gender indicated that the sample population (n=54) was 87% female and 13% male (see Table 7).

Table 7 Gender of respondents

Gender	Percentage
Female	87%
Male	13%
Total	100%

To gain a better understanding of the age of the sample population, respondents were asked to report their year of birth. Respondents (n=53, n=1 respondent with N/A) reported an average age of 48 years, the youngest age reported was 24 and the oldest age reported 66 years old (see Table 8).

Table 8 Age of respondents

	Age of respondents (n=53)
Min	24 years old
Max	66 years old
Average	48 years old
Median	50 years old
Mode	48 years old
	50 years old

In order to understand the range of educational attainment achieved among the sample population, respondents (n=54) were asked to report their highest level of education. Results show that 4% of LWs have GCSEs and 30% of respondents have 'A LEVEL/BTEC', a

further 43% of respondents have an 'Undergraduate degree', with 23% respondents holding a 'Masters' qualification as outlined in (see Table 9).

Table 9 Link Worker education

Highest level of Education	Percentage
GCSE	4%
A Level/ BTEC	30%
Undergraduate Degree	43%
Masters	23%
Total	100%

In order to gain a clear insight of where SP interventions are being delivered and where LWs live, respondents were asked to state their work and home postcodes. These postcodes were then applied to the Welsh Index of Multiple Deprivation (WIMD) 2019 to understand the areas and geographical spread of working and residential settings. The WIMD was selected as the tool of multiple deprivation measurement given that SP tackles the problems of individuals living in areas of high multiple deprivation (Cawston, 2011). The social determinants of health are environmental factors which include education, housing, and health services that affect and individual's health (Ellis and Fry, 2010). Multiple deprivation measurement is an appropriate means providing tangible evidence of the social determinants of health given that the eight domains of the WIMD and the social determinants of health feature similar components including housing, access to health services, and education (Wami *et al.*, 2019). The eight domains of WIMD are Access to services, Community safety, Employment, Health, Education, Housing, Income, and the Physical Environment (Welsh Government, 2019). These domains formulate the ranking of Lower Super Output Areas (LSOA) which indicates the overall level of deprivation of an area within a Local Authority (Welsh Government, 2019).

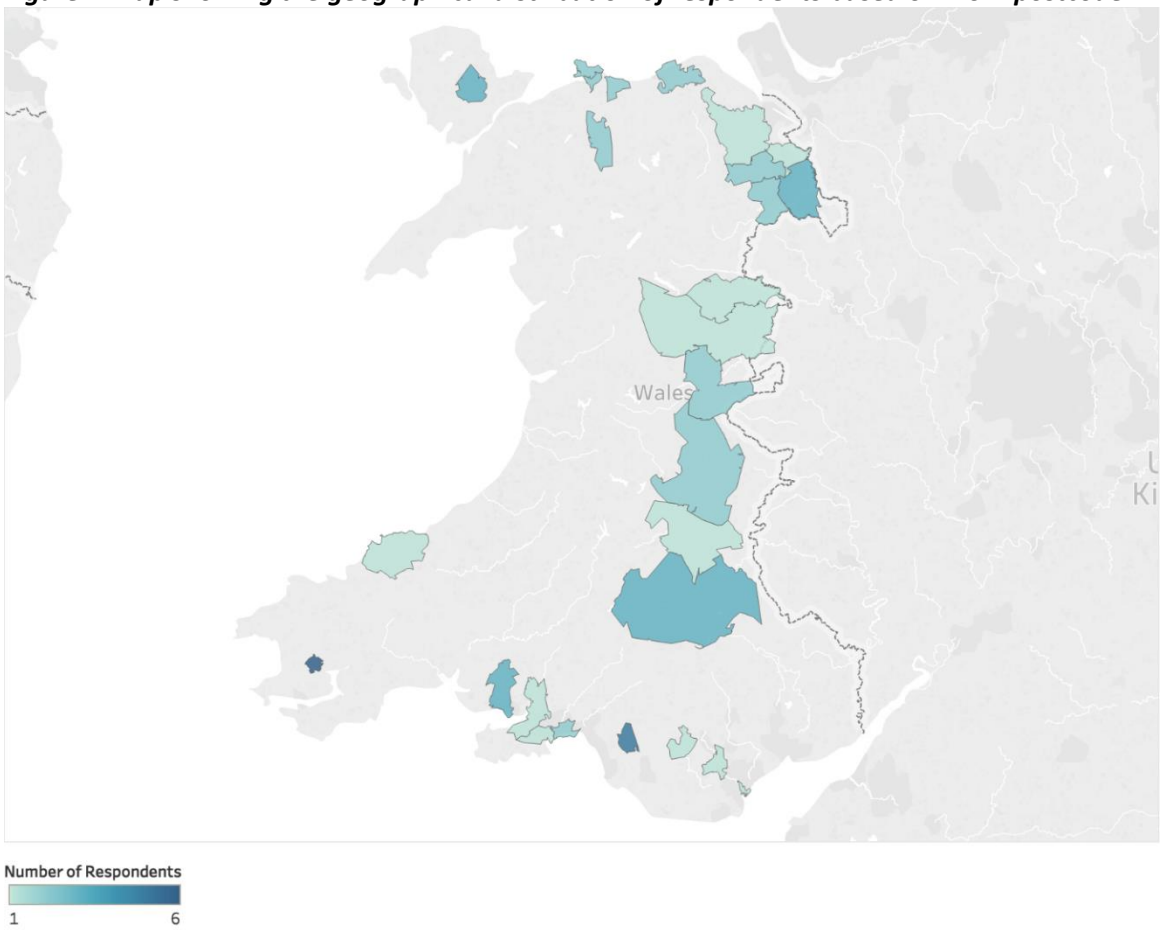
Results reveal that all (n=54) (100%) of the respondents work in Wales (the geographical distribution of the respondents is shown in Figure 2). The average overall rank of Lower Super Output Areas (LSOA) in Wales amongst respondents was 737 out of 1909 which

indicates that respondents reside in 30-40% of the most deprived areas in Wales. The lowest LSOA home ranking from respondents was 19 which is in the top 10% of the most deprived areas in Wales. Conversely, the highest LSOA work ranking reported was 1906 which is amongst 50% of the least deprived areas in Wales. The median ranking was 531 which is within the 20%-30% of the most deprived areas which is outlined in Table 10. Results indicate that 54% of respondents live in a LSOA that ranked below 20%-30% of the most deprived areas in Wales. The LSOA rankings show that the LWs are working in high areas of deprivation, which would explain the presence of SP interventions to mitigate against the social determinants of health (Cawston, 2011).

Table 10 WIMD deprivation rankings of respondents at work

	Minimum	**Maximum**	**Average**	**Median**
LSOA score (out of 1909)	19	1906	737	531
Percentile of deprivation in Wales (%)	10	50	30-40	20-30

Figure 2 Map showing the geographical distribution of respondents based on work postcode.



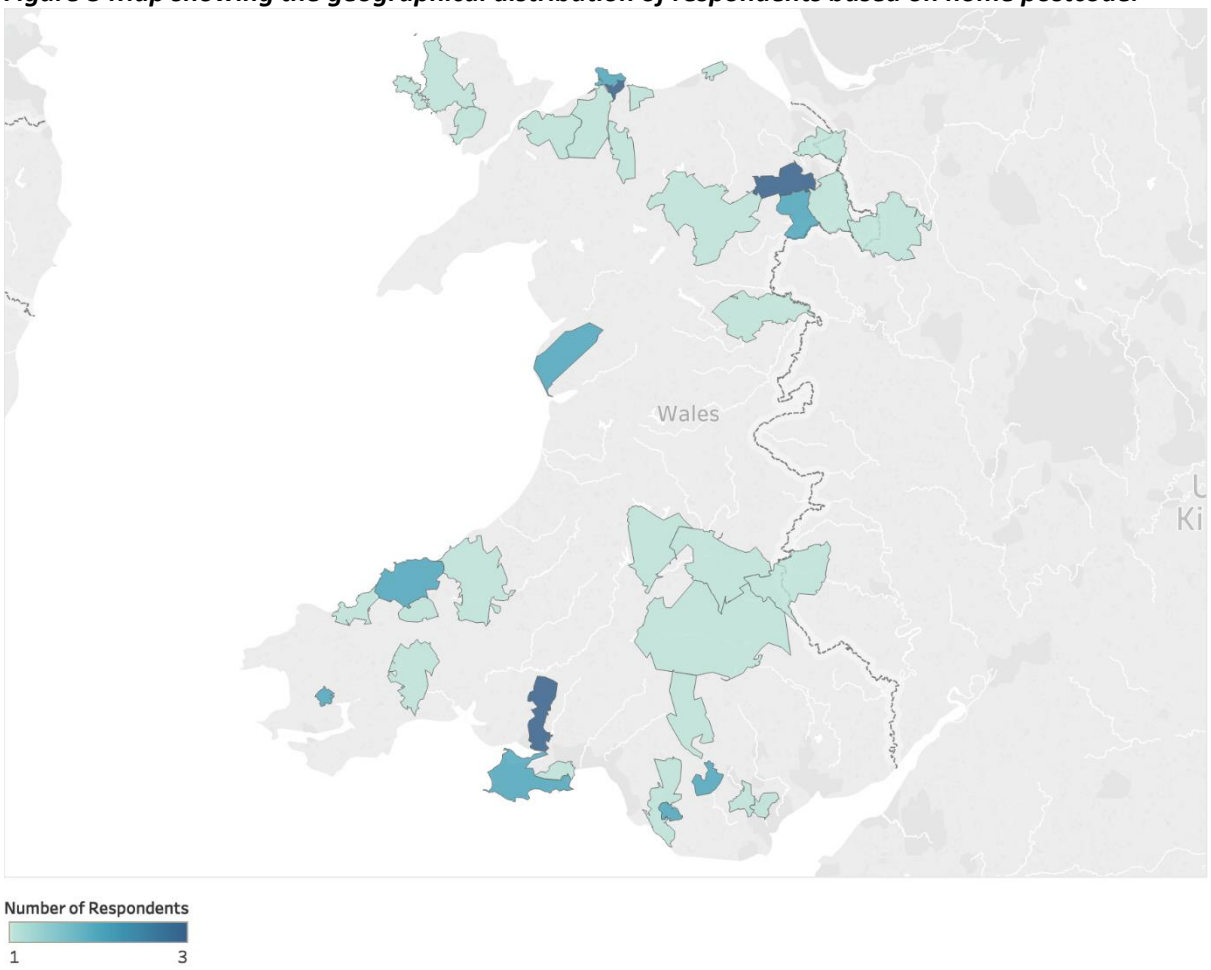
To gain insight into local communities that LW reside in respondents were asked to report their home postcodes. Residential postcodes were provided by, 94% (n=51) of respondents responded and the remaining 6% (n=3) abstained from providing their residential postcode. The geographical distribution of the respondents shown in Figure 3, when compared with figure 2 shows that some LWs travel into neighbouring communities to deliver SP. The proximity between the reported work and home addresses could be attributed to the fact that majority of the respondents (87%) are female with an average 48 years of age, which could infer that this demographic is likely to have a family and children, therefore making it beneficial to live closer to work (Thomas, Serwicka and Swinney, 2015).

When compared with the Welsh Index of Multiple Deprivation (WIMD) 2019, the average overall rank of Lower Super Output Areas (LSOA) in Wales amongst respondents was 997 out of 1909 which is among 50% of the most deprived areas in Wales. The lowest LSOA of respondent's home addresses' was 78 among the top 10% of most deprived areas in Wales. The highest LSOA reported was 1906 amongst 50% of the least deprived areas in Wales. The median LSOA reported was 1104 amongst 40%-50% of the least deprived areas in Wales. The results show that the LWs are working in areas that are significantly more deprived than the areas in which they live.

Table 11 WIMD deprivation rankings of respondents at home

	Minimum	Maximum	Average	Median
LSOA score (out of 1909)	78	1906	997	1104

Figure 3 Map showing the geographical distribution of respondents based on home postcode.



To understand the contractual obligations of LWs in SP, respondents (n=54) were asked to state the nature of their current contract of employment. Results indicate that 65% of respondents are employed on a full time contract with 35% of respondents employed on a part time contract. Subsequently, respondents were asked to indicate the number of working hours per week as stipulated in their contract of employment in order to understand what the working week of a LW resembles. Results show that LWs work between 8 to 45 hours per week, with an average of 27.5 hours worked per week. The most common working week was 37 hours per week (n=21). UK Worker legislation states there is no specific hourly obligation that a worker must fulfil to be deemed as part-time, however full-time workers will have a 35 hour per week hourly obligation (*Part-time workers' rights* , 2020).

In order to ascertain the level of remuneration that part time and full time LWs working in different sectors receive, respondents (n=53) were asked to indicate their current salary. Given that part-time and full-time workers were present in the sample, respondents were asked for as a salary per annum or as an hourly rate in £GBP. In order to make the analysis coherent, the annual salaries were equated to hourly rates based on a 46 week working year when you take away annual leave and public holiday entitlements. A 46 week working year was chosen as UK legislation states that full-time and part-time workers are entitled to 6 weeks of annual leave (*Holiday entitlement legislation*, 2020). The hourly rates of pay ranged from £8.75 to £29.38, with an average hourly rate pay of £14.20 as outlined in Table 12. The average hourly rate of pay of £14.20, equates to an average of £24,495 per annum for a LW employed on a full time contract. In addition, 2% of respondents did not indicate their income. By asking LWs their level of remuneration for their role, this provides context about the amount money LWs may have to invest in skills training and professional development.

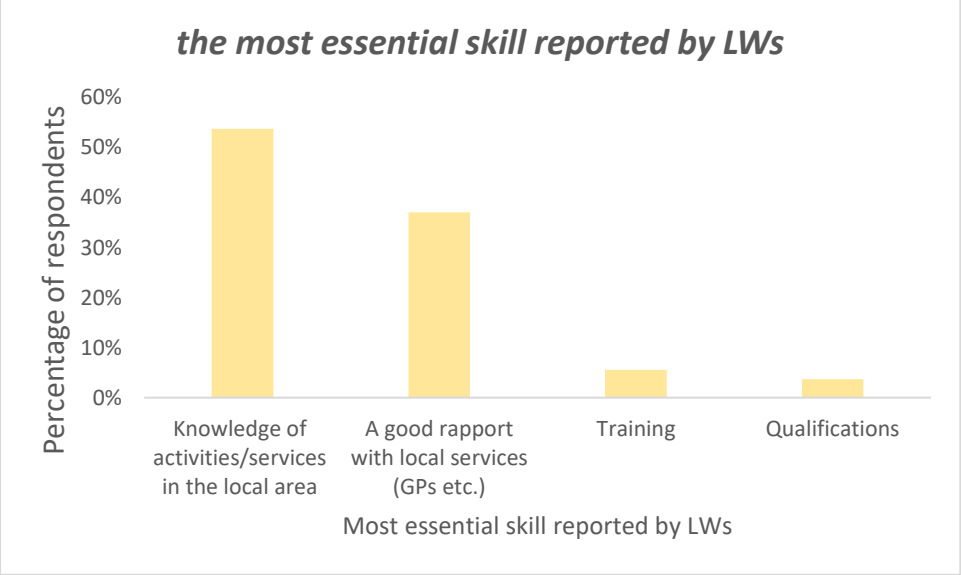
Table 12 Hourly rates of respondents based off a 46 week working year

	Hourly rates of respondents
Min	£8.75
Max	£29.38
Average	£14.20

5.2.2 The Link Worker role

To add the relevant knowledge LW skills mix, respondents were about respondents' perceptions of the most essential aspects required to undertake the role of a LW, respondents (n=54) were asked to indicate what would respondents consider important characteristics in delivery social prescribing interventions. By asking LWs which skills they feel are the most essential Results indicate that 54% of respondents consider having a knowledge of activities/services in the local area as essential to undertake the LW role. In addition, 37% of respondents suggest that having a good rapport with local services (GPs etc.) is vital to the role with a further 6 % of respondents indication that training and 4% qualifications are important to the role of LW in delivering SP interventions (see Figure 4).

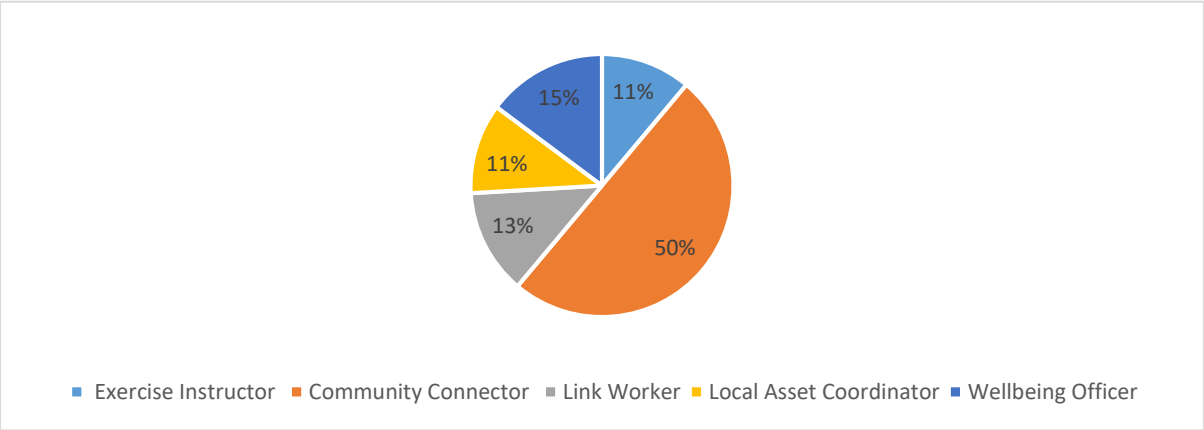
Figure 4 the most essential skill reported by Link Workers



To understand the perceptions of LWs roles by those delivering SP intervention, respondents (n=54) were asked which the title of their individual role. Results indicate that 50% of respondents identified with the title as a 'Community Connector', 15% of respondents identified with the title 'Wellbeing Officer', 13 % of respondents identified with

the title ‘Link Worker’, 11% of respondents identified with the title , and 11% of respondents identified with the title ‘Local Asset Coordinator’ (see Figure 5). Understanding the different roles of those delivering SP intervention allows for inference of the current skills they possess and which skills will be needed in the future.

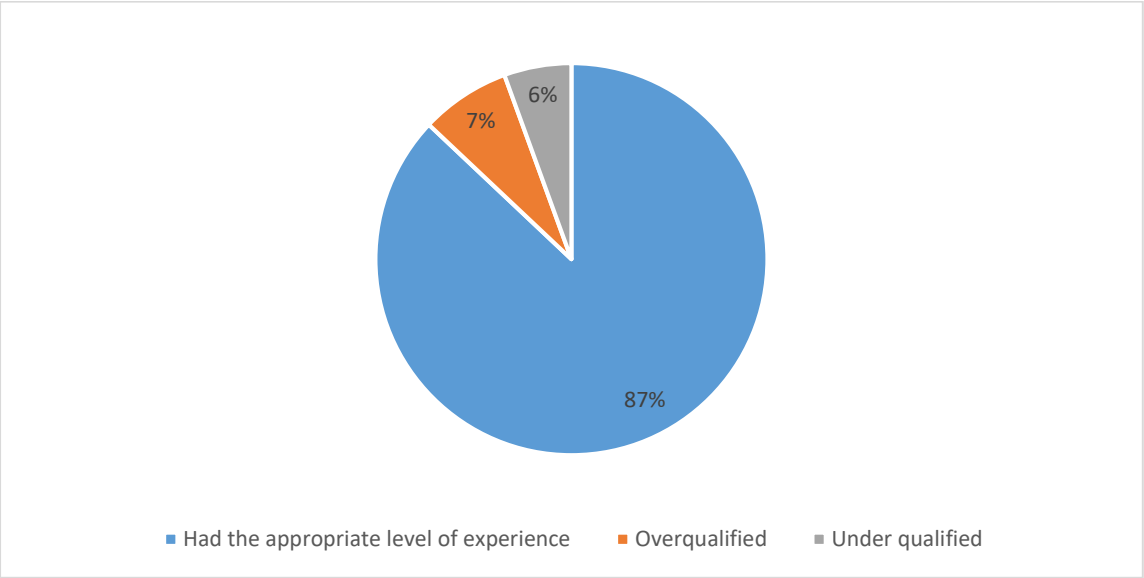
Figure 5 Roles of Link Workers



To determine whether LWs valued accredited educational training for effective SP deliverance, respondents (n=54) were asked if it was essential for a LW to have a recognised educational qualification. Results indicate that 69% of respondents do not consider that having a recognised educational qualification is necessary to effective SP provision however, 31% of respondents consider that having an educational qualification as essential for undertaking the role of LW.

To gain greater insight into LWs estimations of their skillsets prior to entering their role in SP, respondents (n=54) were asked to report the level of experience they felt they possessed at the time of starting their current role. In addition, results indicate that 87% of respondents felt that they had the appropriate level of experience, 7% felt that they were overqualified, and 6% that they felt under qualified (see Figure 6).

Figure 6 Respondent's self-perception of experience at commencement of current role



To understand the level of experience that respondents had in their roles as LW's and in the delivery of SP interventions, respondents (n=54) were asked to indicate their length of experience in a LW role. Results indicate that experience ranged from 1 to 29 years of experience in SP, with an average of 4 years and 10 months experience in the role. The median number of years' experience reported was 3. The mode numbers of years of experience were 1 and 3 years (N=15). In addition, results identified that 80% of respondents indicated having 5 years or less experience as a LW in SP.

In order to determine which sectors and organisations are employing LWs to deliver SP interventions, respondents (n=54) were asked to indicate which sectors and type of organisation that they were employed by. Results indicate that 64% of respondents are employed by charitable organisations within the third sector with a further 30% of respondents employed by a local authority, 4% of respondents are employed by a University Health Board, and 2 % of respondents are employed by a 'Community Council' as outlined in Table 13.

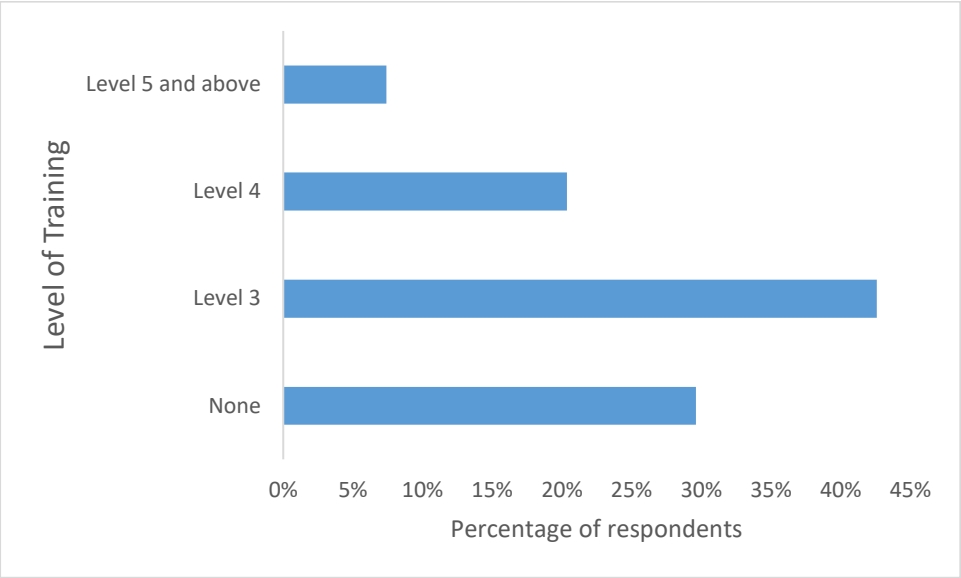
Table 13 Organisations that employ respondents

Sector of employment in SP	Percentage
Third Sector (Charity)	64%
A local authority	30%
A University Health Board	4%
Other (Community Council)	2%
Total	100%

In order to determine the tenure of LWs within their current roles, respondents (n=54) were asked to indicate the length of time in their current role. The tenure of respondents within their current roles ranged from 2 months to 17 years. The average tenure of respondents in their current role was 3 years and 2 months. The most common tenure of respondents in their current roles was 1 year (n=7). It was equally important to determine the nature of the contracts to give further context to the length of tenure in roles of LWs. Respondents (n=54) were asked to report the duration of their current contract. Results indicate that 69% of respondents are currently on a 'Fixed-term' contract, and the remaining 31% are currently are employed on a permanent contract.

In order to understand the training needs of LW's, respondents (n=54) were asked to indicate if they had participated in any further training to facilitate their development as a LW. Results indicate that 70% of respondents have completed training to facilitate their development as a LW and 30% of respondents have not completed any training. Following respondents were asked to indicate the level of training that they have completed, 43% reported indicated they had completed 'Level 3' training with a further 20% of respondents reported having undertaking Level 4 training , and 7% of respondents indicating they had undertaken Level 5 and above (see Figure 7).

Figure 7 Levels of training accomplished by the link workers.



To understand the scope of training undertaken by LWs, respondents were asked to indicate the training they had undertaken to further their development as a LW to add knowledge to the current LW skills mix. Respondents were encouraged to list all the training courses they had undertaken, multiple responses were provided by LWs (which meant that the total percentages of the training categories reported exceeds 100%). The training undertaken fell into four categories: 'Professional Development', 'Physical Health', 'Support Services', and 'Wellbeing'. The specific training as outlined in Table 14 indicates that 58% of respondents had undertaken training that fell under the category of 'Professional Development', 34% of respondents undertaking training under the category of 'Wellbeing', 26% of respondents undertaking training under the category of 'Support Services' and 24% of respondents undertaking training under the category of 'Physical Health'.

Table 14 Table of types of training undertaken by Link Workers

Types of training undertaken by Link Workers
Support Services - 26%
Advice & Guidance (NVQ)
Chartered Institute of Housing (CIH) Training
Dementia Awareness
Domestic Violence
Physical Health - 24%

British Association for Cardiovascular Prevention and Rehabilitation (BACPR) Training
Cardiac Rehabilitation
Exercise Referral
Falls Prevention
Pulmonary Rehabilitation
Sports Massage
Wellbeing - 34%
Autism Management
Bereavement Training
Health & Social Care
Mental Health First Aid
Understanding Mental Health
Professional Development - 58%
Communication Skills
Counselling Skills
Leadership and Management Training
Local Authority Provided Training
Motivational Interviewing
Information Technology Training
Safeguarding
Social Prescribing Training

5.2.3 Contingent Valuation Method (CVM) results

To explore LW choices and preferences in gaining access to training, respondents were asked if a training course was available free of charge which featuring new ways to approach and undertake their role along with the opportunity to network with other LW's would they participate in this training. Results strongly suggest that LW would like to avail of training and networking opportunities with 100% of respondents indicating that they would be willing to participate in training if this is available free of charge.

Then respondents were asked to consider the following scenario, suppose the training course outlined could no longer be offered free of charge and suppose it was not available through the NHS or partner organisations. Respondents were asked to indicate what is the maximum amount they would be willing to Pay (WTP) to access this training. Respondents

were asked to consider what they could realistically afford to pay given their current financial situation. The 13 bid values were outlined on an exponential payment ladder with intervals ranging from £10 to £600. An exponential payment ladder features multiple predetermined payment intervals which allows respondents to indicate their maximum WTP (Uehleke, 2016). In addition, respondents were given the option to pay nothing towards training.

As one of the main objectives of the research was to gather knowledge about the skills of LWs it was important to ask the question about WTP for further training. The results indicated that 61% of LWs were willing to pay towards to training to improve their skills as a LW, with a maximum WTP of £600 and a minimum WTP of £10. On average respondents are WTP £58 to access training featuring new ways to approach to undertake their role along with the opportunity to network with other LWs. The valuation estimates across all bid vectors are outlined in (Table 15). Finally, 39% of respondents indicated that they were WTP nothing towards training and these respondents are considered protest bidders.

Table 15 Elicited WTP responses

Payment ladder bid vectors	Respondent's WTP (%)
£0	39%
£10	11%
£50	28%
£100	5%
£150	13%
£350	2%
£600	2%
Total	100%
Average WTP	£58
Median WTP	£30

5.2.4 CVM Debriefing question

All respondents were asked a follow up questions to understand the rationale for the choices and preferences made in the valuation exercises. To understand the choices and valuation estimates of respondents along with WTP estimates for training follow up questions were asked to after the valuation task. All respondents were asked a series of debriefing question is used to investigate protest bidders answers and identify the reasons why respondents provided their WTP estimates and takes account of respondents who were unwilling to pay towards training. (Carson, 2000). The debriefing question is imperative in gaining insight into respondent's valuations, given that the value assigned to the training is based upon the respondent's perceived benefit gained from the training (Escobar, Barnett and Keith, 1988). This debriefing question is used to investigate protest answers and identify the reasons why respondents are unwilling to pay for training (Whittington and Pagiola, 2011). Respondents who did not engage with the hypothetical scenario indicate this by 'protest bidding'. Protest bids do not portray the respondent's real WTP for a good (Frey and Pirscher, 2019). The explanations for the protest bid can range from ethical issues or other personal motives (Halstead, Luloff and Stevens, 1992).

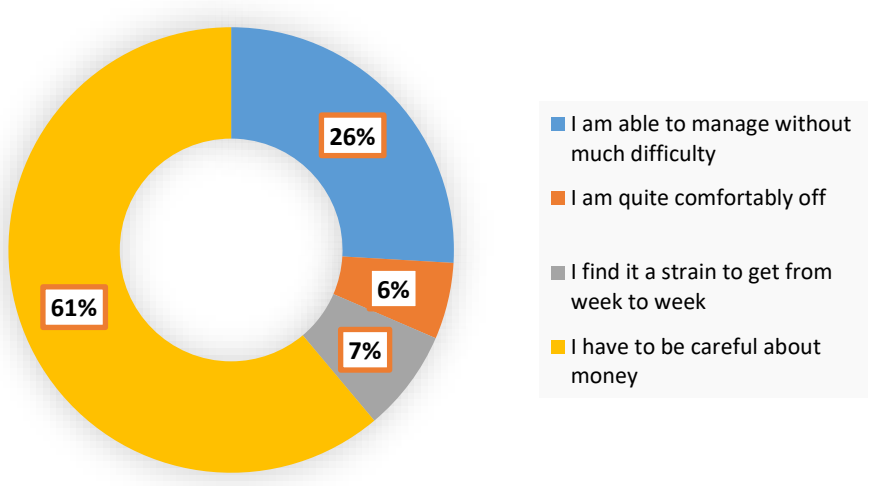
Results demonstrate that LWs place value on training as none of the respondents reported that they were uninterested in the proposed training. Responses to the outlined statements indicated that 19% of respondents reported that the amount chosen reflects what they feel the training is worth, with a further 48% of respondents indicating they should not be responsible for the cost burden of training, and a further 33% of respondents reported that they could not afford to pay for training (see Table 16).

Table 16 Preference behaviour responses

Preference choice	Percentage
I cannot afford such a course	33%
I do not believe that I should pay for such training	48%
The amount chosen reflects how much respondents believe the training is worth	19%
I am not interested in such training	0%
Total	100%

To understand the valuation estimates for WTP for training that were provided, respondents (n=54) were asked to reflect on their cost of living and its effect on them and their household. Respondents were asked to consider four statements and select which of the four statements best described their present situation. Results indicate that 6% of respondents cited that they are comfortably off, 26% of respondents are able to manage without much difficulty. However, 61% of respondents have to be careful about money, and 7% of respondents experience financial strain from week to week (see Figure 8). This financial difficult that the majority of the LWs from the sample experience could be due to the fact that their average yearly salary of £24,495 is below the yearly cost of living in the UK, which is currently £30,284.80 (Office for National Statistics, 2020).

Figure 8 Respondents perception of cost of living



5.3 Chapter 5 Summary

This chapter outlined the descriptive statistics for this study along with the CVM finding on the choices and preferences along with the valuation estimates and WTP for access to training. The questionnaire purpose and sampling process was outlined and how the implications of COVID 19 pandemic impacted of the distribution and accessing the target respondents for this study. The results presented the LW perceptions of the role, identification of the LW role and the LW's WTP for access to training using the CVM approach. The questionnaire also sought to build a profile of LWs by collecting demographical data such as gender, age, contractual obligations, experience, and level of education. The results provided information on the average LW profile, LWs levels of experience and the LW's perceived value and benefit of developmental training. The findings from this questionnaire found that on average LWs are 48 year old females with undergraduate degrees that work within or nearby the communities in which they deliver SP interventions. Despite 70% having already undertaken some form of training, 69% of LWs do not feel that a recognised educational qualification is necessary to the role. When a hypothetical training scenario was proposed, 100% LWs would participate if it were. However, LWs valued the hypothetical training scenario at £58 because they felt that they should not be responsible for the cost burden. LWs reported that they have to be cautious with their disposable income, given that on average LWs earn £24,495 per annum.

The following chapter 6 will draw together the results and finding from chapters 3, chapter 4 and this descriptive quantitative chapter applying CVM to understand respondent's choices and preferences and will discuss the combined results from this study.

Chapter 6 - Discussion

The purpose of this Chapter is to discuss the findings from this KESS 2 Masters by research project which applied a mixed methods research design approach including Contingent Valuation Method (CVM) to estimate the value associated with accessing training among Link Workers. This chapter will also evaluate the research design in this study by outlining and discussing the different methods used, as well as the rationale for adopting these methods and their benefits within this study.

This innovative mixed method social prescribing research will contribute to the growing knowledge base around LW roles and training needs and provide new evidence to support this role. The findings of this research have highlighted the gap in the development of a structured training package of modules for LWs working in the field of social prescribing in Wales. In addition, recommendations for future research will be outlined which could provide insight into how to develop training packages for LWs in Wales.

6.1 Review of study aim and objectives

The aim of this study was to investigate recruitment into social prescribing interventions and explore the skills sets of LWs in conducting their role. The objectives of this study were:

1. To identify current LW skills mix.
2. To identify skills required by LW to further enhance their role.
3. To develop guidance for SP training pathway leading to quality improvements.

This mixed method Masters by research project was successful in meeting its aims and objectives by means of an applied research design which led to the findings shown in Chapter 3 (the systematic review), Chapter 4 (the semi-structured interviews), and Chapter 5 (CVM questionnaire) of this thesis. In Chapter 3, the systematic review identified the need for development of LW skills via developmental training, the semi-structured interviews in Chapter 4 highlighted what training is currently made available to LWs by SP coordinators

and made specific suggestions for what type of training should be made available to LWs in the future, and the CVM questionnaire in Chapter 5 allowed for identification of the current LW skills mix, all of which facilitated and informed the development of the recommendations to advance the SP pathway for LWs in Wales. This SP pathway would allow LWs across different branches of SP to have access to training for the core skills requisite for the LW role.

6.2 Review of methodology

This study adopted a sequential mixed-methodology design which commenced with undertaking a systematic review, which displayed the depth of previously completed research in this field. Building on the finding of the SR, semi-structured interviews were conducted with commissioners and managers of SP interventions to contextualize the results of the systematic review. Finally drawing together the findings from the SR and semi-structured interviews; a CVM questionnaire was developed to gain the perspective of LWs.

The systematic review process was rigorous and followed standard procedures in high quality systematic reviews. The inclusion and exclusion criteria, search terms and objectives for this review have been clearly outlined in the review protocol and were adhered to throughout the SR process (PROSPERO database registration number: CRD42020158721). The protocol will allow for other researchers to replicate this systematic review and build upon it in the future. Decisions made in this review were made in consensus between the author (AM) and both academic supervisors (ML and LHS), to mitigate the effects of bias in the inclusion/exclusion process. The search terms were compiled following consultation with the regional SP commissioner to provide breadth and depth in the search. Furthermore, the CASP (2020) tool allowed for quality assessment and appraisal of the included primary research studies. A narrative thematic analysis of the included study articles was completed and key findings were reported within the systematic review chapter of this thesis (Chapter 3). The key themes that emerged from the systematic review were training needs and capacity building of LW's delivering SP interventions, challenges in delivery of SP interventions and the 'Social solution' for multiple outcomes in complex cases. The results of the systematic review framed the themes of the questions developed

and delivered to key stakeholders interviewed in order to contextualize the results identified in the systematic review.

The aim of the semi-structured interviews (Chapter 4) was to gain insight based on the key findings of the systematic review which found that the variety of training available to LWs is limited. Evidence suggests that semi-structured interviews would yield rich and detailed data on the different types of training available to LWs (Jamshed, 2014b). Six regional SP coordinators and commissioners from across Wales were interviewed and asked about different types of LW training. The interviewees were selected as they were individuals commissioning SP interventions or managing a team of LWs at a regional or district level across north Wales. Given that this research adopted a sequential mixed-methodology design, the 15 interview questions were developed based on the findings of the SR. The questions addressed four themes: the social prescribing role, funding of roles, peer support for LWs, and training for LWs. The audio recording of the interviews allowed the author to engage fully with the semi-structured interviews to ask the relevant questions at the appropriate time during the interviews.

The questionnaire approach is considered a good method of reaching a large mix of LWs from the whole of Wales (Zainudin, Selangor and Nordin, 2016). The CVM questionnaire used in this study was developed to investigate the value LWs place on accessing professional training to develop their skills in their role. This stated preference technique approach was employed in order to elicit the respondent's WTP for training. Following the WTP elicitation, respondents indicate their reasons behind their stated preferences to provide a clarification and the rationale for their responses. The questionnaire format was constructed in a way to encourage completion by starting with easier to answer demographic questions and concluding with more taxing Contingent Valuation questions and a question about current salary earnings. The questionnaire was piloted amongst a smaller sample of the target population in its paper format, this allowed the author to make the necessary changes following feedback from the pilot sample. The results from the CVM questionnaire were presented in Chapter 5 of this thesis, which demonstrated that LW value

accessing training to improve the skills and are WTP for training to contribute to their ongoing professional development.

6.3 Comparison of results across the study

This section will draw commonalities amongst the three sets of results in this study and link with existing theory. The results from the systematic review, semi-structured interview and contingent valuation method questionnaire show that a core training pathway is not currently available which is due to the current training lacking a structured format and that LWs value access to this type of structured training.

Training was expressed as a need going forward in order to ensure quality provision across different types of interventions in different geographic locations (Lang *et al.*, 2011; Bell and MacDougall, 2013; Majee *et al.*, 2019; Wildman *et al.*, 2019; Wallace *et al.*, 2020). This finding is consistent with findings from the 2020 National Association of Link Workers report which found that training is needed to support LWs (NALW, 2020). Furthermore 33% of surveyed LWs expressed plans to resign within a 12 month period due to a lack of support (of which training makes a part) (NALW and Gitsham, 2021).

The literature also illustrates that training improves LW competency and confidence (Black *et al.*, 2014). Within the UK, NHS England aim to encourage an increase of 900,000 service-users within the NHS to be in referred to SP interventions by 2024 (NHS England, 2019a). This increased workload necessitates further training and support for LWs. Increased competency and confidence would likely lead to improved SP intervention delivery. The evidence from the systematic review clearly indicates that challenges to delivering SP interventions from a LW perspective were related to not having adequate training (Zordan *et al.*, 2010; Lorenzo, van Pletzen and Booyens, 2015). Lorenzo et al (2015) found that individuals delivering SP interventions did not possess adequate levels of training to engage with their service-users, this in turn also left SP workers feeling inadequate in their roles. This sentiment could potentially pose problems to the organisations that employ LWs in the future, such as high staff turnover if training is not provided (Curran, 2012). Similarly, Zordan et al (2010) found that the trained support group leaders were more adaptable and resilient than their untrained counterparts. Training would allow for LWs to feel less stressed as

having increased knowledge and confidence would equip LW's with the skills required to deal with the various challenges that that could arise. If the LW workforce is less stressed, this could have positive effects on staff turnover and recruitment in the future. Zordan et al (2010) also reported that trained individuals tended to be younger than their untrained counterparts. A possible explanation for this is that, when more senior support group leaders entered their role it is possible that experience was the most essential criteria, however when the younger cohort entered the workforce, it is possible that more training was required for the newer cohort of younger support group leaders (Bialik and Fry, 2019). SP Coordinators expressed the need and benefit of an accredited training pathway for LWs. In Chapter 4 of this study, Interviewee 2 highlighted the importance of the right training for LWs:

"I would say I am completely sold on Social Prescribing because I have seen the results… the right people, in the right place, with the right training can make a difference to people's lives and we can prove it". (Interviewee 2)

However, research findings from the SR indicate that the provision of professional development training is not enough to ensure LW participation, indicating that endorsement from line managers and other healthcare professionals that make referrals is important to encourage the current LW cohort to undertake training (Bell and MacDougall, 2013; Vareilles *et al.*, 2015). In addition to endorsement of training, the systematic review result suggest that accredited LW training, would encourage LWs to participate in the training (Anderson, Harris and McCosker, 1997). However, SP coordinators reported that the LWs in their teams have complete autonomy when choosing their own professional developmental training. Perhaps affording this autonomy is due to the fact that the type of SP is very dependent on intervention type, and that there is no specific professional development training package or protocol for link workers, as the types of SP intervention are so varied (Wallace *et al.*, 2019). This notion of autonomy is consistent with the five standards that LWs in Scotland compiled, autonomy falls in the category 'I am fully involved in all decisions about my care and support (The Scottish Government, 2017).

The systematic review results suggested that identification of LW training needs is the first step to making quality improvements. It is important to note that the training needs of LWs must be understood before offering training pathways (Lang *et al.*, 2011; Bell and MacDougall, 2013; Wildman *et al.*, 2019; Wallace *et al.*, 2020). The LW role is a process of constant evolution and the training package should reflect this by being adaptable and responsive by frequent evaluation of LW skillsets. Lang et al (2011) confirmed the notion of skillset evaluation, stating that assessment can lead to necessary reforms of exiting SP intervention models. Some training is currently available for certain LW needs (Wallace *et al.*, 2020), however many training needs remain unmet such as SP intervention impact measurement, how to locate resources for local signposting and understanding how a service-user's relationships with their extended family impacts the socio-economic situation. It is also unclear whether all the different types of training that are currently available to LWs in Wales can be found in one training package. Given the nature of the referrals that SP deal with, having people skills was highlighted as the most essential skill for LWs by SP coordinators, even in more specialist forms of SP intervention such as exercise referral (Health and Fitness Education, 2020). The results from the CVM questionnaire show that over half of the LWs surveyed believe that awareness of local resources for referral is imperative for the LW role, the LWs indicated that training and qualifications were less essential. Experience such as working with vulnerable people, having interpersonal skills, and a willingness to commit to continuing professional development are cited as essential criteria whereas Undergraduate degrees are often listed as 'desirable' criteria as opposed to 'essential' (West Northumberland Primary Care Network, 2019). The underlining of interpersonal skills as an essential skill for the LW role by the SP coordinators from the semi-structured interviews reinforces the idea that experience is valued more in the LW role than more formal and traditional higher education.

To effectively provide future training for LWs it is of equal important to understand which types of training LWs have previously undertaken. To examine LWs current and future skills and value of accessing training results from the CVM questionnaire indicate that, 58% of LWs had previously undertaken some form of professional development training to improve their skills and knowledge. The training courses that fell into the 'professional development' category included training on communication skills, counselling skills, leadership and

management training, local authority provided training, motivational interviewing, information technology training, safeguarding and social prescribing training.

Although the focus of the research was the current skill mix of LWs, one of the main objectives was to gather information about future training needs and willingness to pay for such training. It is evident from the CVM questionnaire that the LWs place an importance on training with 70% of LWs that completed the CVM questionnaire reporting that they have previously undergone further training to facilitate their development as a LW. It is unclear who pays for the LWs training, although the results from the semi-structured interviews infer that the funding would have come from fixed project specific funding. To ascertain LW preferences and choices in accessing training to improve their skills and knowledge, 100% of respondents indicated that they would participate in additional training to improve their professional development. In this research, LW's were asked a WTP question to understanding the value in monetary terms in accessing training with value estimates indicating that LW are WTP on average £58 GBP to undertake training to improve their skills and knowledge. Following the valuation task, LWs were asked to provide reasoning for the assigned WTP value. All of the questionnaire respondents indicated that they were interested in the training. Despite, the surveyed LWs displaying clear interest in developing their skills through training, a third of LWs cited that they could not afford to pay for the training at their own expense. The questionnaire responses also show that 26% of LWs are able to manage from week to week given their household financial situation, and 6% of LWs are comfortably off. However, results indicate that 68% of LWs have to be careful about their money or experience difficulty with their finances from week to week. These financial struggles that LWs face are likely due to the LW average salary being lower than the national average (ONS, 2020). The average salary reported by the LWs was £24,495. The median salary amongst all professions in Wales in the year 2020 was £31,461 (ONS, 2020), far above what LWs receive. N=3 of the LWs reported earning £30,000 or above annually. Although it is not known why this annual salary is significantly less the national average, all of the LWs earn a salary on par with or above the national living wage (*National Minimum Wage and National Living Wage rates* , 2020). Weekly average household spending in the UK is estimated to be £585.60 (Office for National Statistics, 2020), however the average weekly

income of LWs after tax deductions is £390.32 (*Income Tax rates and Personal Allowances - GOV.UK*, 2020).

Just under half of LWs stated that the do not believe that they should pay for training. The average salary reported by LWs was far below the national average of £31,461, this would explain LWs being unable to spend a percentage their disposable income on training. It is possible to hypothesize that if expected to pay out of pocket for training, less LWs would enrol in professional skills development training. Therefore to stimulate the professional development of LWs in the future, it is paramount that employers include a training budget in prospective funding applications. Core funding for SP interventions and staffing is not currently available and 50% of SP coordinators interviewed reported that their role was linked to funding. In addition, two thirds of LWs reported that they are currently employed by third sector organizations. It is typical third sector organizations have a fixed staffing budget (Wales Council for Voluntary Action (WCVA), 2020).

Evidence from employment literature indicates that since 1999 there has been a decline in training participation within the UK workforce (Chartered Institute of Personnel and Development, 2019). In addition to the decline, since 2011, employer investment into staff training has not increased at a rate similar to the growth of the UK workforce, therefore in real terms there has been a decrease in employer investment into staff training. A 2019 Chartered Institute of Personnel and Development report concluded by recommending the creation of a regional fund to meet the lack of specific skills in the workforce (Chartered Institute of Personnel and Development, 2019).

Following the identification of how LW developmental training is funded, it is important for the bodies responsible for the implementation of new LW training to understand at which point a LW should undertake training. The systematic review results indicate that when training is undertaken in the introductory stages of a LWs career, LWs experience an improvement in the skills relevant to SP (Lang *et al.*, 2011; Wallace *et al.*, 2020). This could be attributed to the idea that if new LWs have a clear understanding of the LW role and

available community resources early on in their career, this could prevent these new LWs from experiencing more challenges later on in their careers. One SP Coordinator said that they would like to see more training for LWs to develop in their roles and have more job security through core funding instead of grant funding, which results in fixed term contracts. This need for training is supported by 33% of surveyed LWs citing that they would resign after 12 months if support was not provided (NALW and Gitsham, 2021). As described in Chapter 4, Interviewee 3 said:

> "*What I would like to see is, that the grant funding becomes core funding so that people have more security in their roles and will therefore develop in their roles". (Interviewee 3)*

Results from the CVM questionnaire which was distributed to LW's indicated that for effective provision of SP interventions, it is essential for LWs know and understand the needs of the local communities in which they deliver SP. The results from this research indicate that LWs live within or in close proximity to the communities in which they work. Living in these communities makes it more likely for LWs to be aware of resources and to better understand service-users in order for a more targeted referral for individuals (Hampton and Heaven, 2020). There was a stark difference in deprivation rankings between the residential postcodes of LWs and employment postcode within the sample of the CVM questionnaire. Results indicate a variation in deprivation levels with LWs residing (they reside in more affluent areas and deliver intervention in areas of higher deprivation). The difference seen in the average Lower Super Output Areas (LSOA) rankings score of LWs residential postcodes and employment postcode was 260 points. This difference in score suggests a significant difference within the levels of deprivation of the home and work postcodes, however it does not confirm this (Statistics for Wales, 2011). The eight domains of the WIMD (which include income, employment, health, education, access to services, housing, community safety and physical environment) are akin to the social determinants of health which contribute to an individual's health and wellbeing (Wami *et al.*, 2019).

Supporting research from Charlton et el (2013) shows a higher occurrence of people with complex needs living in areas of higher deprivation, furthermore results suggests that the healthcare costs increased as the number of complex needs per individual increased (Charlto*n et al*, 2013). This finding would infer that LWs would benefit from professional training to understand how health and inequalities affect service-user's situations within areas of high multiple deprivation. This consistent with findings in this research, in the SR Bell et al (2013) found that it is essential that LWs understand the areas in which they work and that this be added to their list of training needs. This is further supported by results from the LW questionnaire where half of the surveyed LWs reported the most essential skill is to have knowledge of the area in which LWs operate.

NHS England committed to recruiting 1000 newly trained LWs by 2021 (NHS England, 2019a), the SR findings would suggest that this training take place within the first year of the new cohort entering the role.

The Scottish Government committed to recruiting 250 additional LWs to support GP surgeries in areas of multiple deprivation by 2021 (The Scottish Government, 2019). This increase in the LW workforce would necessitate more training for the incoming LWs, specifically training that supports patients to improve their mental health and wellbeing (Public Health Scotland, 2020).

In Northern Ireland, The Bogside and Brandywell Health Forum could use a portion of the £3m Big Lottery injection towards, a training pathway for LWs in Northern Ireland to further training into community based intervention (ECHAlliance, 2018)

Given that Wales multiple models of SP are employed in Wales, the training should reflect this need by being multifaceted (Welsh Government, 2018).

6.4 Strengths and limitations of this study

To the knowledge of the researcher, this the first study of its kind looking into LW skills and training. The mixed-methodology provided background and context at each step for the following method of data collection. The systematic review protocol was published on PROSPERO which provided transparency and reduced the potential for bias with in the SR,

and ensured that there would not be duplicate reviews. The results from the LW questionnaire was able to build a standard profile of a LW working in SP in Wales.

This study underwent some changes and adjustments as a result of the COVID-19 pandemic. The author intended to conduct face to face interviews and planned to distribute the CVM questionnaires to LWs face to face in an SP conference setting in Wales. However, due to social distancing guidance and COVID-19 pandemic lockdowns, long distance travel, and large congregations of people were not permitted (GOV.UK, 2020; NHS, 2020). As a result of these government rules and guidance set out by Bangor University, the author conducted the interviews via video conference software and transposed the questionnaire design to the KoBo Toolbox online platform. The number of total LWs working across Wales is unknown so it is unclear to what extent the questionnaire sample is representative of the total LW population in Wales.

The LW questionnaire could have benefitted from a questions that asked LWs who has paid for their training up to date, and which types of training they feel they need for the future. Videoconferencing during the interviews meant that it was more difficult to build rapport between interviewer and interviewees. Being face to face allows for better exchange of information as both speaker and listener as both are able to see and interpret body language and facial expressions (Pease and Pease Barbara, 2008).

6.5 Recommendations for future research

There are a number of prospective avenues for future research concepts, which could be developed from this thesis. The findings of the systematic review, semi-structured interviews, and questionnaires in this thesis suggest that more attention and investment should be given to developing the skills of LWs in order to equip LWs with the growing demands of their role. Given the findings from this research, it is suggested that a more structured and centralised training package of education and skills could be developed for specific streams of SP intervention i.e. Exercise referral in green spaces to improve health and wellbeing.

Based on the key insights of this Masters by research, it is recommended that further research into the following topics is conducted into the development of an accredited core LW training package. Specific points to explore include who would deliver this training, where it would be delivered, which organisation would accredit the training, and would this training be single periods or ongoing. This examination of training should be able to provide training opportunities to improve the essential skills for LWs as reported by the key stakeholders in the semi-structured interview results (see Chapter 4). Furthermore, it is imperative that the payers of SP LW training are identified. In addition to identification of the funding source, a greater focus should be placed on designated training budgets that are written into SP project grants for future training needs. This pre-allocation of funding, paired with clear stipulation of which training is eligible, would provide greater direction for LW professional development. Finally, a further study to determine at what stage of a LW's career training should be offered, as the systematic review results (see Chapter 3) highlight that there is an appropriate time for LWs to participate in training. It would be appropriate for the body commissioning the core training package to conduct this study. Furthermore, this research should also consider when training should be offered to those already in their role and whether training should be offered at multiple times throughout a LWs career to keep up with the needs of service-users.

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List of Appendices

Appendix A

Despite the increased prevalence of SP intervention on a global level, the UK is at the forefront of SP intervention development (Hsiung *et al.*, 2019). This section will outline how SP has been integrated into healthcare through legislation and policymaking.

World Health Organization

According to the World Health Organization (WHO) 'Health' refers to a tri-partite holistic state which takes into account, one's physical and mental state, and their social well-being and not just disease not being present (*Constitution Of The World Health Organization 1*, 1946). In recent years, WHO have placed an emphasis on combating health socioeconomic inequalities which falls under the direct remit of SP. Below are some initiatives and strategies that support the deliverance of SP.

Community Health Workers

The WHO outlines a need for community based and community led interventions as early as 1987 although it does not mention SP by name the principals are similar (*Strengthening the performance of community health workers in primary health care : report of a WHO Study Group*, 1987).

Social Determinants of Health

The Commission on Social Determinants on Health (CSDH) was launched by WHO in 2005 and sought to educate about the socioeconomic factors bearing on health amongst the most deprived individuals in society (*The Commission on Social Determinants of Health-what, why and how?*, 2005). The CSDH advised that improvements should be made in the daily living conditions, inequity of wealth distribution and occupancy of important roles in society be addressed, and that data collection be implemented to better understand the prevalence of health inequality (*Closing the gap in a generation Health equity through action on the social determinants of health Commission on Social Determinants of Health Final Report Closing the gap in a generation contents*, 2008).

Canada

A pilot of SP intervention spanning over 18 months ran by the Alliance for Health Communities in Ontario and overseen by key stakeholders in SP from the UK sought out to see if SP could be effective in tackling loneliness in the community *(Connected Communities healthier together*, 2017). Alliance for Health Ontario found that patients benefited on a 12% Improvement on mental health, a 49% decrease in loneliness and a 19% increase in uptake of activities (Mulligan *et al.*, 2020). Furthermore, link workers reported SP was responsible for a reduction in the number of repeat appointments by 42% after nine months (Mulligan *et al.*, 2020).

The Netherlands

In the Netherlands, SP interventions seek to tackle psychosocial issues, an impact study which lasted 3 months in the Dutch town Nieuwegein. The study sought to find out to what extent SP affects patients and how the process of SP transpires. The 'Welzijn op Recept' study found that the cohort studied were in better health, with more autonomy and clarity in their lives (Heijnders, Meijs B ' and Op, 2017).

Japan

In Japan there are practices that have been carried out for decades which fall under the auspice of SP despite not initially being commissioned by Japanese primary care networks. The Japanese Ministry of Agriculture, Forestry, and Fisheries introduced 'Shinrin-Yoku' (SY) also referred to as 'Forest Therapy' (Hansen, Jones and Tocchini, 2017). SY is a practice used to combat mental health issues by the patient immersing themselves in the tranquillity of forest environments. SY has been proven to reduce stress levels in patients, improve sleep, raise the level of immune function and reduce blood pressure (Ae *et al.*, 2008). The Japanese government implemented insurance for long-term care in which it hopes to integrate community-based care interventions within the system in order to better deal with an ageing population and subsequently, an act to create community-based long-term care (Kumakawa *et al.*, 2016).

Sweden

Arts in Health

In 2000 the Swedish Government released its prospective strategies for Public Health, in which it accentuated that arts in health would be used as a tool to improve public health (Clift and Camic, 2016). Despite the arrival of this strategy, a dearth remains in the provision of Arts in Health SP interventions (Jensen *et al.*, 2017).

Exercise Based Intervention

SP in Sweden is delivered through two means, Arts in Health and through physical activity. The Swedish Physical Activity Prescription (SPAP) is an intervention that is employed to mitigate against the social determinants of health in health issues (Gustavsson *et al.*, 2018). SPAP guidelines state that a personalized care meeting between the health professional and the patient, a written accord between the health professional and patient outlining

expectations of the patient, and a joint enterprise between the health professional and physical fitness instructors must be present in the SPAP model (Faskung*er et al*, 2007). SPAP is supported by Swedish policy implemented by the Swedish National Board of Health and Welfare (*Disease Prevention in the Swedish Healthcare System: Health situation, national guidelines and implementation*, 2013). SPAP has garnered attention globally as the European Union adapted the SPAP intervention to develop the European Physical Activity on Prescription model (EUPAP) with the aid of the Public Health Agency of Sweden (European Physical Activity on Prescription, 2020).

Singapore

In Singapore the SingHealth Community hospitals started delivering SP interventions to its patients as of 2019 (*What Matters To Our Patients?*, 2018). Bright Vision Hospital is a part of SingHealth Community hospitals that strives to treat patient's chronic and social needs, one of their SP interventions is physical exercise delivered through 'outdoor therapy'(*What Matters To Our Patients?*, 2018).

Republic of Ireland

In a report written by the Health Service Executive (HSE), development of SP in PCNs was recommended on a National level to combat the effects of Mental Health issues. The report also mentioned that experts in the field of SP from the UK should assemble with Irish stakeholders in order to develop a framework of practice in the Republic of Ireland (Keenaghan, Sweeney and Mcgowan, 2012). The different types of SP delivered in the Republic of Ireland include exercise referral, Eco therapy, men's groups, arts based SP and self-help schemes (*Social Prescribing - HSE.ie*)

The South Dublin County Partnership began delivering SP in South Dublin (via HSE funding) in 2018 with the goal of improving referred patient's wellbeing. Referrals are completed by GPs and in house health professionals (*South Dublin County Partnership Take A Holistic Approach to Community Centred Care - Elemental Social Prescribing Software & Consultancy*, 2020).

Appendix B

As a result of devolution in the UK each of the four countries below have different acts and legislation regarding Healthcare. In this section the SP policies and strategies for each devolved nation will be explained in this section.

Northern Ireland

The Health and Wellbeing 2026: Delivering Together strategy is a ten year strategy which outlines changes needed in Healthcare in Northern Ireland (Kelly and Kennedy, 2017). Changes in primary care, prevention and community underpin this strategy. SP has been identified in Northern Ireland as a means of enhancing the provision of primary care. The Power to People: Proposals to reboot adult care and support in Norther Ireland. report by the People Expert Advisory Panel suggested SP as one of the initiatives that be part of their 'integrated systems' in adult care(Kelly and Kennedy, 2017). The Department of Agriculture Environment and Rural Affairs (DAERA) has given out partial funding to a SP project as it aligned with the Tackling Rural Poverty and Social Isolation (TRPSI) (DAERA, 2016).

Scotland

The Scottish Government have had explicit SP strategies in place as early as 2007 in order to tackle Mental Health issues in the community, the strategy outlined that SP is capable of defragmenting the primary care pathway for patients allowing for better collaboration between primary care and the third party sector (Friedli, Vincent and Woodhouse, 2007).

The Mental Health Strategy for Scotland: 2012-2015 named self-management as a driver for mental health improvement. In this strategy the Scottish government makes 36 action points which they name as commitments. The 15th commitment pledges to raise the knowledge of SP via new technologies (Scottish Government, 2012).

The A blueprint for Scottish general practice by the Royal College of General Practioners (RGCP) outlined they would like to guarantee that community based and led initiatives are in place (Webster *et al*, 2015).

The Scottish government funded the Glasgow 'Deep End' Link Worker programme in order to alleviate pressures on people living in socioeconomic deprivation (people ranking in the 85th percentile in the Scottish Index of Multiple Deprivation (SIMD) (Mercer *et al.*, 2019). The reports were written from the viewpoints of GPs where they outlined that a majority of appointments were linked to the social determinants of health.

The Active Scotland Delivery Plan encourages an active lifestyle through SP. This plan is supported by WHO Global Action Plan on Physical Activity. This strategy outlines six

outcomes which act as measurable action points(Scottish Government, 2018). An example of an active lifestyle through SP in Scotland is through the Glasgow Exercise Health Referral scheme (Glasgow Life, 2018)

SPRING

SPRING is a Big Lottery funded SP partnership led by Bogside & Brandywell Health Forum based in Derry (NI) between 30 community based organisations in Scotland and NI's respective networks: Scottish Communities for Health and Wellbeing (SCHW) and the Healthy Living Centre Alliance (HLCA)(*SPRING Social Prescribing*, 2019). SPRING started as a pilot programme between 2015 and 2018. SPRING's long term aspiration is to help usher in a new culture focusing on the social determinants of health rather than the traditional clinical health model. SPRING operate via signposting to community interventions i.e. singing for health (*SPRING - Social Prescribing - How does Spcial Prescribing work?*, 2020)

England

Our health, our care, our say: a new direction for community services (2006) was a white paper commissioned under the former UK Labour government which clearly state that SP will be a tool used to promote long term health, autonomy and signposting *(Our health, our care, our say: a new direction for community service*, 2006).

The Five Year Forward View (2014) outlined SP as an 'emerging model' (*Five Year Forward View*, 2014).

NICE's older people: independence and mental wellbeing guidelines promote interventions such as group based activities and volunteering. NICE's guidance is pertinent to Local municipalities collaborating with VSCEs, the NHS and families of the patients *(Older people: independence and mental wellbeing NICE guidelin*e, 2015).

The General Practice Forward View (2015) features the General Practice Development Programme which lists SP, active signposting, collaborative working and personal empowerment as focal points of the ten high impact actions which will lessen the workload for GPs *(General Practice Forward Vie*w, 2016).

A national ambassador with a clinical background was named to champion SP in NHS England to promote new SP schemes (*Dr Michael Dixon national clinical champion for social prescribing, NHS England*, 2020)

The Chief Medical Officer's report for England (2018) features advice for policy makers in Chapter 4: Social Health in which it admonishes that SP should become a staple in the NHS

and that SP will allow for the NHS to pivot from being a reactive service of treatment and shift to being a proactive service that promotes health (Pearson-Stuttard and Murphy, 2018).

A connected society: a strategy for tackling loneliness is interconnected with the NHS Long Term Plan and encourages collaboration in order to include all stakeholders i.e. services users and LWs by expanding SP across England (*The London Health Inequalities Strategy Implementation Plan 2018-2020*, 2018) (Department for Digital Culture Media and Sport, 2018).

The UK government's Loneliness strategy has pledged that all patients meeting the criteria in England will have access to a social prescribing connector by 2023 *(A connected society A strategy for tackling loneliness-laying the foundations for chang*e, 2018).

In 2018 the Health and Wellbeing fund released £4.5million that would be shared amongst a plethora of different social prescribing schemes throughout the UK (*Social prescribing schemes to be funded by the Health and Wellbeing Fund: 2018*, 2018)

The London Health Inequalities Strategy Implementation Plan 2018-2020; Mayor of London Sadiq Khan announced Social Prescribing is a part of his key ambition "support more Londoners in vulnerable or deprived communities to improve their health and wellbeing through social prescribing"*(The London Health Inequalities Strategy Implementation Plan 2018-202*0, 2018)

In January 2019 NHS England has also announced that Social Prescribing will play a significant role in the NHS' Long Term Plan specifically under the umbrella of Universal Personalised Care. NHS England announced that "at least 900,000 people will be referred to social prescribing by 2023/24". What's more, NHS England have stated that they will have at least 1000 trained Link Workers in Primary Care Networks by 2020/21 and this is a part of the 20,000 healthcare professionals who are being recruited to alleviate pressure from GPs *(The NHS Long Term Pla*n, 2019).

Next Steps For Social Prescribing (2019) outlines five core principles which have been identified in order to administer SP and foster health and wellbeing in London's communities (*Next Steps for Social Prescribing in London*, 2019).

Since October 2019 social prescribing has had its own national academy which was opened by the UK secretary of state for Health and Social Care Secretary, Matt Hancock. The secretary of state has expressed his wish that every patient in England should have access to social prescribing in the same way that they have access to medicines (*Social prescribing: new national academy set up - GOV.UK*, 2019).

The academy's goals are to:

- homogenise the standard of SP available to patients across England
- raise awareness of advantages of SP

- improve and spread information on the best practice
- unify different entities involved in SP
- improve training and certification

The UK Government's Environment Secretary George Eustice announced a new stimulus of investment into a two year Green Social Prescribing pilot project (NHS England, 2020b). This pilot will experiment with the integration of Green Social Prescribing interventions in local communities. The project expects that mental health outcomes will be improved, and health inequalities within local communities will be reduced (Department for Environment Food and Rural Affairs, 2020).

Appendix C

Abraham Makanjuola

Abu7e0@bangor.ac.uk

07957269750

Participant Information Sheet

Study Title: An evaluation study to investigate recruitment into social prescribing interventions and explore the skills sets of Link Workers in dealing with complex case referrals.

Researchers: Abraham Makanjuola, Dr Mary Lynch & Dr Llinos Haf Spencer

We would like to invite you to take part in a study. Before you decide whether you would like to participate, it is important that you to understand why the study is being conducted and what it entails. Please take time to read the following information carefully. Feel free to ask questions of the research team if anything you read is not clear or you would like more information.

1. What is the purpose of the study?

The purpose of the study is to investigate recruitment into social prescribing interventions and explore the skills sets of Link Workers in dealing with complex case referrals.

2. Why have I been invited to take part?

You have been invited to part as you work as a Social Prescriber in some capacity: whether it be as a Community Connector, Link Worker, exercise referral instructor etc.

3. Do I have to take part?

It is up to you whether you decide to take part in the study. If you agree to take part, we will ask you to sign a consent form. You are of course free to withdraw at any time without giving a reason and without your legal rights being affected. If you do withdraw, all data relating to you already collected with your consent will be used in the study, but it will all be anonymised and your details will be removed from our records.

5. What will I be asked to do?

You will be asked to complete a 5 minute on-line questionnaire using your smartphone, tablet or laptop, and you may also be asked to participate in an audio recorded interview over the telephone. Face to face interviews were anticipated originally, but due to the Coronavirus, this is now the only option available.

6. What are the possible disadvantages and risks of taking part?

We do not foresee any disadvantages or risks to you taking part in the study. However, if you have any concerns, the research team will be happy to discuss these with you. If you feel unable or uncomfortable about answering any of the questions, you will be advised to leave them blank.

7. What are the possible benefits of taking part?

It is anticipated that this study will provide guidance and develop a quality improvement matrix on link worker skills requirements as well as providing referral guidance for social prescribing interventions in Wales.

8. Will my taking part in the study be kept confidential?

Throughout the analysis process all data will remain anonymized and participants will be not be identifiable. If at any point before, during or after you wish to withdraw your data or choose not to participate you are free to do so.

9. What will happen if I don't carry on with the study?

If you withdraw from the study, we will destroy all your identifiable information. We would like to take this opportunity to remind you that participation is voluntary and you have the right to withdraw at any point of this study.

10. What will happen to the results of the study?

The results will be reported in a Masters by Research thesis and journal publications. You will not be identified by name in any report or publication resulting from this study.

11. Who is organising the research?

The study is being conducted by Abraham Makanjuola (MRES Student at the Centre for Health Economics and Medicines Evaluation, Bangor University) under the supervision of Dr Mary Lynch and Dr Llinos Haf Spencer (CHEME, Bangor University). The study is sponsored by Bangor University and funded by the KESS 2 Knowledge Economy Skills Scholarship.

12. What if there is a problem?

If you have any queries about this study, please do not hesitate to contact Abraham Makanjuola (abu7e0@bangor.ac.uk) or 07957269750, Dr Mary Lynch (m.lynch@bangor.ac.uk) or Dr Llinos Haf Spencer (l.spencer@bangor.ac.uk).

Alternatively, you can contact the Head of School of Healthcare Sciences:

Dr Lynne Williams, Head of School, School of Health Sciences, Bangor University, Bangor, Gwynedd LL57 2EF. Telephone: 01248 383170. E-mail: lynne.williams@bangor.ac.uk .

Please take your time to decide whether you would like to take part in the study.

Appendix D

STUDY CONSENT FORM

Study Title: An evaluation study to investigate recruitment into social prescribing interventions and explore the skills sets of Link Workers in dealing with complex case referrals.

Researchers: Abraham Makanjuola, Dr Mary Lynch & Dr Llinos Haf Spencer

Please **(initial)** all boxes

1. I confirm that I have read and understand the participant information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without any consequence to myself. ☐
3. I agree to my anonymised data being used in study specific reports and subsequent articles that will appear in academic journals and a Masters Thesis. ☐
4. I consent to the processing of my personal information (included my voice being recorded) for the purposes of this research study. I understand that such information will be treated as confidential and handled in accordance with the General Data Protection Regulations (GDPR) 2018. ☐
5. I understand that any declaration of unprofessional, illegal activity or activity that can lead to the harm of some person, including the interviewee, will be presented to the relevant authorities. ☐
6. I agree to take part in the above study. ☐

Name of Participant	Signature	Date
_____	_____	_____
Name of person taking consent	Signature	Date
_____	_____	_____

Appendix E

Semi Structured Interview Questions for key stakeholders

1. What is the title of your role?

2. How long have you been working in your current role?
3. How many years' experience do you have working in this kind of role?
4. Do you work with a team of people? If so how many?
5. In you in current role is your contract a fixed term contract or permanent?

6. Is your role linked with funding?
7. Is the role of your team members linked with funding?
8. What type of funding is in place?
9. Do you and your colleagues have access to peer support?

10. What are the various Social Prescribing activities that are currently delivered through your organisation?
11. What qualifications do you need/members of your team need to carry out your/their role/s?
12. What would you consider are the most important skills that are needed to carry out this role?

13. What kind of training is provided for this role?
14. What training would you benefit from to carry out your role?
15. Do you have anything that you would like to say about your role regarding skills and training?

Appendix F

Thank you for agreeing to take part in this study. We are interested in what you think and there are no right or wrong answers. Please carefully read each question and we would appreciate if you could answer each question as honestly as possible.

1. What is your Gender? ☐Male ☐Female ☐ Other (please specify)_____

2. Which of the following do you think is most essential for link workers working in Social Prescribing?
   ☐A good rapport with local services (GPs etc.) ☐Training
   ☐Knowledge of activities/services in the local area ☐ qualifications

3. Which of the following best defines your role?
   ☐Local Asset Coordinator ☐Exercise Instructor
   ☐ Community Connector ☐Wellbeing Officer
   ☐ Link Worker

4. Is it essential for a link worker to have a recognised educational qualification?
   ☐Yes ☐No

5. Please indicate your highest level of education
   ☐GCSEs ☐A Levels/BTEC ☐Undergraduate degree ☐Masters ☐PhD

6. When you started in your current position did you feel that you were?☐Overqualified ☐Underqualified ☐Had the appropriate level of experience

7. How many years of experience do you have in a link worker role working in Social Prescribing?
   _____Years

8. Is your current contract of employment?
   ☐Full time ☐Part time Number of hours _____ per week

9. Which of the following best defines the organisation that you work for?
☐A local authority ☐Third Sector (Charity) ☐A University Health Board
☐Other (please specify) _____

10. Length of time in current role Years_____Months

11. Which of these of the following best describes your contractual work?
☐Fixed-term ☐Permanent ☐Ad hoc

12. Have you ever completed training to further your development as a link worker?
☐Yes ☐No
If yes, please indicate to which level and what kind of training

☐Level 3 ☐Level 4 ☐Level 5 and above

Type of training_____

Consider the following 'hypothetical' situation:

Suppose that a training course was available free of charge which featuring new ways to approach your role, opportunities to network with other link workers

13. Would you be willing to participate in this type of training?
☐Yes ☐No

14. Now suppose this training course could no longer be offered free of charge and suppose it was not available through the NHS or partner organisations. What is the **maximum amount** that would you be willing to pay at your own expense for this type of training? **Please consider what you could realistically afford to pay given your current financial situation.**

☐ £10	☐ £50	☐ £100	☐ £150	☐ £200	☐ £250	☐ £300	☐ £350	☐ £400	☐ £450	☐ £500	☐ £550	☐ £600

☐ Nothing

15. The previous two questions have asked about your 'willingness to pay' for hypothetical training. Below are some sentences to explain why you gave the answers you have chosen. Please read each and select the one(s) that best explain your answers:

☐The amount chosen reflects how much I think it would be worth
☐I am not interested in such training
☐I cannot afford such a course
☐I do not believe that I should pay for such training

16. Thinking about the cost of living as it affects you and your household, which of these best describes your situation at present?

☐ I find it a strain to get from week to week ☐I have to be careful about money
☐ I am able to manage without much difficulty ☐ I am quite comfortably off

17. What is your year of birth? _____

18. What is the postcode of your workplace? _____

19. What is the postcode of your home? _____

20. What is your current salary?

Hourly rate of pay £_____ OR Annual income £_____

Thank you for completing this questionnaire.

Appendix G

CASP
Critical Appraisal Skills Programme

Paper for appraisal and reference: .....

Section A: Are the results valid?

1. Was there a clear statement of the aims of the research?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- what was the goal of the research
- why it was thought important
- its relevance

Comments:

2. Is a qualitative methodology appropriate?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants
- Is qualitative research the right methodology for addressing the research goal

Comments:

Is it worth continuing?

3. Was the research design appropriate to address the aims of the research?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- if the researcher has justified the research design (e.g. have they discussed how they decided which method to use)

Comments:

CASP
Critical Appraisal Skills Programme

4. Was the recruitment strategy appropriate to the aims of the research?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- If the researcher has explained how the participants were selected
- If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study
- If there are any discussions around recruitment (e.g. why some people chose not to take part)

Comments:

5. Was the data collected in a way that addressed the research issue?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- If the setting for the data collection was justified
- If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)
- If the researcher has justified the methods chosen
- If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews are conducted, or did they use a topic guide)
- If methods were modified during the study. If so, has the researcher explained how and why
- If the form of data is clear (e.g. tape recordings, video material, notes etc.)
- If the researcher has discussed saturation of data

Comments:

CASP
Critical Appraisal Skills Programme

6. Has the relationship between researcher and participants been adequately considered?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- If the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location
- How the researcher responded to events during the study and whether they considered the implications of any changes in the research design

Comments:

Section B: What are the results?

7. Have ethical issues been taken into consideration?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained
- If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)
- If approval has been sought from the ethics committee

Comments:

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8. Was the data analysis sufficiently rigorous?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- If there is an in-depth description of the analysis process
- If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data
- Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process
- If sufficient data are presented to support the findings
- To what extent contradictory data are taken into account
- Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation

Comments:

9. Is there a clear statement of findings?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider whether
- If the findings are explicit
- If there is adequate discussion of the evidence both for and against the researcher's arguments
- If the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than one analyst)
- If the findings are discussed in relation to the original research question

Comments:

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Section C: Will the results help locally?

10. How valuable is the research?

HINT: Consider

- If the researcher discusses the contribution the study makes to existing knowledge or understanding (e.g. do they consider the findings in relation to current practice or policy, or relevant research-based literature
- If they identify new areas where research is necessary
- If the researchers have discussed whether or how the findings can be transferred to other populations or considered other ways the research may be used

Comments:

Appendix H

Paper for appraisal and reference:.....

Section A: Are the results of the study valid?

1. Did the study address a clearly focused issue?

Yes ☐
Can't Tell ☐
No ☐

HINT: A question can be 'focused' in terms of
- the population studied
- the risk factors studied
- is it clear whether the study tried to detect a beneficial or harmful effect
- the outcomes considered

Comments:

2. Was the cohort recruited in an acceptable way?

Yes ☐
Can't Tell ☐
No ☐

HINT: Look for selection bias which might compromise the generalisability of the findings:
- was the cohort representative of a defined population
- was there something special about the cohort
- was everybody included who should have been

Comments:

Is it worth continuing?

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3. Was the exposure accurately measured to minimise bias?

Yes ☐
Can't Tell ☐
No ☐

HINT: Look for measurement or classification bias:
- did they use subjective or objective measurements
- do the measurements truly reflect what you want them to (have they been validated)
- were all the subjects classified into exposure groups using the same procedure

Comments:

4. Was the outcome accurately measured to minimise bias?

Yes ☐
Can't Tell ☐
No ☐

HINT: Look for measurement or classification bias:
- did they use subjective or objective measurements
- do the measurements truly reflect what you want them to (have they been validated)
- has a reliable system been established for detecting all the cases (for measuring disease occurrence)
- were the measurement methods similar in the different groups
- were the subjects and/or the outcome assessor blinded to exposure (does this matter)

Comments:

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5. (a) Have the authors identified all important confounding factors?

Yes ☐
Can't Tell ☐
No ☐

HINT:
- list the ones you think might be important, and ones the author missed

Comments:

5. (b) Have they taken account of the confounding factors in the design and/or analysis?

Yes ☐
Can't Tell ☐
No ☐

HINT:
- look for restriction in design, and techniques e.g. modelling, stratified-, regression-, or sensitivity analysis to correct, control or adjust for confounding factors

Comments:

6. (a) Was the follow up of subjects complete enough?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- the good or bad effects should have had long enough to reveal themselves
- the persons that are lost to follow-up may have different outcomes than those available for assessment
- in an open or dynamic cohort, was there anything special about the outcome of the people leaving, or the exposure of the people entering the cohort

6. (b) Was the follow up of subjects long enough?

Yes ☐
Can't Tell ☐
No ☐

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Comments:	

Section B: What are the results?

7. What are the results of this study?

HINT: Consider
- what are the bottom line results
- have they reported the rate or the proportion between the exposed/unexposed, the ratio/rate difference
- how strong is the association between exposure and outcome (RR)
- what is the absolute risk reduction (ARR)

Comments:	

8. How precise are the results?

HINT:
- look for the range of the confidence intervals, if given

Comments:	

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9. Do you believe the results?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- big effect is hard to ignore
- can it be due to bias, chance or confounding
- are the design and methods of this study sufficiently flawed to make the results unreliable
- Bradford Hills criteria (e.g. time sequence, dose-response gradient, biological plausibility, consistency)

Comments:

Section C: Will the results help locally?

10. Can the results be applied to the local population?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider whether
- a cohort study was the appropriate method to answer this question
- the subjects covered in this study could be sufficiently different from your population to cause concern
- your local setting is likely to differ much from that of the study
- you can quantify the local benefits and harms

Comments:

11. Do the results of this study fit with other available evidence?

Yes ☐
Can't Tell ☐
No ☐

Comments:

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12. What are the implications of this study for practice?

Yes ☐
Can't Tell ☐
No ☐

HINT: Consider
- one observational study rarely provides sufficiently robust evidence to recommend changes to clinical practice or within health policy decision making
- for certain questions, observational studies provide the only evidence
- recommendations from observational studies are always stronger when supported by other evidence

Comments: