

Non-clinical community interventions: a systematised review of social prescribing schemes

Helen J. Chatterjee, Paul M. Camic, Bridget Lockyer & Linda J. M. Thomson

To cite this article: Helen J. Chatterjee, Paul M. Camic, Bridget Lockyer & Linda J. M. Thomson (2018) Non-clinical community interventions: a systematised review of social prescribing schemes, *Arts & Health*, 10:2, 97-123, DOI: [10.1080/17533015.2017.1334002](https://doi.org/10.1080/17533015.2017.1334002)

To link to this article: <https://doi.org/10.1080/17533015.2017.1334002>



© 2017 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 06 Jun 2017.



Submit your article to this journal [↗](#)



Article views: 2003



View Crossmark data [↗](#)



Citing articles: 4 View citing articles [↗](#)

Non-clinical community interventions: a systematised review of social prescribing schemes

Helen J. Chatterjee^a, Paul M. Camic^b, Bridget Lockyer^b and Linda J. M. Thomson^{a,c}

^aGenetics, Environment and Evolution, UCL Biosciences, University College London, London, UK; ^bApplied Psychology, Canterbury Christ Church University, Canterbury, UK; ^cUCL Culture, University College London, London, UK

ABSTRACT

Background: This review focused on evaluation of United Kingdom social prescribing schemes published in peer-reviewed journals and reports. Schemes, including arts, books, education and exercise “on prescription” refer patients to community sources of non-clinical intervention.

Method: A systematised review protocol appraised primary research material evaluating social prescribing schemes published 2000–2015. Searches were performed in electronic databases using keywords, and articles were screened for evaluation of patient data, referral process, assessment method and outcomes; non-evaluated articles were excluded.

Results: Of 86 schemes located including pilots, 40 evaluated primary research materials: 17 used quantitative methods including 6 randomised controlled trials; 16 qualitative methods, and 7 mixed methods; 9 exclusively involved arts on prescription.

Conclusions: Outcomes included increase in self-esteem and confidence; improvement in mental well-being and positive mood; and reduction in anxiety, depression and negative mood. Despite positive findings, the review identifies a number of gaps in the evidence base and makes recommendations for future evaluation and implementation of referral pathways.

ARTICLE HISTORY

Received 21 February 2017
Accepted 13 May 2017

KEYWORDS

Community referral; mental well-being; non-clinical intervention; arts on prescription; physical health

Introduction

The United Kingdom’s (UK’s) National Health Service (NHS) faces increasing pressure on its resources during a time of financial constraint consistent with state and private health organisations in many countries. Consequently, voluntary organisations and charities as third sector organisations are increasing their role in providing an adjunct to primary care services (Coid, Williams, & Crombie, 2003; Secretary of State for Health, 2006). Social prescribing, also referred to as community referral, has gained considerable attention in recent years (Husk et al., 2016; Kilgarriff-Foster & O’Cathain, 2015; Mossabir, Morris, Kennedy, Blickem, & Rogers, 2015; South, Higgins, Woodall & White, 2008). Social prescribing is defined as: “A mechanism

CONTACT Helen J. Chatterjee  h.chatterjee@ucl.ac.uk

© 2017 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

for linking patients with non-medical sources of support within the community” (CentreForum Metal Health Commission, 2014, p. 6). These sources of support could be for patients with social, emotional, or practical needs and considered vulnerable or at risk, such as people living with long-term health conditions (Mossabir et al., 2015), frequent health service attendees and those in social isolation (Kilgariff-Foster & O’Cathain, 2015), with mild-to-moderate depression (Husk et al., 2016) or psychosocial problems (Grant, Goodenough, Harvey, & Hine, 2000).

Social prescribing is viewed as a means of addressing mental, psychosocial, or socioeconomic issues, and enhancing community well-being and social inclusion (Scottish Development Centre for Mental Health, 2007). As such, it is an emerging strategy for tackling health inequities through partnerships between primary care and third sector organisations. Whilst community referral has tended to be instigated by primary care services through a range of referral models, appropriate community structures (e.g. third sector organisations, community groups and voluntary services) need to be in place to support this referral (Friedli, Jackson, Abernethy, & Stansfield, 2009). Well-known models of social prescribing comprise: “Arts on Prescription”; “Books on Prescription” / “Bibliotherapy”; “Education on Prescription”; and “Exercise Referral/Exercise on Prescription”; lesser known models include “Green Gyms” and other “Healthy Living Initiatives”; Sign Posting/“Information Referral”; “Supported Referral”; and “Time Banks”.

Models of social prescribing

Arts on Prescription: The arts (e.g. Clift et al., 2009) have made important contributions to well-being across different geographical areas and socioeconomic groups. The importance of Arts on Prescription schemes to national well-being was identified in a major policy report by the (UK) All Party Parliamentary Group on Wellbeing Economics (APPG/WE, 2014). The report concluded that Arts on Prescription offered a framework to “look beyond clinical interventions” (APPG/WE, p. 40), in order to provide a context for the delivery of arts and well-being programmes that “have a wider role to play in meeting local authorities’ health and wellbeing objectives” (p. 40). This is the first report of its kind internationally, that we are aware of, to specially call for the further development of an Arts on Prescription policy as part of one country’s national agenda on well-being. With the publication of the APPG/WE report, the UK joined Australia and Finland as one of first three countries to support on a national level, the value of arts in health and well-being (Australian Government, 2013; National Institute for Health & Welfare, 2014).

Arts on prescription programmes offer creative and participatory workshops (e.g. dance, drama, music, painting, and poetry) to support patients with mental and physical health issues. Research shows that creative activity has a positive effect on mental health, is related to self-expression and self-esteem, initiates opportunities for social contact and participation (Huxley, 1997), and provides purpose, meaning and improved quality of life (Callard & Friedli, 2005; Tyldesley & Rigby, 2003). A national study evaluating the impact of arts programmes for patients with common mental health conditions (e.g. anxiety, depression, phobia, eating disorders) found that participants felt more empowered and confident, and experienced reduced feelings of social exclusion and isolation (Hacking, Secker, Spandler, Kent, & Shenton, 2008).

Books on Prescription/Bibliotherapy: Uses self-help books to enable people to manage and understand psychological issues. A core collection of 30 books written and selected by health professionals employ cognitive behavioural therapy principles for common mental health conditions. General or mental health practitioners make a referral for a book borrowed “on prescription” from a local public library that can also be accessed through self-referral. A study exploring effects of leisure activities, including reading, on dementia risk for participants over 75 years without dementia at baseline, showed that certain activities (e.g. board games, dancing, playing musical instruments and reading) were associated with reduced risk; reading lessened the likelihood of dementia by 35 per cent, second only to dancing at 73 per cent (Verghese et al., 2003). For reducing stress levels, reading was 300 per cent better than taking a walk and 68 per cent better than listening to music (Mindlab International, Sussex University, 2009).

Education on Prescription: Consists of referral to formal learning opportunities, including literacy and basic skills that can involve the use of learning advisers placed in educational establishments, day services, mental health teams or voluntary sector organisations, to identify appropriate educational activities for individuals and support access. Learning opportunities impact positively on health by improving an individual’s socioeconomic position, access to health services and information, and resilience, problem-solving, self-esteem and self-efficacy (National Institute for Adult Continuing Education, 2003). A longitudinal UK study of the health impact of learning for 10,000 adults found that participation in education contributed to shifts in attitude and behaviour resulting in increased exercise, life satisfaction, race tolerance, political interest and voting behaviour (Feinstein, Hammond, Woods, Preston, & Bynner, 2003).

Exercise Referral/Exercise on Prescription: Involves referring patients to supported exercise programmes (e.g. cycling, dance, gymnasium or leisure centre activity, keep fit, swimming and team sports). In addition to physical health improvement, benefits included learning new skills and achieving goals, improving the way that people look and feel about themselves, meeting new people, adding structure to the day and improving patterns of sleep. Since their inception in 1990, UK exercise schemes have increased to around 600 (Pavey et al., 2011a,b,c). Exercise therapy has been promoted as a realistic and readily available tool for depression for referral by general practice, or by self-referral (The Mental Health Foundation, 2005). A review of research into effects of exercise on mental health reported reductions in anxiety, depression and negative mood, with increases in self-esteem and cognitive functioning, concluding that exercise was a neglected intervention in mental health care (Callaghan, 2004). A positive association of physical activity with health-related quality of life and well-being was found among people with moderate to severe mental health diagnoses (Biddle & Mutrie, 2001). The biological basis for exercise referral is that regular exercise releases naturally occurring morphine-like neuropeptides (endorphins) produced by the central nervous system and pituitary gland, that inhibit pain signal transmission and produce feelings of euphoria (Hillman, Erickson, & Kramer, 2008; Vaughan et al., 2014).

Green Gyms/Ecotherapy: Support participants in becoming physically and mentally healthier through contact with nature (e.g. walking in parks, developing green spaces). Exercise in a natural environment has been associated with self-esteem and positive mood (Countryside Recreation Network, 2005; Pretty, Griffin, Sellens, & Pretty, 2003). Ecotherapy offered an accessible, cost-effective complement to existing treatments for mild-to-moderate mental health conditions (Mind, 2013). In an assessment of well-being for UK allotment gardeners, the main

themes to emerge were “a space of one’s own, meaningful activity, increased feelings of connectedness and improved physical and mental health” (Webber, Hinds, & Camic, 2015, p. 20). A review of studies on gardening as a mental health intervention found benefits across emotional, social, vocational, physical and spiritual domains (Clatworthy, Hinds, & Camic, 2013). A national UK review demonstrated that green gyms had the greatest impact on participants with the lowest physical health on joining who were nine times more likely to improve whereas those with the lowest mental health were three times more likely to improve (Yerrell, 2008).

Healthy Living Initiatives: Use social prescribing models to support health improvement and address health inequalities by targeting disadvantaged sectors of the population. Initiatives involve activities prescribed by community nurses or other health visitors for promoting health in its broadest sense (e.g. health checks, healthy eating, exercise and smoking cessation). Initiatives aim to give hope and encourage people to try different activities, develop new skills, make friends and have an enjoyable time. A review of exercise studies concluded that although there was an increase in numbers of sedentary people who became moderately active, health risk reduction was small because out of every 17 people referred, only one became moderately active (Williams, Hendry, France, Lewis, & Wilkinson, 2007).

Signposting/Information Referral: Consists of a series of links or “signposts” designed to guide patients to sources of health and welfare information (e.g. financial advice, care services, housing support, treatment options, self-help and support groups). The prescriptions give information through websites addresses and telephone numbers, and provide current NHS and patient organisation updates.

Supported referral: Focuses on enabling mental health service users to identify and access support to meet their needs, though places less emphasis on specific activities. Options for referral depend on the level of support required; most models involve a facilitator whose role includes liaising with providers and enabling patients to access the service prescribed by overcoming practical barriers or providing moral support.

Time banks: Based upon mutual volunteering schemes, participants deposit time spent helping others and withdraw time when they need assistance. All time is valued equally and transactions are recorded by a time broker. The use of time banks within urban renewal recognised that isolation might be a source of poor health, and problems could be social rather than medical in origin. Over 290 UK time banks provided referral to services in parallel with IAPTs, and the Department of Health worked with Timebanking UK to explore practical aspects of rolling out time banks in GP surgeries (National Endowment for Science, Technology & the Arts (NESTA), 2013). Seyfang and Smith (2002) found that time banks attracted socially excluded groups such as disabled or retired people and, compared with traditional volunteers, around twice as many time bank volunteers were not in formal employment. Frequent volunteering impacted positively on self-esteem and quality of life through social interaction. Volunteering (under “Give”) was one of the “Five Ways to Wellbeing” (New Economics Foundation, 2009).

Social prescribing in the UK

Social prescribing has been on the UK public health agenda for nearly two decades but has gathered more momentum in recent years due to the social, political, and economic environment, consequently, its potential to contribute to national health and well-being has been more widely recognised. The National Endowment for Science, Technology and the

Arts (National Endowment for Science, Technology & the Arts (NESTA), 2013, p. 6), for example, stated that “it is the social context in which people live that often determines their health and wellbeing”, and Public Health England (2015, p. 4) recognised that “community empowerment occurs when people work together to shape the decisions that influence their lives and health and begin to create a more equitable society”. Mossabir, Morris, Kennedy, Blickem and Rogers (2015) reviewed social interventions that linked health service patients to community-based sources of support, some of which were social prescribing schemes, and suggested that these interventions might bridge the gap between medical treatment and psychological well-being.

Key policy reports have provided a climate for social prescribing within local communities. The Prime Minister’s Challenge on Dementia (Older People & Dementia Team, 2012) stated that the NHS and Social Care were working with wider partners to try to reduce the use of antipsychotic drugs for dementia by two-thirds, and although they suggested there was much yet to do, there was a compelling case for more person- and community-centred approaches to public health and health care. The report advocated engaging and involving the wider community to support people with dementia so that they feel part of their community and participate in community life; actions might include practical help, group activities, and volunteering opportunities. It was also seen as important to combat social exclusion, especially of marginalised communities, by giving people a voice and to empower individuals and communities to take control over their lives.

As an influential factor, the Marmot Review (Marmot, 2010) highlighted the social determinants of health inequity and although it did not refer overtly to social prescribing, it recommended the creation and development of sustainable communities, and strengthening the role and the impact of ill health prevention; key areas that social prescribing seeks to address. Scaled-up versions of individual social prescribing initiatives could be used to counter the social determinants of health inequity, in offering purposeful activities that build resilience in the face of mental and physical ill health, encourage social interaction, self-esteem and confidence, and develop individual and community resources.

The (Foresight Mental Capital & Wellbeing Project, 2008) found that positive mental health and well-being were associated with social and economic benefits (e.g. education, productivity, social connectivity and reduced crime rates) and identified two themes: The vulnerability of mental resources and mental well-being to future challenges, and the potential of these resources to adapt, meet challenges and to thrive. Mental well-being was defined as “a dynamic state, in which the individual is able to develop their potential, work productively and creatively, build strong and positive relationships with others, and contribute to their community” Foresight Mental Capital and Wellbeing Project (2008, p. 10). Mental well-being was linked to “mental capital”, involving cognitive and emotional resources including cognitive ability, flexibility and learning efficiency, and “emotional intelligence” comprising social skills and resilience to stressors. Key factors such as purposeful activity, health, social support and self-esteem were seen to build individual and community resilience by exploiting mental well-being and mental capital.

A greater UK emphasis on mental health and well-being has seen significant shifts in government policy including identifying mental well-being and the pursuit of happiness as clear and measurable goals; rolling out a National Wellbeing Programme led by Public Health England to foster mutual support, self-care and recovery implemented by local Health and Wellbeing Boards; prioritising investment in the mental health of young people; ensuring

that adults with mental illness receive the parity of care expected for physical illness; and promoting holistic approaches (CentreForum Mental Health Commission, 2014). Social prescribing is recognised as a way of meeting these policy goals because it engages with social causes of mental and physical ill-health. Although referral to social prescribing schemes by health practitioners can be delivered through a range of models, all are heavily reliant upon the availability of appropriate community structures, such as third sector agencies and community groups (Public Health England, 2015).

To increase the provision and implementation of social prescribing, ideally, it is important for existing and planned schemes to conduct thorough evaluation of the health and well-being benefits at both individual and community level, and extrapolate the research findings to the health of the nation. It must be noted, however, that for Arts on Prescription as well as many other social prescribing programmes, funding has often not been made available for “state of the art” evaluation. It is perhaps easier to recognise that for physical health reasons, such as obesity and diabetes, prescription for exercise would be high on the agenda and yet, despite the reported expansion of primary focuses care referral to exercise schemes throughout the leisure industry, Dugdill, Graham, and McNair (2005, p. 1390), for example, found “sparse evidence underpinning their implementation”. The current review focuses therefore, on social prescribing schemes published in peer-reviewed journals and reports, such as those written by local government, third sector organisations or universities that utilise robust evaluation methods to provide evidence of the efficacy of these programmes.

Method

Search strategy

Using a systematised literature review format (Grant & Booth, 2009), the following data sources were used: Medline/Ovid, Embase, PsycINFO, Cochrane Library/Wiley, ISI Web of Science, EMBASE, SPORTDiscus, EBSCOhost, BioMed Central, NHS economic evaluation database, Health Technology Assessment database, Science Citation Index trial registries. Searches were conducted using a combination of text words and indexed terms involving generic terminology (e.g. “social prescribing”, “community referral”, “referral schemes”) and specific types of scheme (e.g. “Arts on Prescription”, “Books on Prescription” “Education on Prescription”). Searches were conducted on words related to search terms (e.g. “prescribing”, “referral”, “consultation” and “primary care”). Synonyms and reference lists from previous reviews and meta-analyses were consulted.

The bulk of social prescribing schemes within the data sources reported on exercise provision (i.e. “exercise on prescription” (EoP) or “exercise referral” (ER)). National Institute for Health and Care Excellence guidelines (NICE, 2014) advised that the criteria for exercise referral should involve assessment by a primary care or allied health professional to determine that a person is sedentary or inactive, and that they are not meeting UK physical activity guidelines, such as “Start Active, Stay Active” (Department of Health, Physical Activity, Health Improvement & Protection, 2011). No similar criteria were found for other forms of social prescribing scheme such as arts, cultural and educational interventions, except for the definitions given earlier published in project reports. Hand searches were carried out for additional information on social prescribing schemes such as from secondary sources (e.g. reviews

and meta-analyses), grey literature (e.g. conference proceedings and government papers), and websites (e.g. for local authorities and third sector organisations) from 2000 to 2015.

Inclusion and exclusion criteria

The review included articles reporting evaluated UK social prescribing schemes written in the English language. Research focused on published articles in peer-reviewed journals or high quality government, third sector or university reports of UK studies containing analysis of primary research material. The review included articles with either or both quantitative and qualitative methodologies, and participants with mental and/or physical health issues. It excluded articles reporting non-evaluated UK social prescribing schemes and non-UK schemes or those not written in the English language. Furthermore, studies were included if the data analysis was of responses from patients/clients but excluded if the studies primarily obtained data from other participants in the study, such as general and other health practitioners, facilitators or observers. Published protocols for trials not yet conducted or not yet published were omitted.

Results

Eighty-six articles and reports of social prescribing schemes were identified including five studies of pilot schemes; of these more than half (53%) had no published evaluation, whereas just under half (47%) contained evaluation of primary research material. Of the articles and reports with evaluation ($n = 40$), 17 (42%) employed quantitative methods which included eight (20%) randomised controlled trials (RCTs); 16 (40%) employed qualitative methods; and seven (18%) employed mixed methods (a combination of quantitative and qualitative evaluation) (Figure 1).

The division across social prescribing schemes of the 40 evaluated studies comprised 14 (35%) for Exercise Referral; nine (22.5%) for Arts on Prescription; three (7.5%) for Supported Referral, two (5%) for Sign Posting; one (2.5%) for each of Education on Prescription, Health

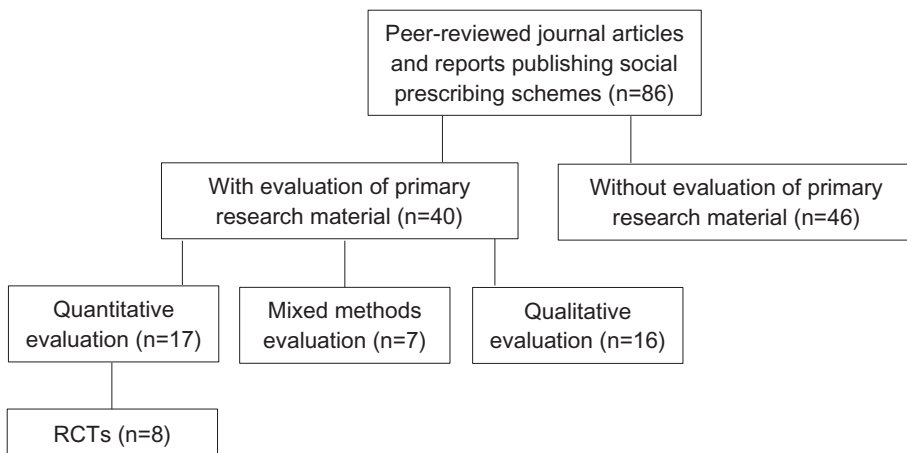


Figure 1. Extent of evaluation in peer-reviewed journal articles and reports, 2000–2015.

Living Initiatives, and Time Banks, with nine (22.5%) for Social Prescribing in general containing a range of local offers (Table 1).

Sample size varied considerably across evaluated schemes; smallest sample 10; largest sample 6541 (mean = 2003; median = 96; range = 6531) with larger sample sizes for mixed methods (mean = 1903; median = 220; range = 6492) and quantitative studies (mean = 1291; median = 460; range = 6393) than qualitative studies (mean = 135; median = 17; range = 1390). The sample sizes reviewed here are from studies ($n = 35$) where patient numbers were published and are from patients who provided data, not necessarily numbers initially referred to schemes; furthermore, additional data from health care practitioners or facilitators have been omitted from the above to solely represent service-user participation.

Of the 17 studies that conducted quantitative evaluation, 14 studies employed one to four standardised measurement scales comprising:

- *Anxiety*: Generalized Anxiety Disorder Assessment: (GAD-7: Spitzer, Kroenke, Williams, & Löwe, 2006);
- *Cost effectiveness*: Quality Adjusted Life Year (QALY: Drummond et al., 2009); EuroQol-5D (EQ-5D: Szende, Oppe, & Devlin, 2007);
- *Depression*: Patient Health Questionnaire: (PHQ-9: Spitzer, Kroenke, Williams & Löwe, 2006)
- *Functional status (health and wellbeing)*: Dartmouth CO-OP/WONCA Functional Health Assessment (Nelson et al., 1987); General Health Status (SF-36);
- *Hospital admissions*: Hospital Episode Statistics (HES: Department of Health, Department of Health Statistics Section SD2 HES, 1998; Department of Health, 2004);
- *Mental health*: General Health Questionnaire (GHQ: Sterling, 2011)
- *Mental wellbeing*: 14-item Warwick Edinburgh Mental Wellbeing Scale (WEBWMS: Tennant et al., 2007); 7-item Short Warwick Edinburgh Mental Wellbeing Scale (SWEBWMS: Stewart-Brown et al., 2011);
- *Physical activity*: Timed Up and Go test (TUG: Podsiadlo & Richardson, 1991); Physical Activity Recall (PAR) and 7-day Physical Activity Recall scale (7-d PAR: Sallis & Saelens, 2000); Physical Activity Questionnaire (PAQ: Kriska & Caspersen, 1997);
- *Psychological wellbeing*: Hospital Anxiety and Depression Scale (HADS: Zigmond & Snaith, 1983);
- *Quality of life*: Delighted-Terrible Faces (DTFS: Andrews & Withey, 1976);
- *Social isolation*: Social Isolation (SI: Hughes, Waite, Hawkley, & Cacioppo, 2004); and
- *Social support*: Duke-UNC Functional Social Support Questionnaire (Broadhead, Gehlbach, De Gruy, & Kaplan, 1988).

The eight RCTs were split between Exercise Referral with six studies, and Arts on Prescription and Supported referral with one study each. Nine of the quantitative studies, though only four of the RCTs, reported the use of statistical tests including parametric and non-parametric tests of difference (e.g. paired-samples t -test, Mann-Whitney test, linear and multiple regression) and tests of association (e.g. chi squared test). These studies included Exercise Referral schemes that, in some cases, used inferential statistics to compare physiological measures such as systolic and diastolic blood pressure, body mass index (BMI), and cholesterol. Two studies, not included in above, developed their own measures, testing correlation of items (Pearson and Spearman Correlation) and internal consistency (Cronbach's alpha).

Table 1. Social prescribing schemes with evaluation of primary research material.

Scheme	Authors	Intervention	Participants	Measures	Analysis and findings
Arts on prescription	Crone et al. (2013)	Mixed methods study of 10-week arts programme "Art Lift" delivered in general practice surgeries or community facilities in Gloucestershire	Patients ($n = 202$) from differing socio-economic backgrounds referred through primary care for anxiety, depression, stress, low self-esteem, and chronic illness	Change in well-being on 14-item WEMWBS 7-item scale SWEWBS; completion rates; observation and interviews	Pre-post comparison of WEMWBS using t-test found significant well-being improvement with 7- and 14-item scale; of those referred nearly 78% attended and nearly 50% completed programme
	Potter (2013, 2015)	2013: RCT with wait-list controls: 12 weekly sessions over two phases across Cambridgeshire and Peterborough 2015: Mixed methods, 12 weekly sessions in Cambridgeshire	Patients referred by primary care practitioners ($n = 66$) with mild to moderate anxiety and/or depression	Self-reported measures at baseline and 12-weeks: GAD-7; PHQ-9; WEMWBS; SI, plus analysis of semi-structured interviews	2013: Percentage change found positive outcomes for 78% patients: increase in mental well-being (83%); decrease in social isolation (44%), anxiety (61%) or depression (67%) 2015: Percentage change found positive outcomes for 91% patients: increase in mental well-being (76%); decrease in social isolation (69%), anxiety (71%) or depression (73%)
	Griffiths (2002)	Qualitative study: "East London Arts on Prescription", in Tower Hamlets, South Hackney, Newham, and Waltham Forest	Young men from African and Caribbean communities (n unknown) with mental health issues facing racism and discrimination	Interviews and consultation explored benefits of art and creativity in mental health promotion to develop alternative approaches to mental well-being	Suggested priorities included building partnerships involving arts, creativity, spirituality, and alternative therapies and integrating these with education, training, and employment as the basis of holistic approaches
	Eades & Ager (2008)	Isle of Wight "Time Being" qualitative study of 12 weekly, creative sessions	Patients ($n = 59$) referred from primary care; follow-up patients ($n = 22$)	Interviews, focus groups, and pre-post questionnaires for depression, negative state, ease of talking to people; plus 6-month follow-up	Increases in positive mood, confidence, and sociability; follow-up responses suggested that for some people, benefits were sustained
	Secker, Spandler, Hacking, Kent & Shenton (2007)	Retrospective quantitative analysis of Isle of Wight "Time Being" study	Patients from "Time Being" ($n = 53$) with mild-to moderate mental health issues	Interviews, focus groups, and pre-post questionnaires for depression, negative state, self-esteem, social anxiety, and ease of talking to people	Statistical analysis found significant improvements in ratings of mood, self-esteem, ease of talking to people, one symptom of depression (difficulty falling asleep) and two negative emotions (sadness and anxiety)

(Continued)



Table 1. (Continued)

Scheme	Authors	Intervention	Participants	Measures	Analysis and findings
	Stickley and Eades (2013)	Follow-up qualitative analysis two years after "Nottingham Arts on Prescription" scheme	Patients ($n = 10$) who were currently using or had previously used mental health services	Follow-up interviews conducted with participants two years after programme end	Found increased motivation and aspiration, self-confidence, improved social and communication skills; emerging themes included education; practical and aspirational achievements; broadened horizons; accessing new worlds; assuming and sustaining new identities; and social and relational perceptions
	Stickley and Hui (2012a)	Qualitative study used narrative enquiry approach for 3-year programme (2008–2011)	Participants currently or previously using mental health services ($n = 16$)	In-depth patient interviews conducted in community-based arts venues	Programme regarded as creative and therapeutic environment, a safe place with others with similar experiences, leading to a sense of social belonging; peer support, social and employment opportunities
	Stickley and Hui (2012b)	Qualitative study for above programme	Referrers ($n = 10$) from 148 who referred participants 2008–2011	In-depth semi-structured interviews	Thematic analysis found referrers valued intervention as it offered a professionally led, therapeutic, relaxing, and safe environment; referrers reported that participants took pride in the work that helped them to build confidence, find meaningful occupations, develop skills and express themselves
	White and Salamon (2010)	Mixed methods interim evaluation of 18-month "Arts for Wellbeing" pilot phase in County Durham consisting of six weekly sessions	Patients referred by GP practice ($n = 220$: 70 males and 150 females) aged 18–99 with physical and/or mental ill-health; participants in focus groups ($n = 6–10$ per group)	Participant demographics; pre-post well-being measure: WEMWS (7- and 14-items), activity evaluation after six weeks; participant comments and narratives from six focus groups with 15 open-ended questions	Two-thirds of patients improved on two WEMBS items ("I've been feeling useful," "I've been feeling relaxed) but no statistical analysis; activity evaluation found positive relationship with artist-educator and enjoyment; focus groups indicated programmes should exceed six weeks

Education on Prescription	Aylward & James (2002)	Qualitative study "Prescription for Learning" in Nottingham aimed to reduce dependency on health professionals	Patients ($n = 196$) referred by GPs, health visitors, practice and mental health nurses, for anxiety, low self-esteem and chronic pain; two-thirds had no academic qualifications and had not accessed learning since school	Semi-structured interviews with patients ($n = 10$) and health care professionals ($n = 8$)	Patients reported enhanced confidence and self-esteem; lifted mood; improved sleep; increased activity; widened social networks; greater sense of control, hope and optimism; and healthier behaviours
Exercise on Prescription/ Exercise Referral	Cock, Adams, Ibbetson, and Baugh (2006)	Pilot study trialled modified measure for evaluation of service quality	Patients attending exercise referral scheme ($n = 627$) referred through primary care	REFERQUAL questionnaire developed from SERQUAL questionnaire	Pearson and Spearman correlations found significant association between questionnaire items; Cronbach's alpha showed internal consistency
	Crone, Johnston, Gidlow, Henley, and James (2008)	Study of patient uptake, initial progression, and completion of scheme over three years in Gloucestershire	Comparison of mental health ($n = 134$) and physical health ($n = 2767$) groups	Rates of uptake, initial progression, and completion as percentages	Chi-Squared test found that participants with mental illness had significantly poorer initial progression and completion rates than those with physical illness
	Dinan, Lenihan, Tenn, and Iliffe (2006) Duda et al. (2014)	Pilot study of two-phase progressive exercise programme with 14 London-based general practices Cluster randomised controlled trial (RCT) compared 10–12-week exercise referral with or without Self Determination Theory (STD): Deci & Ryan, 1985)	Patients ($n = 158$) aged 75+ deemed borderline frail by their GP or practice nurse Patients ($n = 347$) referred by GP or practice nurse, randomly allocated to standard referral ($n = 163$) or STD group ($n = 184$)	Timed Up and Go test (TUG) in seconds at baseline and programme end Self-reported 7-day PAR at baseline, 3- and 6-month HADS and physiological measures	Paired sample t-test ($n = 76$) found highly significant improvement in TUG scores, mean difference = 3.5 s Multi-level modelling of log-transformed, skewed PAR data found significant gains for both groups at programme end largely sustained for 6-months with no significant group differences
	Edmunds, Ntoumanis, and Duda (2007)	Mixed methods study of individually tailored exercise programmes of 3-month duration grounded in STD principles for primary care patients in the West Midlands	Overweight/obese patients ($n = 49$) referred by GP, aged 16–73 with coronary heart disease (CHD) risk factors and body mass index (BMI) = 38.75	Self-report questionnaire at baseline, 1- and 3-months; rating scales for exercise behaviour, motivation regulation, perceived autonomy and support, psychological need satisfaction and well-being; rated adherence (1–5 scale) of attendance	Cronbach's alpha showed internal consistency of measures; multilevel regression analysis found that participants who adhered to programme reported greater self-efficacy and relatedness decreasing over time; no significant differences in other variables at 3-months

(Continued)



Table 1. (Continued)

Scheme	Authors	Intervention	Participants	Measures	Analysis and findings
	Flannery, Loughren, Baker, and Crone (2014)	Mixed methods study of 12-week programme of 30-minute sessions; general practices across South Gloucestershire	Patients ($n = 2505$; 987 m; 1518 f) aged 18–94 years; White British (95%); referred for BMI >30 and depression; patients with chronic illness ($n = 312$)	Self-reported pre-post WEMWBS; physiological measures; phone interviews with patients ($n = 14$) and practice nurses ($n = 2$); and cost analysis	Paired samples t -tests found significant increases in well-being and session number at programme end; significant decrease in systolic blood pressure and waist measurement; no difference in BMI, weight loss, hip measurement, or diastolic blood pressure; cost per patient completing programme: £13.77
	Gidlow et al. (2007)	Doctoral research project, patients referred by health profession to exercise provision at leisure centres across several English counties	Participants ($n = 3568$) referred over 3 years (2000–2003), aged <92 years	Referral uptake 1+ session and completion 80+%; age, gender, rurality of location and level of deprivation as percentages of county population as a whole	Chi squared and Mann–Whitney tests found referred patient demographics significantly different from rest of county: more older adults, women, and those in deprived areas; logistic regression showed participants in rural areas with greatest deprivation dropped out sooner
	Harrison et al. (2005)	RCT compared exercise referral plus written information with written information only for physical activity; single borough-based 12-month scheme in North West England	Primary care patients ($n = 545$) defined as sedentary by GP, randomly assigned to intervention or control group, stratified for gender, age and baseline CHD risk	Percentage of patients meeting physical activity target 90+ minutes per week of moderate/vigorous physical activity; 7-day PAR at 6- and 12-months	Logistic regression of intent-to-treat analysis (due to missing responses) found significant increase in intervention group at six months (10%) but no significant increase at 12 months (5%); and no interaction with gender, age or CHD risk
	Isaacs et al. (2007)	RCT with three arms: effectiveness and cost-effectiveness of two, 10-week programmes of exercise (leisure centre or leisure instructor-led walking programme) or tailored advice-only, in outer London borough	Patients ($n = 943$) aged 70–94 years; not currently physically active with at least one CHD risk factor referred by GP	Comparison of three groups at baseline, 10 weeks, 6- and 12 months (control group randomised to intervention at 6 months) for percentage change in self-reported exercise, blood pressure, lipids, and cholesterol	Increase in patients achieving 150+ minutes per week of moderate activity: leisure centre (13.8%), walking group (11.1%) and advice-only (7.5%); significant reduction in blood pressure in all groups at each assessment point compared with baseline; advice-only was the most cost effective for percentage gain

James et al. (2009)	Longitudinal design over two years (2005–07) across five leisure centres in London borough offering individual and group sessions for up to 26 weeks	Patients ($n = 1315$) referred through primary care due to metabolic, orthopaedic, and cardiovascular conditions	Data recorded by exercise professional included: outcome completion, blood pressure reduction, and body mass reduction, with age, gender, ethnicity, occupation, and reason for referral	57% patients completed programme, 49% with reduced blood pressure, greater for skilled manual than other occupational groups, and 33% with reduced body mass; 3-stage binary logistic regression found higher completion rates associated with age increase, and lower completion rates associated with pulmonary ill-health
Lamb et al. (2002)	RCT compared community walking scheme plus advice on physical activity and cardiovascular health by a health care professional, with advice-only controls	Participants ($n = 260$) aged 40–70 years taking <120 min moderate intensity activity per week, excluding those with recent illness	Percentage of increased activity to >120 min per week at baseline, 6- and 12-months, and measures of aerobic capacity, BMI, blood pressure and cholesterol	Chi-squared tests showed significant improvement in aerobic capacity for both groups and no differences in self-reported physical activity for intent-to-treat analysis; health walks more effective than advice only for 73% participants who completed trial
Milton (2008)	University report on Eastern and Coastal Kent scheme, developed over 14 years; tailored 12-week twice-weekly programmes evaluated over three (2005–08)	Patients ($n = 6541$) <59 years referred by health professional for conditions including diabetes, hypertension, obesity, muscular-skeletal and mental health issues	Evaluation at baseline and 12-weeks: Demographics and physiological indicators plus qualitative component exploring patient attitudes towards physical behaviour	Participants who completed scheme ($n = 1423$) showed reduction in blood pressure, decrease in body fat (mean=1.5%); reasons for dropping out: Risk of joint damage, increase in cost of attending after 12 weeks, participants felt programmes were inappropriate and were demotivated at not achieving fitness aims
Munro et al. (2004)	Cluster RCT with 12 general practices across Sheffield not previously running exercise referral schemes (8 practices assigned to intervention group; 4 to control group); free, locally held exercise classes over three years	Patients ($n = 6420$) aged 65+ referred by GP excluding those with physical activity score in top 20%	SF-36 and PAQ for older adults at baseline, 2- and 3-years, with covariates of age, gender, smoking, whether living alone and hospital admissions <2 years prior to intervention; and instrumental cost per QALY	No group differences between health service use or death rate; when adjusted for baseline, intervention group showed higher health status for “energy” dimension of SF-36; annual cost per programme around €128,302 euros (mean €126 per session); for survey completers ($n = 1052$) mean cost per QALY of €17,172 euros seen as cost effective

(Continued)



Table 1. (Continued)

Scheme	Authors	Intervention	Participants	Measures	Analysis and findings
Healthy Living Initiatives	Murphy et al. (2012)	RCT "Wales National Exercise Referral Scheme", compared exercise intervention with normal care; and cost effectiveness of 16-week programme of twice-weekly one-to-one or group exercise instruction	Sedentary patients ($n = 2160$) aged 16–88 referred by GP for CHD risk alone or mental ill-health alone (mild-to-moderate anxiety, depression, or stress) or for CHD risk and mental ill-health combined	Measures at baseline and 16 weeks using 7dPARS, HADS and EQ5D analysed on an intention to treat basis; follow-ups at 12 months using telephone and postal questionnaires	47% intervention group ($n = 473$) completed programme; ordinal regression found exercise effective for CHD-alone only; those referred for mental ill-health showed no significant difference between intervention and control groups; cost per participant for 16-weeks was £385 (participant paid £32)
Healthy Living Initiatives	Dundee Healthy Living Initiative (2011)	Dundee Healthy Living Initiative promoted healthy eating, mental health and well-being, physical activity and smoking cessation	Participants ($n = 1400$) living in Dundee referred by health practitioner or self-referral	Surveys circulated to all participants compared attendance over three years (2011–14)	Participant attendance of rolling programmes decreased over three years (weight loss 20%, physical activity 13%, smoking cessation 42%); no inferential statistics
Social Prescribing	AgeUK (2011)	Quantitative study of Yorkshire and Humber scheme; offered social, emotional, and practical support	Patients aged 55+ referred to AgeUK ($n = 62$) and other organisations ($n = 34$)	Smaller number older people (n unknown) completed WEMWBS at baseline and programme end	WEMWBS showed pre-post mean difference (24.5–36.0 out of 70) indicating well-being improvement but no inferential statistics conducted
	Branding & House (2007)	Mixed methods study of "Refresh" community activities to complement medical care in Salford	Patients referred by GP practices (n unknown)	Patient interviews (n unknown) about frequency of GP visits and medication prescriptions	Initial scheme found 66% patients had fewer GP visits with 34% reduced by three or more, and 46% reduction in medical prescriptions
	Branding & House (2007)	Qualitative study in Keynsham near Bristol, referrals from three GP practices to local options	GP-referred patients ($n = 11$), general practice staff ($n = 8$), community stakeholders ($n = 2$)	Semi-structured interviews to explore acceptability of scheme as a non-clinical intervention	Patient insight limited as most regarded their GP as person most likely to address their needs despite being embedded in medical model
	Dayson and Bashir (2014)	Quantitative evaluation of "Rotherham Social Prescribing" pilot by Centre for Regional Economic and Social Research, Sheffield Hallam University, involving 29 GP practices	Patients ($n = 1607$: 627 m; 980f), with 87% aged 60 and older referred by GP or Intensive Case Management team	Well-being measures tool with eight areas designed for service, at baseline and after 3–4 months; HES mapped use of hospital resources over time including Accident and Emergency, outpatient appointments and admissions	Increase in one or more well-being areas (83% patients); reduction in admission rates Accident and Emergency 20%, inpatient 21%, outpatient 21%; NHS cost indicated return of 50p for every £1 invested; service delivery cost for one year recouped in 18–24 months;

Lovell and Bockler (2007)	Qualitative study of Sefton "North West Social Prescribing Development Project"	Patients with mild to moderate mental health issues (n unknown)	HADS; facilitator diary entries	Analysis not reported as insufficient data; facilitator diary entries of commented on individual progress, confidence and self-esteem Improvement in depression but not social functioning; responses identified improved mental health, self-esteem and social contact, decreased anxiety, renewed motivation, and interest in further arts activities
Secker, Spandler, Hacking, Kent & Shenton (2007)	Qualitative study of Stockport "North West Social Prescribing Development Project"	Patients (n = 51; 24 for social functioning, 17 for depression and 10 for postnatal depression)	Review of patients' mental health; patient responses to two open-ended questions	Main patient issues: Social isolation, housing and benefits, training, and families; scheme addressed wider determinants of health through routine clinical services; provided alternative support and improved community-professional partnerships
South et al. (2008)	Case study of "Community Health Advice Team" (CHAT) by Bradford South and West Primary Care Trust (2005) with three general practices	Patients (223; 75 m; 148 f) aged 16+, through GP- or self-referral (tear-off slip on leaflet)	Semi-structured interviews with patients (n = 10), GPs (n = 3), practice managers (n = 2), healthy living centre co-ordinator (n = 1)	82% of patients visited health care professional less in six months after scheme than in six months before it; staff saw intervention as access to expert knowledge and as part of holistic practice
Woodall & South (2005)	Qualitative analysis of CHAT, pilot scheme in Bradford; including arts, crafts, and volunteering activities	Patients (n = 10) with non-clinical needs referred by general practices	18 semi-structured interviews with patients (n = 10) and health care staff (n = 8)	Concluded that voluntary patient advisory services broaden the referral options available for managing patients with psychosocial issues in primary care
Faulkner (2004)	Qualitative pilot study of "Patient Support Service" practice-based voluntary patient referral scheme in Doncaster	Patients being treated medically for psychosocial issues (n = 10) referred by GP; voluntary sector employed as advisors (n = 8) to link patients to community support	Semi-structured interviews and case studies with patients and volunteer advisors	Repeated measures analysis of covariance adjusted for baseline found that Amalthea group showed reductions in anxiety and negative emotion but no significant difference in depression or perceived emotional support; patients were more positive about general health and quality of life; found higher cost of referral to Amalthea project than control group
Grant et al. (2000)	RCT "Amalthea Project"; liaison organisation between primary care patients and voluntary organisations, in 26 general practices in county of Avon	Patients (n = 161) identified as having psychosocial issues by GP, randomly allocated to Amalthea Project (n = 90) plus routine GP care or routine GP care alone (n = 71)	Measures at baseline and 1- and 4-month follow-ups: HADS; Duke-UNC Functional Social Support Questionnaire; Dartmouth COOP/WONCA Functional Health Assessment, Delighted-Terrible Faces; economic evaluation of contact with primary care	

(Continued)



Table 1. (Continued)

Scheme	Authors	Intervention	Participants	Measures	Analysis and findings
Signposting/ Information Referral	Howells (2001)	Mixed methods study of 12-month programme in Swindon; offer included assisted access, coping skills training, support, and self-help literature	Participants (n unknown) referred by health professionals or self-referral	GHQ at baseline and 12 months; interviews with patients	Showed reduction in GP consultation; reduction in referral to secondary care; and increase in patient satisfaction
	Sykes (2002)	Pilot study using qualitative methods in Penge and Anerley Park primary care practices	Participants (n unknown) experiencing psychosocial issues, signposted to services by health practitioners from GP practices	Interviews with patients and health care staff	Complemented primary care; and bridged gap between primary care and voluntary sector; outcomes included: increased patient self-esteem and confidence, reduced social isolation and resolution of practical issues
Signposting/ Information Referral	Blastock, Brannelly, Davis & Howes (2005)	Qualitative study of "Signposting Project" of local services in North Staffordshire	Patients experiencing mental distress (n = 12) referred by general practice staff	Well-being questionnaires sent by post or conducted over the phone; phone interviews with practice staff	Offer valued by participants who reported improvements in well-being but it increased the workload of practice staff
	Phillips (2010)	Qualitative study of "Signpost" in Colchester and Tendring, Essex; offer included computing, job application, CV-writing and basic numeracy and literacy	Unemployed participants from deprived areas of Essex (n = 34) referred through Job Centre Plus	Online survey of participants, interviews with small number of managers, staff and volunteers; analysis of committee meeting minutes and business plan	Range of services met participant needs and increased self-esteem and confidence; identified additional need for services for those coming off incapacity benefit, more benefits advice, and a redundancy support package for organisations making redundancies
Time Banks	Boyle et al. (2006)	Interpretative phenomenological analysis (IPA) of time banks in South East London, Gorbals in Glasgow, and Welsh Valleys	Local residents on three sites (n = 65) and staff (n = 41), co-ordinator training programmes for community action researchers	Interviews with residents; questionnaires and focus groups used to assess impact of co-productive time bank schemes	Found involvement in time banks associated with reduced level of medical care or hospital admission; co-production extended social networks; informal self-help activity needed to be positively encouraged for people outside of paid work

Of the social prescribing schemes that employed qualitative and mixed methods studies, the largest number was for Arts on Prescription. Data collection across schemes consisted mainly of interviews (in-depth, semi-structured and follow-up), though focus groups; questionnaires (postal or phone); and surveys were also employed. Although the review focused on studies of patient data, some studies included interviews with GPs, other health practitioners and facilitators who also provided diary entries. Most methods of analysis comprised thematic analysis, with one study of Time Banks (Boyle, Clark, & Burns, 2006) carrying out interpretative phenomenological analysis.

Referral pathways

Historically, UK social prescribing schemes were based on exercise or self-help books and involved general practice referral. More recently, referral has widened to other health professionals within primary care such as practice nurses or physiotherapists and beyond, including pharmacists, reducing the burden on general practitioners. Social prescribing occurs directly through clinician referral, or indirectly through a link worker (referral agent or navigator) acting as a bridge between primary care and community resources (Figure 2). Providing general practices with link workers who have knowledge of local organisations can improve patient access to community and voluntary sector resources which can be boosted by personal support.

In addition to grant-funding, two other funding pathways have been advocated: (i) directly commissioned from service providers, possibly in conjunction with local authorities; (ii) directly funded by patients given personal budgets to buy services to manage long-term conditions, or from their own funds. As NHS patient services are commissioned by Clinical Commissioning Groups it is essential that social prescribing is factored into UK Department of Health policy, so that schemes are incorporated into NHS commissioning processes (Public Health England, 2015).

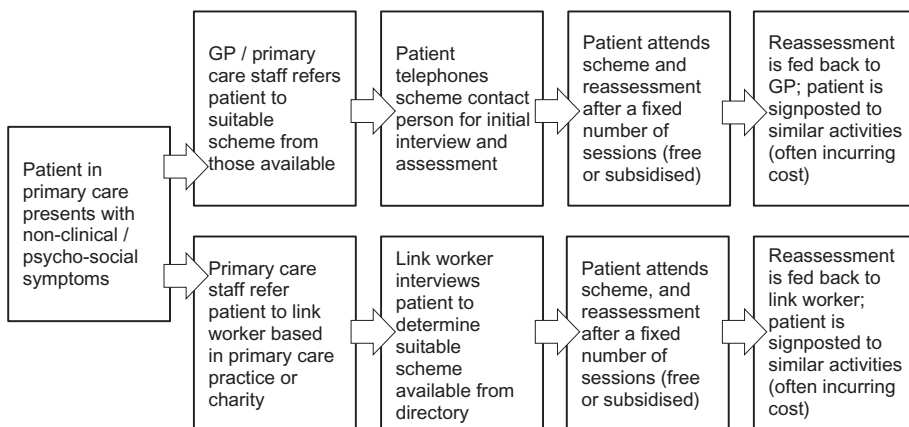


Figure 2. Examples of social prescribing referral pathways in UK primary care.

Outcomes

Key outcomes of the reviewed studies revealed multiple benefits reported by participants and referrers directly engaged in social prescribing:

- Increases in self-esteem and confidence, sense of control and empowerment;
- Improvements in psychological or mental well-being, and positive mood;
- Reduction in anxiety and/or depression, and negative mood;
- Improvements in physical health and lifestyle;
- Reduction in visits to general practitioners, referring health professionals and primary or secondary care services;
- Provision to general practitioners of a range of options to complement medical care for a more holistic approach;
- Increases in sociability, communication skills and social connections;
- Reduction in social isolation and loneliness, support for hard-to-reach people;
- Improvements in motivation and meaning in life providing hope and optimism; and
- Acquisition of learning, new interests and skills.

Discussion

The review evidenced various methods of evaluating a range of social prescribing schemes to provide proof of patient and referrer benefits. More than half of the articles and reports reviewed did not employ any quantitative methods, with most quantitative evaluations occurring in studies of Exercise Referral. Over half of the Arts on Prescription studies used qualitative analysis of interview material and under half employed measures such as WEBWMS; only one of these carried out inferential statistical tests and the remainder used descriptive statistics such as percentage change. Considering some of the limitations of quantitative questionnaires, which were not developed in arts and health contexts, qualitative methods may often be more suitable for understanding *how* Arts and Prescription works and *what kind* of impacts it has on well-being. There have been no reported evaluations for Books on Prescription using either quantitative or qualitative methodologies during the 15-year span of this review. These findings were in keeping with Kilgarriff-Foster and O’Cathain’s (2015, p. 11) scoping review that noted stakeholders perceived social prescribing as feasible and acceptable in improving well-being and reducing the use of health services yet there was “limited quantitative evidence of its effectiveness”.

Stickley and Hui (2012a, p. 574) found that Arts on Prescription participants experienced social, psychological, and occupational benefits, although reported that these could not be easily separated. Typically, Arts on Prescription schemes analysed smaller sample sizes (<80) tending to carry out qualitative analyses where smaller samples are generally acceptable and more feasible. This needs to be taken in context, however; Arts on Prescription, unlike Exercise Referral, has been offered on a much smaller scale in the UK and in other countries. Funding for exercise and sports programmes has historically far exceeded arts funding, which arguably, may not have allowed for the development of organised and sustainable Arts on Prescription programmes until recently.

For Books on Prescription, the review found no UK publications looking specifically at participant outcomes, though a study of dementia risk (Verghese et al., 2003) compared the

relative effectiveness of different activities including reading, that was second to dancing, and Mindlab International (2009) found that reading was a beneficial form of relaxation though did not test Books on Prescription service-users. Education on Prescription, Healthy Living and Time Bank schemes also lacked evidence of their efficacy with just one evaluated study for each. It is possible though that some of these programmes were included in the general appraisal of eight studies of social prescribing in specific geographic locations (e.g. Bradford, Keynsham, Rotherham, Sefton, Salford and Stockport).

Of the 40 studies reviewed, 35 included details of sample size though only 6 reported effect sizes or indicated whether power calculations had been carried out. Whilst seven studies reported large sample sizes (1000+) (Crone, Johnston, Gidlow, Henry & James, 2008; Dayson & Bashir, 2014; Flannery, Loughren, Baker & Crone, 2014; James et al., 2009; Milton, 2008; Munro, Nicholl, Brazier, Davey, & Cochrane, 2004; Murphy et al., 2012) most were based on sample sizes of 10 to 50 which could impact the significance of the findings. Many studies with a qualitative approach did not report data from baseline or programme start so it is difficult to gauge their impact on participants.

One issue with studies using validated quantitative scales particularly with self-report is whether scales have been completed correctly; WEBWMS (Tennant et al., 2007) for example, requires that for scoring to be accurate, all questions are completed using a five-point scale. Although the authors of the present review disagree, White and Salamon (2010) noted a mid-programme Arts on Prescription change from 14-item to 7-item WEMWBS and wrote that this invalidated the measures due to lack of consistency. Lovell and Bockler (2007) used HADS with participants with mild-to-moderate health issues but were unable to carry out statistical analysis due to insufficient data; some of the forms were incorrect or incomplete in the way they were completed.

Despite the plethora of 17 measurement scales across 14 studies, only half employed statistical tests. Those not using inferential statistics comprised five studies comparing means and percentages but failing to indicate significant differences, and two studies conducting no analyses because of inaccurate self-report or mid-programme scale change. Yorkshire and Humber AgeUK (2011), for example used WEMWBs to compare pre-post means but conducted no inferential statistics so were unable to determine whether reported differences were statistically significant. Determining statistical significance is important because it allows the findings to be generalised to wider populations.

With the exception of eight RCTs (Duda et al., 2014; Grant et al., 2000; Harrison, Roberts, & Elton, 2005; Isaccs et al., 2007; Lamb, Bartlett, & Ashley, 2002; Munro et al., 2004; Murphy et al., 2012; Potter, 2013), the review found a lack of control groups, such as wait-list, life-as-usual or information-only comparators, to contrast with intervention group findings. The use of control groups can incur higher costs and require greater expertise in analysis though can provide robust evidence as to efficacy of schemes. Many studies compared measures at baseline with those at programme-end though cross-programme comparisons are difficult because of differing intervention durations (6 weeks to 18 months) and the various measures employed. It is also likely that a typical 10–12-week intervention with no follow-up measures may not reliably demonstrate longer term benefits.

It is not surprising that the review found more evaluated studies of Exercise Referral than other interventions as Pavey et al. (2011a,b,c) reported over 600 UK schemes. NICE (2006) determined, however, that evidence to support their use as interventions was insufficient. NICE (2014) noted the main issue with Exercise Referral was the paucity of evidence as to

whether increases in physical activity were sustained beyond the initial intervention and, also the cost of running subsidised schemes. Other authors (e.g. Mental Health Foundation, 2005) found that reasons for participant attrition included limited choice of activities and sessions not subsidised beyond the initial intervention. Harrison et al.'s (2005) RCT of Exercise Referral with sedentary adults compared a local authority scheme with a written information-only intervention and found a significant increase in physical activity after 6 months but after 12 months the small increase was non-significant.

Even if not conducting an RCT, it is important to set up social prescribing schemes with methods of evaluation in place; mixed methods are ideal in that quantitative scales can be used to compare measures at baseline with progress or stability over time, and qualitative measures can capture the lived experience of participants during and after the intervention. The extent and thoroughness of any evaluation will depend on the importance of evidencing outcomes, expectations of funders and available resources. There is definitely not a "one size fits all" approach to evaluation and as this review has evidenced, it is essential to discuss with those who commission social prescribing programmes, as well as participants, what they expect from the intervention. Furthermore, schemes such as Arts on Prescription are likely to benefit from methods which are able to capture the more creative nature of the activities. As Stickley and Hui (2012a) noted Arts on Prescription participants reported multiple outcomes and it could be argued that schemes involving arts and creativity offer a more holistic approach to tackle complex health problems. As neuroscience offers greater insights into how the brain responds cognitively and emotionally to creativity (e.g. Vartanian, Bristol, & Kaufman, 2013) more innovative methods may be required to capture the varied benefits of engaging in arts.

An exemplary UK health and well-being intervention that social prescribing schemes might emanate was "Well London" (Phillips et al., 2014). Phase 1 of the community engagement intervention combined a cluster RCT with qualitative research within a mixed methods approach. The programme compared populations from 20 geographic target sites with 20 matched control sites from London's census-defined poorest areas. Projects focused on physical activity, healthy eating, mental well-being, local environment, arts and culture, with a view to building community capacity and cohesion. A random sample of 4000 adults were surveyed before and after the intervention across sites. Primary outcomes were effects on healthy eating, physical activity and mental well-being. Secondary outcomes were a range of other eating, activity, well-being and social cohesion measures. The quantitative approach was complemented with qualitative interviews with intervention and control group residents. Although no statistically significant difference was found for primary outcomes, two secondary outcomes were significant; compared with controls, the intervention group ate more healthily and thought that people pulled together more to improve the local area.

It is important that social prescribing schemes take into account lessons learnt through evaluation of programme outcomes. Well London Phase 2 evolved from Phase 1 where target sites were located within natural neighbourhoods rather than census defined, and communities shaped local project delivery. Phase 2 has started to explore how the intervention could be scaled-up to reach larger audiences. Scaling up service provision to a system-wide health care intervention is another important aspect of social prescribing, particularly for initiatives that are successful at a modest level and can acquire sufficient investment.

Deciding on outcome measures will vary depending on the reasons for referral, type of social prescription, the needs of participants and the resources available for evaluation.

Outcomes currently measured and assessed include subjective well-being, quality of life, behaviour change, physiological changes, health service and medication usage. The NHS Confederation (2014) advocated that service providers should monitor outcomes from interventions, consider using externally sourced evaluations and different approaches, and measure social impact using social return on investment (SROI). Rather than use a single method to assess outcomes, whenever resources allow, it is preferable to gather converging evidence using mixed methods (quantitative and qualitative approaches). It is also important to embed feedback from all key stakeholders in evaluation including referrers, providers and participants.

Conclusions

Social prescribing, including arts on prescription, is an innovative approach to public health, as it advocates the use of voluntary and third sector organisations and creates referral pathways so that primary care patients with non-clinical needs can be directed to these sources of community intervention. As a part of social prescribing, arts on prescription programmes offer a wide range of opportunities to people across all age groups, different ability levels, and various physical and mental health needs, and could offer a more comprehensive approach than other schemes. South, Higgins, Woodall, and White (2008, p. 310) recognised the importance of the voluntary sector in contributing to individual and community health but found that “links between primary health care services and the voluntary and community sector are often underdeveloped”. As general practitioners and other health care professionals may not be aware of the diversity of local scheme or have the time to do this, “link workers” or “navigators” with local knowledge linked to or based primary health care settings, are typically employed. Social prescribing therefore has the potential to improve the health and well-being of patients presenting with psychosocial needs by accessing resources and social support from outside of primary care.

While some patients are helped by referral to mental health practitioners, others might benefit from social prescribing schemes offered as an adjunct to IAPT provision or other services, or while waiting to receive these. It is also important to look for other sources of provision within the community to offer non-clinical interventions linked to a range of mainstream health interventions. Within arts and health, participatory arts programmes (Mental Health Foundation, 2011) and museums and galleries (Camic & Chatterjee, 2013; Chatterjee & Noble, 2013), for example, as community resources are well-placed to promote health and well-being activities in non-traditional audiences as are other cultural, arts, environmental, exercise and socially oriented programmes. Social prescribing is a process where social care organisations, local councils and other community organisations that work directly with people can become involved with their needs. Through identifying local programmes, expanded community resources can be developed to address many social, health and well-being issues. This review demonstrates that robust evaluation is vital; whilst some social prescribing schemes have been well evidenced, other schemes, such as Books on Prescription require a better evidence base.

NICE (2008) made recommendations that community referral should evaluate the effects of social prescribing on longer term health outcomes; benefit from lessons learnt in engaging with communities to improve their health; and determine the amount of time and funding needed to evidence sustained health improvements. The review indicates that these

recommendations have only been partially met though the Healthy London Partnership (2017) report on social prescribing provides a framework for monitoring and evaluating schemes with a focus on cost-effectiveness and other outcomes (personal, health and well-being, quality of life and service activity).

To reduce future health costs, a stronger focus on collaborative commissioning of services and interventions is needed which would involve the strategic promotion of mental well-being, mental capital, creativity and resilience as outcomes. Within in the context of the arts, this would open opportunities for artists and arts organisations to either partner with others or develop on their own, Arts on Prescription referrals in local communities. It is important to make connections with a far wider range of stakeholders than previous traditional health models where partners might include community services, such as business, education, and leisure sectors, in addition to local third sector and voluntary agencies. In tandem, robust evaluation of such schemes are needed which integrate the views of all key stakeholders including patients, referrers, commissioners and providers, to ensure that as schemes are developed that they meet primary health care objectives as well as delivering the wider quality-of-life outcomes characteristic of non-clinical interventions.

Acknowledgements

The authors would like to thank the Arts and Humanities Research Council (AHRC) for funding to support this review, which was the first stage of the Museums on Prescription research project. We would also like to thank our partners, the Royal Society for Public Health and Arts Council England for their support.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This work was supported by Arts and Humanities Research Council [grant number AH/L012987/1].

References

- AgeUK. (2011). *Social prescribing: A model for partnership working between primary care and the voluntary sector*. Yorkshire and the Humber: Age Concern Support Services.
- Andrews, F. M., & Withey, S. B. (1976). *Social indicators of wellbeing*. New York, NY: Plenum Press.
- APPG/WE. (2014). *Wellbeing in four policy areas: Report by the All-party parliamentary group on wellbeing economics*. London: New Economics Foundation.
- Australian Government. (2013). *National arts and health framework*. Retrieved from <https://www.arts.gov.au/national-arts-and-health-framework>
- Aylward, N., & James, K. (2002). *Prescription for learning project: 2nd evaluation report*. Nottingham: Nottingham Heritage Action Zone.
- Biddle, S. J. H., & Mutrie, N. (2001). *Psychology of physical activity: Determinants, wellbeing and interventions*. London: Routledge.
- Blastock, D., Brannelly, T., Davis, A., & Howes, D. (2005). *Signposting evaluation report*. West Midlands: Suresearch, NIMHE West Midlands and University of Birmingham.
- Boyle, D., Clark, S., & Burns, S. (2006). *Hidden work: Co-production by people outside paid employment*. York: Joseph Rowntree Foundation.

- Brandling, J., & House, W. (2007). *Investigation into the Feasibility of a Social Prescribing service in primary care: A pilot project*. Bath: University of bath and bath and North East Somerset Primary Care Trust.
- Broadhead, W. E., Gehlbach, S. H., De Gruy, F. V., & Kaplan, B. H. (1988). The duke-UNC functional social support Questionnaire: Measurement of social support in family medicine patients. *Medical Care*, 26, 709–723.
- Callaghan, P. (2004). Exercise: A neglected intervention in mental health care? *Journal of Psychiatric and Mental Health Nursing*, 11, 476–483. doi:10.1111/j.1365-2850.2004.00751.x
- Callard, F., & Friedli, L. (2005). Imagine East Greenwich: Evaluating the impact of the arts on health and wellbeing. *Journal of Public Mental Health*, 4, 29–41. doi:10.1108/17465729200500029
- Camic, P. M., & Chatterjee, H. J. (2013). Museums and art galleries as partners for public health interventions. *Perspectives in Public Health*, 133, 66–71. doi:10.1177/1757913912468523
- CentreForum Mental Health Commission. (2014). *The pursuit of happiness: A new ambition for our mental health*. Retrieved from <http://www.centreforum.org/assets/pubs/the-pursuit-of-happiness.pdf>
- Chatterjee, H. J., & Noble, G. (2013). *Museums, health and wellbeing*. Farnham: Routledge.
- Clatworthy, J., Hinds, J., & Camic, P. M. (2013). Gardening as a mental health intervention: A review. *Mental Health Review Journal*, 18, 214–225. doi:10.1108/MHRJ-02-2013-0007
- Clift, S., Camic, P. M., Chapman, B., Clayton, G., Daykin, N., Eades, G., ... White, M. (2009). The state of arts and health in England. *Arts & Health*, 1, 6–35. doi:10.1080/17533010802528017
- Cock, D., Adams, I. C., Ibbetson, A. B., & Baugh, P. (2006). REFERQUAL: A pilot study of a new service quality assessment instrument in the GPO exercise referral scheme setting. *BMC Health Services Research*, 6, 61–66. doi:10.1186/1472-6963-6-61
- Coid, D. R., Williams, B., & Crombie, I. K. (2003). Partnerships with health and private voluntary sector organizations: What are the issues for health authorities and boards? *Public Health*, 117, 317–322. doi:10.1016/S0033-3506(03)00073-8
- Countryside Recreation Network. (2005). *A countryside for health and wellbeing: The physical and mental health benefits of green exercise*. Sheffield: Countryside Recreation Network, Sheffield Hallam University.
- Crone, D., Johnston, L. H., Gidlow, C., Henley, C., & James, D. V. (2008). Uptake and participation in physical activity referral schemes in the UK: An investigation of patients referred with mental health problems. *Issues in Mental Health Nursing*, 29, 1088–1097. doi:10.1080/01612840802319837
- Crone, D., O'Connell, E. E., Tyson, P. J., Clark-Stone, F., Opher, S., & James, D. V. B. (2013). 'Art Lift' intervention to improve mental wellbeing: An observational study from UK general practice. *International Journal of Mental Health Nursing*, 22, 279–286. doi:10.1111/j.1447-0349.2012.00862.x
- Dayson, C., & Bashir, N. (2014). *The social and economic impact of the rotherham social prescribing pilot: Main evaluation report*. Sheffield: Sheffield Hallam University, Centre for Regional Economic and Social Research.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behaviour*. New York, NY: Plenum Press.
- Department of Health. (2004). *Hospital episode statistics*. London: Stationery Office. Retrieved from <http://www.dh.gov.uk/publicationsandstatistics/statistics/hospitalepisodestistics/fs/en>
- Department of Health, Physical Activity, Health Improvement and Protection. (2011). *Start Active, Stay Active: A report on physical activity for health from the four home countries' Chief Medical Officers*. United Kingdom: Chief Medical Officers of England, Scotland, Wales and Northern Ireland.
- Department of Health Statistics Section SD2 HES. (1998). *HES the book*. London: Stationery Office.
- Dinan, S., Lenihan, P., Tenn, T., & Illiffe, S. (2006). Is the promotion of physical activity in vulnerable older people feasible and effective in general practice? *British Journal of General Practice*, 56, 791–793.
- Drummond, M., Brixner, D., Gold, M., Kind, P., McGuire, A., Nord, E., & Group, C. D. (2009). Toward a consensus on the QALY. *Value in Health*, 12, S31–S35. doi:10.1111/j.1524-4733.2009.00522.x
- Duda, J. L., Williams, G. C., Ntoumanis, N., Daley, A., Eves, F. F., Mutrie, N., ... Jolly, K. (2014). Effects of a standard provision versus an autonomy supportive exercise referral programme on physical activity, quality of life and wellbeing indicators: A cluster randomised controlled trial. *International Journal of Behavioural Nutrition & Physical Activity*, 11, 1–28. doi:10.1186/1479-5868-11-10
- Dugdill, L., Graham, R. C., & McNair, F. (2005). Exercise referral: The public health panacea for physical activity promotion? A critical perspective of exercise referral schemes; their development and evaluation. *Ergonomics*, 48, 1390–1410. doi:10.1080/00140130500101544

- Dundee Healthy Living Initiative and the Equally Well test Site. (2011). *Paper to NHS Tayside Board*. Dundee: Dundee health Living Initiative.
- Eades, G., & Ager, J. (2008). Time being: Difficulties in integrating arts in health. *Journal of the Royal Society for the Promotion of Health*, 128, 73–78.
- Edmunds, J., Ntoumanis, N., & Duda, J. L. (2007). Adherence and wellbeing in overweight and obese patients referred to an exercise on prescription scheme: A self-determination theory perspective. *Psychology of Sport & Exercise*, 8, 722–740. doi:10.1016/j.psychsport.2006.07.006
- Faulkner, M. (2004). Supporting the psychosocial needs of patients in general practice: The role of a voluntary referral service. *Patient Education and Counselling*, 52, 41–46.
- Feinstein, L., Hammond, C., Woods, L., Preston, J., & Bynner, J. (2003). *The contribution of adult learning to health and social capital*. London: Centre for Research on the Wider Benefits of Learning.
- Flannery, O., Loughren, E., Baker, C., & Crone, D. (2014). *Exercise on prescription evaluation report for south Gloucestershire*. Cheltenham: University of Gloucestershire, UK.
- Foresight Mental Capital and Wellbeing Project. (2008). *Mental capital and wellbeing: Making the most of ourselves in the 21st century, final project report*. London: The Government Office for Science.
- Friedli, L., Jackson, C., Abernethy, H., & Stansfield, J. (2009). *Social prescribing for mental health: A guide to commissioning and delivery*. Stockport: Care Services Improvement Partnership North West Development Centre.
- Gidlow, C., Johnston, L. H., Crone, D., Morris, C., Smith, A., Foster, C., & James, D. V. (2007). Sociodemographic patterning of referral, uptake and attendance in Physical Activity Referral Schemes. *Journal of Public Health*, 29, 107–113. doi:10.1093/pubmed/fdm002
- Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 15 review types and associated methodologies. *Health Information and Libraries Journal*, 26, 91–108. doi:10.1111/j.1471-1842.2009.00848.x
- Grant, C., Goodenough, T., Harvey, I., & Hine, C. (2000). A randomised trial and economic evaluation of a referrals facilitator between primary care and the voluntary sector. *British Medical Journal*, 320, 419–423. doi:10.1136/bmj.320.7232.419
- Griffiths, S. (2002). The mental health benefits of arts and creativity for African and Caribbean young men. *Mental Health Review Journal*, 10, 27–31.
- Hacking, S., Secker, J., Spandler, H., Kent, L., & Shenton, J. (2008). Evaluating the impact of participatory art projects for people with mental health needs. *Health & Social Care in the Community*, 16, 638–648. doi:10.1111/j.1365-2524.2008.00789.x
- Harrison, R. A., Roberts, C., & Elton, P. J. (2005). Does primary care referral to an exercise programme increase physical activity 1 year later? A randomized controlled trial. *Journal of Public Health*, 27, 25–32.
- Healthy London Partnership. (2017). *Steps towards implementing self-care: A focus on social prescribing for commissioners*. London: NHS: Healthy London Partnership. Retrieved from <https://www.myhealth.london.nhs.uk/healthy-london-partnership>
- Hillman, C. H., Erickson, K. I., & Kramer, A. F. (2008). Science and society: Be smart, exercise your heart: Exercise effects on brain and cognition. *Nature Reviews Neuroscience*, 9, 58–65. doi:10.1038/nrn2298
- Howells, L. (2001). The Swindon primary mental health care service. *Journal of Primary Care Mental health*, 5, 33–34.
- Hughes, M. E., Waite, L. J., Hawkey, L. C., & Cacioppo, J. T. (2004). A short scale for measuring loneliness in large surveys: Results from two population-based studies. *Research on Aging*, 26, 655–672. doi:10.1177/0164027504268574
- Husk, K., Blockley, K., Lovell, R., Bethel, A., Bloomfield, D., Warber, S., ... Garside, R. (2016). What approaches to social prescribing work, for whom, and in what circumstances? A protocol for a realist review. *Systematic Reviews*, 5, 1–7. doi:10.1186/s13643-016-0269-6
- Huxley, P. H. (1997). *Arts on prescription: An evaluation*. Stockport: Stockport Healthcare NHS Trust.
- Isaacs, A. J., Critchley, J. A., Tai, S. S., Buckingham, K., Westley, D., Harridge, S. D. R., & Gottlieb, J. M. (2007). Exercise evaluation randomised trial (EXERT): A randomised trial comparing GP referral for leisure centre-based exercise, community-based walking and advice only. *Health Technology Assessment*, 11, 1–165.

- James, D., Mills, H., Crone, D., Johnston, L. H., Morris, C., & Gidlow, C. J. (2009). Factors associated with physical activity referral completion and health outcomes. *Journal of Sports Sciences*, 27, 1007–1017. doi:10.1080/02640410903214248
- Kilgarriff-Foster, A., & O’Cathain, A. (2015). Exploring the components and impact of social prescribing. *Journal of Public Mental Health*, 14, 127–134. doi:10.1108/JPMH-06-2014-0027
- Kriska, A. M., & Caspersen, C. J. (1997). A collection of physical activity questionnaires for health-related research. *Medicine & Science in Sports & Exercise*, 29, S1–S205.
- Lamb, S., Bartlett, H., & Ashley, A. (2002). Can lay-led walking programmes increase physical activity in middle aged adults? A randomised controlled trial. *Journal of Epidemiology & Community Health*, 56, 246–252. doi:10.1136/jech.56.4.246
- Lovell, E., & Bockler, J. (2007). *Creative alternatives: Project report November 2006–August 2007*. Sefton: Sefton MBC’s Leisure Services Department (Arts Development), Sefton Health Improvement Support Service, and Sefton PCT.
- Marmot, M. (2010). *Fair society, healthy lives: Strategic review of health inequalities in England post-2010*. London: The Marmot Review.
- Mental Health Foundation. (2005). *Up and running? Exercise therapy and the treatment of mild or moderate depression in primary care*. Retrieved from https://www.mentalhealth.org.uk/sites/default/files/up_running_report.pdf
- Mental Health Foundation. (2011). *An evidence review of the impact of participatory arts on older people*. Edinburgh: Author.
- Milton, K. (2008). *Evaluation of the eastern and coastal kent exercise referral scheme: Final evaluation report*. Loughborough: Loughborough University.
- Mind. (2013). *Making sense of ecotherapy*. London: Author.
- Mindlab International, Sussex University. (2009). *Galaxy Commissioned Stress Research*. Brighton: Sussex University.
- Mossabir, R., Morris, R., Kennedy, A., Blickem, C., & Rogers, A. (2015). A scoping review to understand the effectiveness of linking schemes from healthcare providers to community resources to improve the health and wellbeing of people with long-term conditions. *Health & Social Care in the Community*, 23, 467–484. doi:10.1111/hsc.12176
- Munro, J. F., Nicholl, J. P., Brazier, J. E., Davey, R., & Cochrane, T. (2004). Cost effectiveness of a community based exercise programme in over 65 year olds: Cluster randomised trial. *Journal of Epidemiology and Community Health*, 58, 1004. doi:10.1136/jech.2003.014225
- Murphy, S. M., Edwards, R. T., Williams, N., Raisanen, L., Moore, G., Linck, P., ... Moore, L. (2012). An evaluation of the effectiveness and cost effectiveness of the National Exercise Referral Scheme in Wales, UK: A randomised controlled trial of a public health policy initiative. *Journal of Epidemiology & Community Health*, 66, 745–753. doi:10.1136/jech-2011-200689
- National Endowment for Science, Technology and the Arts (NESTA). (2013). *More than medicine: New service for people powered health*. London: NESTA Innovation Unit.
- National Health Service Confederation. (2014). Comparing apples with oranges? How to make better use of evidence from the voluntary and community sector to improve health outcomes. *NHS Confederation Briefing*, 273, 1–11.
- National Institute for Adult Continuing Education. (2003). *Mental health and social exclusion– Social exclusion consultation document: A commentary and response from the National Institute for Adult Continuing Education*. Nottingham: National Institute for Adult Continuing Education.
- National Institute for Health and Care Excellence. (2006). *Four commonly used methods to increase physical activity: Brief interventions in primary care, exercise referral schemes, pedometers and community-based exercise programmes for walking and cycling*. NICE Public Health Guidance, 2. London: Author.
- National Institute for Health and Care Excellence. (2014). *Exercise referral schemes to promote physical activity*. NICE Public Health Guidance, 54. London: Author.
- National Institute for Health and Clinical Excellence. (2008). *Community engagement and development*. NICE Guidelines (PH9). London: Author.
- National Institute for Health & Welfare. (2014). *Arts and culture for well-being in Finland*. Retrieved from: <https://www.thl.fi/en/web/thlfi-en/research-and-expertwork/projects-and-programmes/arts-and-culture-for-well-being>

- Nelson, E., Wasson, J., Kirk, J., Keller, A., Clark, D., Dietrich, A., Stewart, A., & Zubkoff, M. (1987). Assessment of function in routine clinical practice: Description of the CO-OP Chart method and preliminary findings. *Journal of Chronic Disfunction*, 40, 555–635. doi:10.1016/S0021-9681(87)80033-4
- New Economics Foundation. (2009). *National accounts of wellbeing: Bringing real wealth onto the balance sheet*. London: New Economics Foundation.
- Older People and Dementia Team. (2012). *Prime minister's challenge on Dementia: Delivering major improvements in dementia care and research by 2015*. London: Department of Health.
- Pavey, T. G., Taylor, A. H., Fox, K. R., Hillsdon, M., Anokye, N., Campbell, J. L., ... Searle, J. (2011a). Effect of exercise referral schemes in primary care on physical activity and improving health outcomes: Systematic review and meta-analysis. *BMJ British Medical Journal*, 343, 1–14. doi:10.1136/bmj.d6462
- Pavey, T. G., Anokye, N., Taylor, A. H., Trueman, P., Moxham, T., Fox, K. R., ... Mutrie, N. (2011b). The clinical effectiveness and cost-effectiveness of exercise referral schemes: A systematic review and economic evaluation. *Health Technology Assessment*, 15, 1–254. doi:10.3310/hta15440
- Pavey, T. G., Taylor, A. H., Fox, K. R., Hillsdon, M., Anokye, N., Campbell, J. L., ... Taylor, R. S. (2011c). Effect of exercise referral schemes on physical activity and improving health outcomes: Systematic review and meta-analysis. *British Medical Journal*, 343, 1–14. doi:10.1136/bmj.d6462
- Phillips, G., Bottomley, C., Schmidt, E., Tobi, P., Lais, S., Yu, G., ... Clow, A. (2014). Well London Phase 1: Results among adults of a cluster-randomised trial of a community engagement approach to improving health behaviours and mental wellbeing in deprived inner-city neighbourhoods. *Journal of Epidemiology Community Health*, 68, 606–614. doi:10.1136/jech-2013-202505
- Phillips, K. (2010). *Signpost evaluation report*. Colchester: Genoa Partnership. Retrieved from <http://sign-post.info/Signpost%20Evaluation%202010.pdf>
- Podsiadlo, D., & Richardson, S. (1991). The timed Up & Go: A test of basic functional mobility for frail elderly persons. *Journal of the American Geriatrics Society*, 39, 142–148. doi:10.1111/j.1532-5415.1991.tb01616.x
- Potter, S. (2013). *Arts on prescription 2010–2012 evaluation report: Executive summary*. Cambridge: Arts and Minds.
- Potter, S. (2015). *Arts on prescription 2014–2015 evaluation report*. Cambridge: Arts and Minds.
- Pretty, J., Griffin, M., Sellens, M., & Pretty, C. (2003). *Green exercise: Complementary roles of nature, exercise, diet in physical and emotional wellbeing and implications for public health policy*. Retrieved from <http://www.outdoorfoundation.org/pdf/GreenExercise.pdf>
- Public Health England. (2015). *Guide to community-centred approaches for health and wellbeing: Briefing*. London, UK: Public Health England.
- Sallis, J. F., & Saelens, B. E. (2000). Assessment of physical activity by self-report: Status, limitations, and future directions. *Research Quarterly for Exercise and Sport*, 71, 1–14.
- Secker, J., Spandler, H., Hacking, S., Kent, L., & Shenton, J. (2007). Empowerment and arts participation for people with mental health needs. *Journal of Public Mental Health*, 6, 14–23. doi:10.1108/17465729200700024
- Scottish Development Centre for Mental Health. (2007). *Developing social prescribing and community referrals for mental health in Scotland*. Retrieved from www.gov.scot/Resource/Doc/924/0054752.pdf
- Secretary of State for Health. (2006). *Our health, our care, our say: A new direction for community services*. London: Department of Health, Crown Copyright.
- Seyfang, G., & Smith, K. (2002). *The time of our lives: Using time banking for neighbourhood renewal and community capacity building*. London: New Economics Foundation.
- Sykes, S. (2002). A social prescribing scheme in Penge and Anerley. *Journal of Primary Care Mental health*, 6, 11–12.
- South, J., Higgins, T.J., Woodall, J., & White, S. M. (2008). Can social prescribing provide the missing link? *Primary Health Care Research & Development*, 9, 310–318. doi:10.1017/S146342360800087X
- Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine*, 166, 1092–1097. doi:10.1001/archinte.166.10.1092
- Sterling, M. (2011). General health Questionnaire 28. *Journal of Physiotherapy*, 57, 2011–2059. doi:10.1016/S1836-9553(11)70060-1
- Stewart-Brown, S. L., Platt, S., Tennant, A., Maheswaran, H., Parkinson, J., Weich, S., ... Clarke, A. (2011). The Warwick-Edinburgh mental wellbeing scale (WEMWBS): A valid and reliable tool for measuring

- mental wellbeing in diverse populations and projects. *Journal of Epidemiology and Community Health*, 65, A38–A39. doi:10.1136/jech.2011.143586.86
- Stickley, T., & Eades, M. (2013). Arts on prescription: A qualitative outcomes study. *Public Health*, 127, 727–734. doi:10.1016/j.puhe.2013.05.001
- Stickley, T., & Hui, A. (2012). Social prescribing through arts on prescription in a UK city: Participants' perspectives (Part 1). *Public Health*, 126, 574–579. doi:10.1016/j.puhe.2012.04.002
- Stickley, T., & Hui, A. (2012). Social prescribing through arts on prescription in a UK city: Social prescribing through arts on prescription in a UK city: Referrers' perspectives (Part 2). *Public Health*, 126, 580–586. doi:10.1016/j.puhe.2012.04.001
- Szende, A., Oppe, M., & Devlin, N. (2007). EQ-5D value sets. *EuroQol Group Monographs*, 2, 1–12.
- Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., ... Stewart-Brown, S. (2007). The Warwick-Edinburgh mental wellbeing scale (WEMWBS): Development and UK validation. *Health and Quality of Life Outcomes*, 5, 63–76. doi:10.1186/1477-7525-5-63
- Tyldesley, R., & Rigby, T. (2003). *The arts on prescription postnatal depression support service: An evaluation of a twelve-week pilot*. Stockport: Stockport Primary Care.
- Vartanian, O., Bristol, A. S., & Kaufman, A. B. (2013). *Neuroscience of creativity*. Cambridge, MA: MIT Press.
- Vaughan, S., Wallis, M., Polit, D., Steel, M., Shum, D., & Morris, N. (2014). The effects of multimodal exercise on cognitive and physical functioning and brain-derived neurotrophic factor in older women: A randomised controlled trial. *Age and Ageing*, 43, 623–629. doi:10.1093/ageing/afu010
- Vergheze, J., Lipton, R. B., Katz, M. J., Hall, C. B., Derby, C. A., Kuslansky, G., ... Buschke, H. (2003). Leisure activities and the risk of dementia in the elderly. *New England Journal of Medicine*, 348, 2508–2516. doi:10.1056/NEJMoa022252
- Webber, J., Hinds, J., & Camic, P. M. (2015). The wellbeing of allotment gardeners: A mixed methodological study. *Ecopsychology*, 7, 20–28. doi:10.1089/eco.2014.0058
- White, M., & Salamon, E. (2010). *An interim evaluation of the 'Arts for Wellbeing' Social Prescribing Scheme in County Durham*. Durham: Durham University, Centre for Medical Humanities.
- Williams, N. H., Hendry, M., France, B., Lewis, R., & Wilkinson, C. (2007). Effectiveness of exercise-referral schemes to promote physical activity in adults: Systematic review. *British Journal of General Practice*, 57, 979–986.
- Woodall, J., & South, J. (2005). *The evaluation of the CHAT social prescribing scheme in Bradford South & West PCT*. Leeds: Leeds Metropolitan University.
- Yerrell, P. (2008). *TCV green Gym national evaluation report: Summary of findings*. Oxford: Oxford Brookes University.
- Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica*, 67, 361–370. doi:10.1111/j.1600447.1983.tb09716.x