

Financing Mechanisms of Social Prescribing Projects: A Systematic Review

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Aging populations and the increasing mental health issues among them have set a new challenge for the international community, governments, and people. Given this, society's role is very important, and involving the local community in resolving the problems can play a pivotal role. The current study presented the systematic review of the financing mechanism and cost-effectiveness of the "social prescribing" (SP) project in the United Kingdom and how SP can be adapted for other settings. The data showed comparatively low running costs and the overall effectiveness of SP projects. The running cost of SP projects varied between £54,525 and £1.1 million. The cost-effectiveness of the projects reported as 12% and the return of investment was about 50% depending on the type of analysis and the activities implemented. This type of intervention can be one of the options that support solving the issues of aging populations and their accompanying mental disorders.

Keywords: Social prescribing; Aging in place; Referral system; Project effectiveness

INTRODUCTION

Improving the quality of health care services, increasing vaccination, decreasing maternal and infant mortality rates, eradicating infectious diseases, and the integration of technology in health care systems has contributed to the rise in life expectancy rates worldwide. Life expectancy has increased by almost 20 years compared to that in the 1960s, and more than 5 years compared to that in 1990. Further, the proportion of the population over 65 years of age has nearly doubled since 1960. The World Health Organization estimated that the world's population aged 60 years and older will increase to 22% by 2050 (2 billion) and 80% of the older people will reside in low- and middle-income countries [1]. Consequently, the burden of age-related mental disorders, non-communicable diseases, and chronic illnesses will increase among the elderly population.

A report on Ageing and Health emphasizes the need for comprehensive public-health action through improving the measurement, monitoring, and understanding the elderly population's requirements; establishing an age-friendly environment, and developing long-term care systems [2]. Older person-centered and integrated care has become an agenda among both developed and developing countries. However, social interaction is needed to promote the well-being of the elderly population and prevent ageism; provide social connectivity; and alleviate anxiety, loneliness, and depression among older people.

"Social prescribing" (SP) is a model first adopted in the United Kingdom that provides a way of linking patients in primary care with sources of support within the community. SP was introduced to patients with long-term conditions in the second half of the 2000s [3]. Social prescribing is defined as "enabling healthcare professionals to refer patients to a link worker, to co-design a non-clinical social prescription to improve their health and well-being" by the Social Prescribing Network [4]. In essence, SP services utilize a link worker to whom a person is referred and who is responsible for assessing a person's needs and suggesting appropriate resources for them. Furthermore, the SP delivery system is based on an understanding of

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the main stakeholders' perceptions and experiences. The delivery system is crucial for the implementation of SP and useful for informing future initiatives [5].

Previous studies and reports have provided evidence on SP and showed a mixed effect from the intervention. Some studies reported a reduction in primary care visits as well as referrals to secondary-level facilities [6-8]. Qualitative studies on patient satisfaction also showed improvements in mental and physical health, decreased feelings of loneliness, and social isolation [9]. Several recent SP projects in the United Kingdom and their adaptation in Canada and Australia have increased interest in the implementation and effectiveness of the projects in other countries. However, less evidence on the financing of the SP projects and cost-effectiveness is found. This study aims to evaluate the financing mechanism of SP projects and provide recommendations on their establishment and further insights. The operational definition of the SP financing mechanism used in the study includes the SP funding, financing scheme, payment system, and source of financing.

METHODS

1. Data sources

The Database of Abstracts of Reviews of Effects (DARE), the National Health Services Economic Evaluation Database (NHS EED), PubMed, Cochrane Library, and EBSCOhost were searched for the relevant academic research on the economic evaluation and description of the financing process. Additionally, Google was searched for grey information and project reports. The literature search was conducted between June 19 and July 5, 2019.

We used a 'core search' strategy for available keywords, 'standard search' to access a variety of derived information such as cited document search, and 'ideal search' to search scholarly and general articles including the above two search methods. The main keywords were 'social prescribing,' 'social prescribing fund,' 'social prescribing financing,' 'social prescribing cost,' and additionally, we searched for 'cost-benefits,' 'payment system,' 'local government budget,' and 'national budget.' The search expression used AND/OR statements for truncation searches.

2. Study selection

The literature selection was based on the inclusion and exclusion criteria established in advance. Two researchers independently performed literature selection and matched it. Only documents published in the English language between January 2000 to June 2019 were considered.

The literature was included if it contained information on the referral from primary care settings to a coordinator, link worker, navigator, or facilitator of social prescribing; information on the project financing and fund sources provided, and a study on the cost-effectiveness and cost-benefits presented. We considered quantitative, qualitative, or mixed methods studies; studies focused on evaluation and analyses of the project, as well as project reports.

The study was excluded if it presented referrals from outside of primary care settings, including activities that could potentially be socially prescribed (community-based programs, physical activities, etc.) but did not involve linked workers or included a self-referral system. Systematic review studies, reviewing studies, and guidelines were also not included in the analysis.

3. Systematic screening

A total of 1,293 studies were searched for and obtained through the databases, and eight more studies were included in the review using the snowballing method. Fifty-nine studies were excluded due to duplication, and 1,179 ineligible studies were excluded after screening by title and abstract. In all, 63 studies were included in the complete review process. Among these, 53 were excluded as they did not match the selection criteria. Twenty-nine studies did not contain the necessary information on project financing or a cost-effectiveness analysis; seven papers were not available in the full text; another seven systematic review studies were excluded; six documents provided the review on the SP, and four documents contained guidelines for running the SP projects.

Finally, 10 documents on nine projects were included in the analyses after applying PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) screening (Figure 1). Among the selected documents, five provided information on project financing, and seven presented the cost-benefits or cost-effectiveness analyses. The number of participants varied between 92 and 1,607.

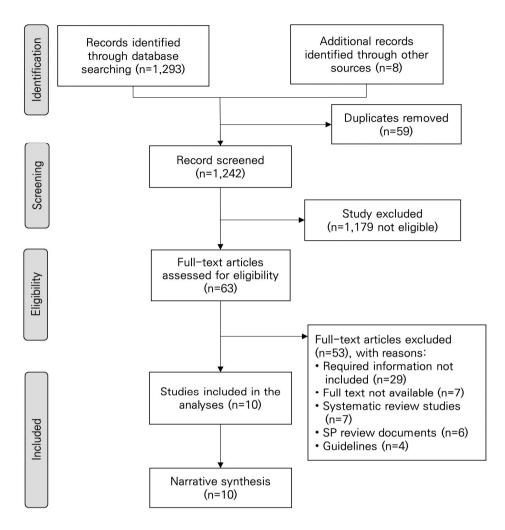


Figure 1. PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flow diagram of systematic screening.

The project implementation period ranged from 1 to 2 years; the average duration of each was 15 months. In all included studies, the linked workers met the patients or communicated by telephone to advise them, discuss their needs, and link them to the appropriate social activities.

4. Data extraction and analysis

The details of the project information, number of participants, activities, financing, and cost-effectiveness were extracted. A narrative synthesis of the evidence was performed as the data were too limited to perform a meta-analysis on the outcomes of interest. A narrative synthesis was performed to provide a preliminary summary of the SP project's financing and cost-effectiveness to identify similarities and

differences among projects and explore patterns in the outcomes.

RESULTS

1. Social prescribing in the United Kingdom

Information on the organization of the SP was extracted from six projects (Table 1). Four projects were implemented with support from general practice (GP) practices. The number of practices varied from 16 to 29 [10-14]. Three projects involved volunteers providing the link for patients [10,12,13]. Three projects were run and supported by clinical community groups (CCG) [10,12,15], two projects were supported by the Prime Minister's Challenge Fund [13,14], and one by

the Tudor Trust [8]. Figure 2 presents the scheme of the SP financing mechanism and distribution of funds among SP activities. The range of social services provided under the project varied depending on the services available in the region. However, analysis shows that the most frequently mentioned activities were befriending, exercise group, gardening group, lunch club, health and welding, art group, and advice and information services.

The link worker plays a vital role in the SP by helping the patients find appropriate social activities within the community. Table 2 presents salient tasks at the core of the link worker's mission, required qualifications, and payment range.

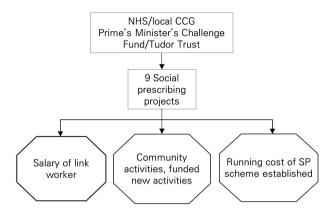


Figure 2. SP financing process. NHS, National Health Services; CCG, clinical community groups; SP, social prescribing.

Table 1. Social prescribing model projects

| No. | Project title | Supporting organization | Manpower | Social program and activities | Reference |
|-----|--|--|---|---|--|
| 1 | City and Hackney Social Prescribing | Lead organization: City and Hackney Clinical Commissioning Group Partner organization: Institute for Health and Human Development, Queen Mary University of London | Three SP coordinators; 22 GP surgeries staff | The SP coordinated and provided services on developing action plans based on personal circumstances to improve patient wellbeing. 85 Statutory and voluntary groups provided services such as lunch groups, gardening groups, benefits advice, and exercise groups. | Carnes et al. [11], The Health Foundation [15] |
| 2 | Rugby Social Prescribing Project (ConnectWELL) | Coventry & Rugby Clinical Commission Group; Warwickshire Community and Voluntary Action | Six trained volunteer advisors (navigators); six volunteers | 92 Signposts were made for approximately 80 different activities. Activities included befriending, lunch club, health & wellbeing, sports & leisure, education & training, art & media, advice & information services, etc. | Baines [10] |
| 3 | The Rotherham Social Prescribing Pilot | NHS Rotherham Clinical Commission Group; voluntary and community organization; 29 GP practices | Project manager; five voluntary and community sector advisors | 24 Voluntary and community organizations provided 31 different SP services. They included group activities, senior peer mentoring, sensory art & craft group sessions, one-to-one support worker, befriending and enabling, etc. | Dayson and Bashir [16] |
| 4 | Community Navigation in Brighton & Hove | The Prime Minister's Challenge Fund; Brighton & Hove Integrated Care Service; Age UK Brighton & Hove; Brighton & Hove Impetus, 16 GP practices | Three part-time staff; 16 community navigators (volunteers) | Social services included social and practical support for older people, befriending services, social services, information and advices services, debt and benefits advice. | Farenden et al. [13] |
| 5 | The Connect Project | Tudor Trust | Connect staff (not trained healthcare staff); staff provided signposting | Social program included mental health awareness raising and encouraging lifestyle changes. Public and private sector providers were searched for to provide self-help, self-management resources, educational, leisure and recreational facilities and fitness-, health-, and exercise-related activities. | Maughan et al. [8] |
| 6 | Gloucestershire Clinical Commissioning Group's Social Prescribing Service | Prime Minister's Challenge Fund; GP Practices | GP staff; Staff in Integrated Community Teams; staff in community hospitals; coordinators | More than 200 providers of social services are involved. The services provided are art, Alzheimer's prevention, book club, gym, outdoor gym, exercising, gardening, dancing, yoga, etc. | Kimberlee [14] |

GP, general practice.

Table 2. Link worker identification

| Mission | Qualification | Salary per annum |
|---|---|--------------------|
| Help elderly people suffering from social isolation, depression and | Health/social care/counselling or other relevant professional | £26,565 to £35,577 |
| loneliness by involving them in activities in their community | or academic qualification. | |
| (befriending, participation in arts, sports/exercise, and even | | |
| housing, debt or employment advice). | | |

Table 3. Characteristics of social prescribing project financing

| Author (year) | Project information | Country | No. of referred patients | Project activities | Financing scheme |
|---|--|---------|--------------------------|--|---|
| The Health Foundation [15] (2015) | Project title: social prescribing: integrating GP and community assets for health Period: February 2014–July 2015 | UK | 737 | (1) SP coordinators assessed individual needs and aspirations before connecting patients to appropriate, mainly non-clinical, community services delivered by 85 statutory and voluntary groups. | Funded by City and Hackney Clinical Commission Group Fund: £150.000 |
| Dayson and Bashir [16] (2014) | Project title: The Rotherham Social Prescribing Pilot Period: April 2012–March 2014 | UK | 1,607 | Enabled patients and their caregivers to access support from local VCS organizations. Contributed a VCS perspective to the assessment of needs and care planning for patients referred to multi-disciplinary Integrated Case Management Teams. Enabled the development of new community-based services to fill gaps in provision, and funded additional capacity within existing VCS to meet the increase in demand created by SP. | Commission Group |
| Baines [10] (2015) | Project title: The Rugby Social Prescribing Project Period: August 2014–August 2015 | UK | 92 | (1) Creation of social referring models (2) Training volunteers | Funded by the Coventry & Rugby Clinical Commission Group Fund: £54,525 |
| ERS Research and Consultancy [12] (2013) | Project title: Newcastle Social Prescribing Project Period: 15 months till March 2013 | UK | NA | (1) Support the development of a more community-based, preventive health care model (2) Locally accessible (3) Social health care solutions delivered by several linkwork organizations | Funded by Newcastle West Clinical Commission Group/Newcastle City Council Funds: £100,000/ £17, 493 (in-kind funding) |
| Farenden et al. [13] (2015) | Project title: Community Navigation in Brighton & Hove Period: August 2014–November 2015 | UK | 393 | Link patients with groups, services, and activities that can help improve their health and wellbeing. Promote self-management using patient-centered methods and an empowering approach. Provide a bridge between primary care and the VCS. Collect evidence about the use of and need for groups, services, and activities in Brighton & Hove that support patients' health and wellbeing. | Funded by the Prime Minister's Challenge Fund Funds: £172,276 |

GP, general practice; SP, social prescribing; SPCs, SP coordinators; VCS, voluntary and community sector; NA, not available.

2. Project running costs and activity

The running cost of SP projects varied between £54,525 and £1.1 million. Supported activities ranged from establishing a link between primary care and non-clinical community/voluntary service providers to support and development of new community-based services (Table 3). Four projects reported receiving financing from the National Health Services (NHS) through local CCGs [10,12,15,16], and one project was financed by the Prime Minister's Challenge Fund

[13]. Four projects supported only the running cost of the established SP scheme and provided salaries for the link workers [10,12,13,15]. One project also supported community activities as well as granted the establishment of new activities [16].

The Rugby Social Prescribing Project, Community Navigation in Brighton & Hove, and Newcastle Social Prescribing Project supported training costs for the volunteers and staff, link workers, project management staff, and printing material [10,12,13]. The Rotherham

Social Prescribing Pilot supported the running cost of the pilot, which was 44% of the overall budget and provided grants to community services providers (56% of total budget) [16]. The average cost per patient referred varied between £224.62 and £301 (Table 4).

Table 4. The unit cost of social prescribing services

| Social prescribing service | No. of referred patients | Unit cost per patient referred |
|----------------------------|--------------------------|--------------------------------|
| Gloucestershire CCG | 2,047 | £234.88 |
| Hackney and city CCG | 737 | £224.62 / £269.58 |
| Rotherham | 1,607 | £301 |
| Brighton & Hove | 393 | £262 |

CCG, clinical community groups.

3. Cost-effectiveness and cost-benefits

It is complicated to present a unified analysis of the cost-effectiveness of SP because the studies monetize different aspects. Among the selected studies, three report the return of investment, and two calculate social return on investments (SROI) [16,17]. Two studies present financial cost differences before-and-after study [6,8]; one reports cost saving per patient per year [13], and another shows cost-effectiveness as the difference between invested funds and received the amount of services [15] (Table 5).

The demand for GP consultations dropped by an average of 28% following a referral. Results varied from 2% to 70% [17]. Five studies in particular report an average 24% reduction in Accident and Emergency attendances, with the results varying from 8% to 26.8% [13-16]. SROI per £1 invested ranged between £1.20 and £3.10 in the first year. These benefits accrue to various stakeholders (patients, local public sector), including the health service providers [14,17]. Grant et al. [6] reported that the referral of patients to projects including social prescribing activities and subsequent contact with the voluntary sector

Table 5. Cost-effectiveness of the social prescription projects

| Project title | Referral activities | Impact |
|---|---|---|
| Gloucestershire Clinical Commissioning Group's Social Prescribing Service | 48% for mental health and wellbeing, 35% for benefits, housing, or environmental advice, 16% for generic health and fitness, 15% for caregiver's support, 14% for social isolation, 6% for memory loss, 4% for some other reason, e.g., falls prevention. | There is a return on investment of 43% for every £1 spent on the prescribing social service. |
| The Connect project | Social programs included raising of mental health awareness and encouraging lifestyle changes. | The connect SP service was associated with reduced financial costs and an increased carbon footprint per patient. The total difference between before and 6-month averages after 18 months of projects implementation in the intervention group were £177 and control group were £38. The difference between the intervention group and the control group was £147.15. |
| Rotherham Social Prescribing Pilot | Physical activities, information, and advice, community activity, befriending, and enabling | A number of positive economic benefits have been estimated: total NHS cost reductions by the end of the pilot of £552,000; a return on investment of 50% for each £1; potential NHS cost reductions of £415,000 in the first year, a return on investment between £1.41 and £3.38 for each £1 invested after 5 years. Social return on investment analysis has shown that the estimated value of patients' well-being benefits was between £819,000 and £920,000 by the end of the social prescribing pilot. The estimated annual value of volunteering to the pilot was between £81,000 and £148,000: an additional £0.16-£0.26 for each £1 invested in the pilot by the Clinical Commissioning Group. |
| Community Navigation in Brighton & Hove | Older people's services (nail cutting, Age UK Help at Home, etc.), exercise, adult learning, and support with benefits and finance. | Based on the evidence from a matched cohort study that showed a 12.75% increase in primary care capacity, the project provided a net cost saving of £1,365 per patient per year. |
| Shine 2014 final report: Social Prescribing | Referral to SP coordinators who assess individuals' needs and wishes before sending them to the appropriate non-clinical community services | Cost-effectiveness was reported as received a service value in amount £168,000 with £150,000 invested. Cost-effectiveness is 12%. |
| Wellspring Healthy Living Centre's Wellbeing Programme | The holistic approach of SP (from a referral by the general practitioners for mental health to support in terms of budgeting, nutrition, loneliness, etc.) | The Wellbeing Programme had a Social Return on Investment ratio of £2.90 for each £1. |
| Amalthea SP Project | Psycho-social problems (anxiety, etc.) | Analysis of the mean cost between intervention and control groups shows significantly differences. £153 vs. £133, ρ =0.025. |

SP, social prescribing; NHS, National Health Services.

results in significant benefits at the clinical level compared with usual GP care in the management of psychosocial problems but at a higher cost.

DISCUSSION

A systematic review was conducted of the data in 10 documents regarding the financing and cost-effectiveness of the SP project. Seven studies show that social prescribing delivers cost savings to the health service over and above operating costs, which is encouraging [4,6,13-16], but it is not fully quantified because the available evidence presents a mixed picture. Among the studies considered, only one was a randomized controlled trial and another was a before-and-after study; the rest of the documents are project evaluation reports. The result of the research needs to be interwith caution, considering the quality of the data [18].

The financing mechanism and cost-effectiveness of the SP projects are different and depended on the project. First, the results show that most financing mechanisms for SP projects were provided through the local CCGs under the NHS. The running cost of the SP projects was generally between £100,000 and £150,000, which included the establishment of the SP model, financing of volunteers and staff, providing information on the SP, as well as providing the salaries for the link workers.

Second, all documents considered show that SP projects are cost-effective. However, there is a lack of evidence from the randomized-trial and before-and-after studies. Furthermore, projects that invested more funds showed more SROI, potential cost reduction, and return on investment [3]. The accumulated evidence showed that patients with access to the prescribed social service are more satisfied with the support and information they receive and even feel better encouraged to manage their condition, which leads to substantial reductions in the utilization of resources and service delivery costs in the local public sector, in particular, health bodies. However, additional evidence on the evaluation of positive effects on patient condition is required [19].

Third, most of the people who received SP services were elderly. The evidence showed a positive effect on the mental health of elderly

people and their social integration and connection [13,16]. SP is one of the instruments available for establishing an age-friendly environment; decreasing social isolation, anxiety, loneliness, and depression among older people; improving mental health, and supporting the provision of long-term care services. Its comparatively low cost and cost-effectiveness may also support the rational use of funds and improve the measurement and monitoring of health conditions among the elderly.

We can conclude that establishing SP projects in a different setting cannot be very expensive under the condition of attracting volunteers as link workers during the initiation stage. However, the sustainability of the projects will require part- or full-time link workers. The patient pathway should be well designed to ensure success, and an assessment should be considered for further project evaluation design. Another implication of the SP project can be applied to Korean society. As the number of the elder population is steadily growing, the SP project will help to provide social services to older adults in the prevention of diseases such as dementia and social adaptation after the hospital discharge. Also, an adaptation of the SP project will be comparatively easy if the SP project is synchronized with the currently developed community care system. For example, the music storytelling program had a positive effect on the participating elderly, by improving their self-esteem, boosting the vitality of their mentality, as well as allowing the expansion of their social relations. In addition, the SP project analyzed in the study of Song et al. [20] can be seen as a community care model for improving the mental health of the elderly in other rural areas of the country.

In conclusion, our review showed the positive effects of the SP project implementation in terms of economic effects, as well as comparatively lower running costs. SP projects have different scopes of impact on providers, clients, and the community. The effect of SP activities includes reducing the burden on GPs, improve the health and well-being of patients (elderly), and increasing volunteer activity and social contact between individuals. The main funding sources of the SP projects in the United Kingdom are the NHS, the Prime Minister's Challenge Fund, and city council support. Implementing identical financing models may be difficult in other countries and, particularly, developing countries. Thus, additional funding sources and actors such as non-government organizations, social partnerships, and enterprises, among others, should be involved in the

projects. Furthermore, more research and studies providing complete evidence about the cost-effectiveness of social prescribing will improve our understanding of how to boost the value of available funding for SP. Without sufficient information, it is difficult to state that SP has a sustainable future as an impactful way to support peoples' health and wellbeing.

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