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RESEARCH ARTICLE

Social prescribing as an intervention for people with work-related injuries and psychosocial difficulties in Australia

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Abstract: Psychosocial interventions that encourage optimism and connectedness can promote workplace injury recovery and improve wellbeing. A mixed-methods evaluation of a twelve-week program for injured workers in Sydney, Australia, explored three research questions: if a social prescribing approach contributed to (1) increased social and economic participation, (2) improved psychological functioning and quality of life, and (3) decreased health service utilisation. Retrospective analysis of pre- and post-intervention data was undertaken, involving quantitative indicators of social, economic, and health status using validated psychosocial assessment tools (n = 175). These findings were augmented with data from the insurance regulator (n = 177) and insights from link worker documentation of participant activity (n = 178), a program satisfaction survey (n = 167), and participant interviews (n = 44). The social prescribing program was associated with significant improvements in frequency and confidence in participating in social activities and returning to work, in all measures of biopsychosocial wellbeing, and in reducing health service use. Qualitative information identified a range of personal improvements, including greater self-awareness, social connections, and ability to cope with the effects of injury and employment loss. This is the first known Australian study to evaluate a social prescribing intervention for psychosocial rehabilitation for injured workers in Australia. These findings suggest that a social prescribing approach is effective, but further consideration of barriers, including workplace characteristics and procedural difficulties in accessing occupational rehabilitation services, is needed.

Keywords: psychosocial support systems, occupational injuries, return to work, social participation, self-management

1 Introduction

Social prescribing has been shown to increase the quality of life for a range of people with health and psychosocial needs, but has not as yet been tested as an intervention to support injured workers[1–4]. In 2017, a not-for-profit health organisation introduced a social prescribing program for injured workers that aimed to address psychosocial difficulties (including pain, distress, isolation, and unmet welfare needs) and increase confidence and capacity to recover from injury and employment loss. Using quantitative and qualitative data collected from program participants, this paper will describe the outcomes of the social prescribing intervention, including benefits identified in the model of care, and suggest ways to further enhance recovery support for injured workers with psychosocial difficulties.

1.1 Psychosocial issues in workplace injury and rehabilitation

In 2016-2017, 89% of serious workers' compensation claims in Australia were due to physical injury and musculoskeletal disorders, with mental health conditions accounting for 7%, and other diseases 4%[5]. Work disability income support is estimated to have cost $37 billion Australian dollars during the 2015-2016 financial year, with 6.5 million people accessing employer provided leave entitlements and 786,000 accessing income support or compensation from government or private sources[6]. Compensation and income support processes operate in adversarial and scrutinising ways, and engaging in these has been shown to create stress and negatively impact mental health, functional abilities, social inclusion, and quality of life[7, 8]. Receiving inadequate care or support after a workplace injury is associated with increased risk of psychosocial difficulties in returning to work[9, 10]. In-

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terventions that act to increase individual empowerment and psychosocial wellbeing may increase resilience in engaging with needed compensatory, health and welfare systems, as well as promote quicker recovery from the workplace injury itself[7].

Having strong family relationships and social connections, an adaptive and optimistic attitude, and a capable and resilient sense of self have been shown to be conducive to a quicker return to work after injury[11]. Workplace features, such as feeling effective and supported in one's work role, and having a strong workplace culture (that does not include bullying, excessive performance expectations, or unsafe practices) also contribute to injury prevention and recovery[12]. Aspects that may reduce motivation to return to work after injury include being of older age, having younger children, experiencing family problems, and having a perception of the workplace as dangerous or of the employer as being unable or unwilling to allow for work role modifications[13]. In one large retrospective analysis of occupational rehabilitation users in Victoria, Australia, the factor that most predicted lower likelihood of returning to work was psychiatric treatment, but better outcomes were achieved by those in this group if they engaged in services that assisted in finding new employment rather than returning to their previous workplace[14]. A collaborative approach to workplace injury treatment and rehabilitation is recommended by physicians (involving the person, current or prospective employers, their insurer, the treating doctor, and any rehabilitation or support providers), giving consideration to any psychosocial barriers and needs that may hinder recovery[15].

The injured person's experiences of the injury and its contributing causal factors, their beliefs and expectations about recovery, and their motivation to return to work also need to be considered in rehabilitation processes. A Dutch study of 299 workers with lower back pain found that those who had higher job satisfaction and higher expectations of treatment returned to work earlier than those who did not[16]. A similar Canadian study of 1566 workers (with soft tissue injuries to the back or legs) found that recovery expectations accounted for one-sixth of the variance in time off work, and positive recovery expectations were associated with pain reduction and functional improvements[17]. An Australian study of 174 workers with musculoskeletal injuries found that despite high rates of desire or perceived social advantages in returning to work, specific psychological barriers including "fear of pain and re-injury, catastrophizing, and emotional distress" delayed or prevented return[18].

Psychosocial interventions can be effective in promoting workplace injury recovery. For example, a pain management education and counselling intervention tested on 34 Americans (who were unable to return to work due to back pain and fear and avoidance behaviours) found that compared to an equivalent control group, the intervention group had a significantly lower amount of time off work[19]. Ideally, if the goal is to increase the likelihood and expediency of returning to work, it is suggested that interventions target both intrapersonal aspects (such as coping strategies and supports) and characteristics of the workplace (such as stress, conflict, and safety) that engender or function as psychosocial barriers[20].

1.2 Social prescribing

Social prescribing has been shown to increase the quality of life for a range of people with health and psychosocial needs[1–4]. It emerged as a support intervention from the recognition that health services were generally not able to effectively respond to psychosocial needs (psychological, social, emotional, and/or spiritual needs) and structural inequities (such as poverty and unemployment) that impact wellbeing[3,21]. Social prescribing uses a person-centred model of care that involves wellbeing professionals assessing and referring participants to non-medical activities and services that can assist in addressing barriers to healthier thoughts and behaviours, reducing isolation and disadvantage, and improving overall quality of life[22]. Internationally, social prescribing interventions have generally targeted people living with chronic physical or mental health issues or disabilities, and who have limited social and financial resources to maintain their health and wellbeing. Social prescribing aims to empower people to increase behaviours that promote physical and psychosocial health, including exercising, practising positive thinking, and participating in social activities, and by doing so increase their confidence, sense of control, and health status[23]. It also acts to link people with services and education that can help address the social disadvantages that they are experiencing[24]. To date, there are no known published accounts of the use of social prescribing interventions to increase the wellbeing of injured workers.

The majority of published peer-reviewed studies on social prescribing are systematic reviews of program evaluations conducted in the United Kingdom. General benefits identified across programs include increased social participation, decreased health service usage, and greater empowerment and confidence[1–4]. Social prescribing intervention evaluations generally report effectiveness in enhancing social inclusion, promoting healthier living, and improving self-esteem and wellbeing; and are largely positively received by participants[22,25–34]. The link worker role was identified as a key feature of success in many studies, particularly in their frequent and sup-

Table 1. Data collection tools

Data provided by participants		
Program start	During program	Program end
Pre-questionnaire ($n= 200$)	Link worker documentation ($n= 178$)	Post-questionnaire ($n= 175$)
(1) Occupational, social and health details	Participant referrals	Occupational, social, and health details (repeated)
(2) Psychometric assessment using 6 validated tools	Activities attended	Psychometric assessment (repeated)
WHO-QOL-BREF		Program satisfaction survey ($n= 167$)
CANSAS		Semi-structured interview transcripts ($n= 44$)
EQ-5D-5L		
K10		
UCLA Loneliness Scale		
Pain scale		
(3) Demographic information		
(4) Summary claims information (n =171)		

portive contact. Limitations in social prescribing program evaluations include small sample sizes, and a lack of valid measures and longitudinal designs[1–4].

2 Methods

In 2017, a social prescribing program was developed and offered free to people aged 18 to 65 years who had been unable to return to work after a work-related injury acquired between six months and three years prior, or who had returned to work on reduced hours or duties, and were living in the general community within the area of greater Sydney, Australia. A further eligibility criterion was assessment by a general practitioner as experiencing psychosocial difficulties and likely to benefit from increased social participation; exclusion criteria were receiving acute inpatient treatment, having significant cognitive impairment, or participating in an alternative program for injured workers. The twelve week program was provided by qualified and experienced link workers (typically a social worker or similar), it involved holistic needs assessment, customised care planning, linkage and referral to appropriate locally-based health and social services, enrolment in social and therapeutic activities, and follow-up contact. Activities organised for participants included art and craft, yoga and relaxation, equine therapy, and social groups. Referrals were made to external organisations for services such as financial or relationship counselling, mental health support groups, housing and other assistance.

Retrospective analysis of de-identified data collected between July 2017 to March 2019 was used to independently evaluate the social prescribing program for injured workers, using a mixed method approach and measuring changes over time (see Table 1). The research questions explore whether a social prescribing approach contributed to (1) increased social and economic participation, (2) improved psychological functioning and quality of life, and (3) decreased health service utilisation for individuals with a work-related injury and psychosocial difficulties living in the community.

3 Data collection and analysis

Within-subject pre- and post-intervention statistical analysis involved self-reported frequency data pertaining to social and economic participation, and health service utilisation, and the following validated biopsychosocial tools:

(1) World Health Organisation Quality of Life (WHO-QOL-BREF): Overall quality of life and health satisfaction across physical, psychological, social, and environmental domains[41];

(2) Camberwell Assessment of Need Short Appraisal Schedule (CANSAS): Met and unmet welfare and support needs[35];

(3) EQ-5D-5L Health Thermometer: Perceived health, social life, and work readiness statuses[36];

(4) The Kessler Psychological Distress Scale (K10): Agitation, fatigue and depression[37];

(5) UCLA 3-item Loneliness Scale: Feelings of being left out, isolation, and lacking companionship[38];

(6) Pain scale: Pain intensity[39].

The validated questionnaire data was collected by link workers at the program start and upon completion. Differences across time (changes in social and economic participation, wellbeing scores, and health service usage) were analysed using paired-samples t-tests and Wilcoxon

Table 2. Participant demographic and occupational characteristics (baseline)

Characteristic	Followed up		Lost to follow-up	
	%	*n*	%	*n*
Gender		174		23
Male	56.3		30.4	
Female	43.7		69.6	
Country of birth		135		14
Australia	62.2		35.7	
China	5.2		–	
Other (*n* other countries listed)	32.6	(25)	64.3	(8)
Language spoken at home		142		16
English	85.2		62.5	
Mandarin	3.5		–	
Korean	1.4		–	
Other (13 languages given)	9.9		37.5	
Indigenous identity		165		22
Aboriginal	4.8		–	
Torres Strait Islander (TSI)	1.2		–	
Neither Aboriginal nor TSI	95.7		100	
Current employment status		124		14
Full-time	4		14.3	
Part-time	8.9		–	
Unemployed	37.1		78.6	
Income support, not looking to work	50		7.1	
Worker's compensation	46		14.3	
Time in workforce		168		21
< 1 year	3		–	
1 to 3 years	5.4		4.7	
3 to 5 years	5.4		–	
5 to 10 years	9.5		14.3	
> 10 years	76.7		81	
Injury-related time off work		166		20
< 1 year	31.9		25	
1 to 2 years	30.7		20	
> 2 years	37.4		55	

signed-rank tests for non-parametric data; differences in hours on certificate of capacity by time off-work were analysed using one-way between-groups analysis of variance. Descriptive summary information of participant demographic, occupational, social, and health characteristics, and program appraisal was also collected. The NSW State Insurance Regulatory Authority provided participant claims data including capacity for work at three time points (analysed using one-way between-groups analysis of variance), and descriptive information including referral source, date of injury, changes in work status, and claim closure. Participant qualitative information was collected by link workers via questionnaire, interviews and activity reports, and thematically analysed according to the framework developed by Braun and Clarke (2006)[40], where repeating patterns of meaning were delineated into themes and illustrated using representative data extracts.

4 Results

Baseline data was collected for 200 Plus Social program participants; of these, 175 also had follow-up data recorded (12.5% were lost to follow up). Participants had a mean age of 51 years (SD = 10.15, n = 157, range 27 to 71 years old), other characteristics are provided in Table 2. The most frequently reported occupational categories were manual labour (24%); tradesperson (16%); and professional, technical, or managerial (10%). Referrals to the program were received from insurance scheme agents (29%), rehabilitation providers (26%), general practitioners (19%), self-referral (24%), and other sources (2%).

4.1 Capacity to work

Self-reported current ability to work in paid employment increased significantly by 15% from baseline (28%)

to follow-up (43%; $Z = -4.60$, $p < 0.001$). Confidence in being able to return to work in the future also increased significantly: with an 18% reduction in those who were not confident, and 6% increase in those who were ($Z = -4.85$, $p < 0.001$).

Data provided by the NSW State Insurance Regulatory Authority for 136 participants at three time points (Time 1: baseline, Time 2: 12 weeks after baseline/post-intervention; Time 3: 24 weeks after baseline/12 weeks post-intervention), showed that the mean number of medically-approved hours of work per week increased significantly over time (F (2, 198) = 63.25, $p < 0.001$, partial $\eta^2 = 0.32$). Pairwise comparisons indicated the mean difference was significantly higher at each later point in time (all $p < 0.001$), with a mean increase of 10.76 hours ($SD = 13.95$) between Time 1 and Time 3. Capacity for work (given as three categories: no, some, or full capacity) also significantly improved at each time point: between Time 1 and Time 3, 58% of participants had an increase in capacity, 4% had a decrease in capacity, and 38% had no change ($Z = -6.98$, $p < 0.001$). When grouped by time off work, more participants who had one to two years off work recorded an improvement in capacity to work (29%) than those who had more than two years off work (14%), however, there were similar proportions that had returned to work at full capacity in both groups (12% and 13% respectively).

Interviewed participants described how losing their ability to work had led to social isolation, loss of identity and purpose, diminished dignity, financial issues, relationship problems, unhealthy behaviours, increased anxiety and/or depression, and suicidal ideation. Those who were either not planning or not able to go back to work described barriers such as severity of injury, ongoing pain or mobility issues, older age, and generalised or specific fears. Some spoke about how they had lost hope in ever working again, but participating in the social prescribing program had helped to restore their sense of self-efficacy and self-worth despite any current incapacities. Others described successful experiences in returning to work or retraining.

"The loss of my job, financial stability and the meaning it provided me, led to feeling a loss of hope and dignity. . . "

"I had been working in the construction industry for over 20 years until I suffered a serious back injury in 2015. I stopped working immediately. Due to the increasing physical pain and decline in my function, my mental health was getting negatively affected. My mental state deteriorated to the extent of wanting to end my own life. Six months following my injury, I finally got access to help, including a psychologist whom I still work with to this day. The loss of my job and level of function led to feeling a loss of meaning and purpose. Nevertheless, I am trying to stay hopeful in climbing back up the ladder. . . "

4.2 Social inclusion

The number of people that participants could count on increased significantly from a baseline mean of 3.45 ($SD = 4.17$) to 4.19 at follow up ($SD = 2.22$; $t(172) = -2.41$, $p = 0.017$). Satisfaction with social support also increased significantly: 27% indicated some level of satisfaction at baseline which doubled to 60% at follow-up ($Z = -8.09$, $p < 0.001$). Thirty-nine percent of the cohort indicated that they never participated in social activities at baseline; this significantly decreased to 9% at follow-up ($Z = -6.78$, $p < 0.001$).

Nearly all of the participants who were interviewed identified that isolation had been a problem, with many linking this to their loss of work and/or to the effects of their injury including pain, impaired mobility, or increased symptoms of depression or anxiety. Many participants described the loss of trust and social connections in the workplace as decreasing personal confidence in engaging with people and in social activities generally, and described the social focus of the program as being instrumental in helping them to re-engage and build friendships and peer support networks.

"I got to observe effective group work aimed at recovery in action and the benefit it gave to others - not just myself. I watched other people learn that they weren't alone, to relax, enjoy, build confidence in their ability to make art and begin to open up to the people around them. It was a joy to be a part of that process."

"Social skills are a muscle that needs to be exercised. Experience with groups. . . it all helps build that muscle. I really needed a gentle introduction to this exercise and my link-worker was great at pulling me into the journey out of isolation."

4.3 Biopsychosocial wellbeing

All positive wellbeing indicators improved significantly from baseline to follow-up (WHOQoL, CANSAS Met Needs, EQ-5D-5L, K10, UCLA 3-item Loneliness Scale, Pain Scale), and all negative wellbeing indicators (CANSAS Unmet Needs, K10, UCLA 3-tem Loneliness Scale, Pain Scale) were significantly reduced (see Table 3). Wellbeing mean score improvements as a percentage from baseline mean score are presented in Table 4: the strongest improvements (as a proportion of the indicator scale) were in social life status, work-readiness status, and in the reduction of unmet needs.

Participants described many improvements to their mental health and their experiences of pain and/or dis-

Table 3. Mean wellbeing scores at baseline and follow-Up including within-group significance tests

Scale	Baseline	Follow-up	Paired-samples t-test		
	M(SD)	*M(SD)*	*t*	*df*	*p*
WHO-QOL-BREF (Quality of life)					
Overall Quality of Life *(1 item)*	2.48 (0.89)	3.17 (0.82)	-10.24	172	<0.001
Overall Health Satisfaction *(1 item)*	2.13 (0.89)	2.80 (0.88)	-10.01	172	<0.001
Physical Quality of Life	18.82 (2.79)	21.12 (2.85)	-11.38	172	<0.001
Psychological Quality of Life	16.42 (3.44)	18.67 (4.21)	-8.05	172	<0.001
Social Relationships Quality of Life	7.74 (2.46)	9.31 (2.25)	-9.59	172	<0.001
Environment Quality of Life	23.68 (5.05)	28.31 (5.30)	-12.26	172	<0.001
Total Quality of Life	62.23 (13.18)	76.29 (14.82)	-14.21	172	<0.001
CANSAS (Welfare needs and support)					
Met Needs	10.79 (4.96)	14.17 (5.37)	-7.54	174	<0.001
Unmet Needs	6.36 (3.53)	3.05 (3.33)	11.49	174	<0.001
Total Needs*	17.15 (4.59)	17.22 (4.55)	-0.16	174	0.873
EQ-5D-5L (Health-related quality of life)					
Health Status	41.43 (21.48)	52.65 (20.51)	-9.23	173	<0.001
Social Life Status	28.57 (22.44)	44.43 (23.26)	-9.07	173	<0.001
Work Readiness Status	25.85 (26.47)	38.09 (30.89)	-7.22	173	<0.001
K10 (Psychological distress)	33.19 (8.84)	26.77 (8.09)	12.87	172	<0.001
UCLA 3-item Loneliness Scale	6.99 (1.97)	5.82 (1.78)	8.89	169	<0.001
Pain Scale	5.63 (1.83)	4.77 (2.10)	5.47	172	<0.001

Note: * CANSAS Total Needs assists in interpreting changes in met and unmet needs, but is not a wellbeing indicator in itself

Table 4. Mean wellbeing score improvements from baseline to follow-up

Scale	Mean Change
WHO-QOL-BREF (Quality of life)	
Overall Quality of Life *(1 item)*	+28%
Overall Health Satisfaction *(1 item)*	+29%
Physical Quality of Life	+12%
Psychological Quality of Life	+14%
Social Relationships Quality of Life	+20%
Environment Quality of Life	+20%
CANSAS (Welfare needs and support)	
Met Needs	+31%
Unmet Needs	-48%
EQ-5D-5L (Health-related quality of life)	
Health Status	+27%
Social Life Status	+56%
Work Readiness Status	+47%
K10 (Psychological distress)	-20%
UCLA 3-item Loneliness Scale	-16%
Pain Scale	-15%

tress. For many, it was having link workers that understood their experiences and challenges, who could help them in overcoming negative thought patterns (such as hopelessness or anger) and develop more beneficial coping strategies. Some described how quality of life and mood improvements occurred by taking steps to acknowledge and address their difficulties with their link worker, and then making the effort to engage in more social and wellbeing activities. Emotional support was identified by many participants as the most substantial contributor to their improved quality of life.

"I am becoming more positive, optimistic, and calmer. I am stronger and capable of managing my pain and mental health issues... I do not see myself as an injured worker who is stuck, depressed, heavily medicated, and lost. I see myself with an injury that limits my mobility but not my myself."

"I was severely injured and spent 18 months in hospital and home. I felt very down and was sceptical when I first met with [my link worker]. [The program] helped me understand that the more my isolation and depression increased, my pain and hopelessness also increased. The program is a little like natural pain relief for your mind and body. I have developed a positive structure to my week, so much so that I now look forward to what each new week brings... My quality of life is a lot better, positive, happier... I am not negative anymore so my relationships have been working out."

4.4 Health service utilisation

Prior to their workplace injury, 9% of participants reported an existing disability and 18% reported having had received psychological treatment. Forty-eight people (28%) reported having spent time in hospital in the previous three months at baseline (*M* = 7.84 days, *SD* = 17.04) whereas only 19 (11%) reported hospitalisations at follow-up (*M* = 6.60 days, *SD* = 9.52); this was a significant reduction (Z = -3.94, $p < 0.001$). The frequency of contact with health services also reduced significantly (Z = -6.69, $p < 0.001$), with the proportion of participants indicating frequencies of weekly or more dropping from 56% at baseline to 29% at follow-up. A number of interviewed participants spoke of physical and mental health improvements that were either attributable to the social prescribing program itself, or to the more suitable health service utilisation that their link worker helped organise.

"When the link worker first met me, I was unemployed, suffering every day from excruciating physical pain, isolated, poor sleep, and financially stressed. I am [now] connected to the right health services and have the right equipment [assistive technology for mobility] which has improved my life and health."

"Since being on the [social prescribing] program, I have not been to hospital and I have not had any anxiety attacks."

4.5 Program participation and satisfaction

Over 50% of participants received referrals to more than five services, with at least one social or other support link successfully made for all participants and half attending at least one Plus Social group activity (n = 178). Most participants described positive experiences with activities, including reduced social isolation, better ability to communicate and relate with others, increased confidence, and a stronger sense of belonging. There were some problems in program access, largely due to a lack of transport. Participants spoke highly of the support and expertise of the link workers, with many designating this as the most valuable component of the program:

"Link worker was genuine, compassionate, empathetic, kind, nurturing and provided heartfelt care... She had the systems knowledge around how things work and was able to help me with things like what I was entitled to through Centrelink, financial aid, and accessing my super. I was in good hands."

"Before I met my link worker I couldn't face each day. I didn't know how to carry on with day to day life because I was in so much pain and had severe depression and anxiety. I thought that my injury was a death sentence... When I would talk about my pain, whether physical or mental, my link worker would always remind me that things might not be going my way now, but that maybe tomorrow or in a week or a month they would be. My link worker helped me to change my mindset."

Program satisfaction ratings indicated that the majority of participants found the social prescribing approach to be effective in meeting their needs, encouraging meaningful activity, and improving general wellness and social connectedness (see Table 5). The most valued aspects of the program were: the link workers' high quality and effective support; participation in social and therapeutic activities that helped to reduce loneliness and increase positivity; and development of stronger understanding and skills in managing pain, distress, and psychosocial difficulties. Participants noted improvements to confidence, mental stability, social connections, ability to cope with pain and stress, quality of sleep, engaging in the community, and the appropriateness of services they were receiving. Areas that were described as not improving generally related to medical conditions and physical abilities. Where ability to work did not improve, reasons given were mostly related to pain, health and age issues, or workplace issues and/or legal processes.

In comparing the service received to the participant's expectations, 69% indicated that it was better or far better than they were expecting (see Table 5). Suggestions for improvement mostly focused on extending the program scope (including length of time, range of activities, accessibility [including transport], and frequency of link worker contact) and facilitating program access sooner after the workplace injury to limit deteriorations in wellbeing. Positive comments included *"I was amazed at how many great programs were available", "found it more nurturing than expected", "I have learned to trust people", and "I felt really supported".*

"One of the biggest issues for me was that I felt completely and utterly alone. Having the program and support gave me reassurance that there is an organisation and a group of people who are solely focussed on reconnecting people... Having a person who comes to you and makes the time to meet you in your space and environment; who spends the time to get to know you as a person including your situation, history, current circumstances and issues that come up; someone on your side who has the skills, training and understanding of the system, and has ability to give me the power to take steps, make decisions, or reach out to different organisations for assistance was very empowering."

5 Discussion

The social prescribing program was shown to be successful in its aims of promoting social and economic participation, increasing psychological wellbeing, and decreasing health service use for injured workers with psychosocial needs. The model of care was well-received, with the most highly-regarded aspect being the quality of the link worker's support in listening, understanding, and collaborating, to address practical and emotional needs. Participants spoke of benefits including greater empowerment and coping skills, as well as reduced loneliness and

Table 5. Program Satisfaction Indicator Ratings

Program satisfaction indicator	% per response category					Median response
	Not at all	Slightly	Somewhat	Moderately	Extremely	
Helpfulness of link worker	0.6	–	10.2	26.5	62.7	Extremely
Met individual needs	2.4	5.4	19.8	32.9	39.5	Moderately
Meaningful activities	2.4	2.4	18	30.5	46.7	Moderately
Support to actively direct goals	2.4	4.2	14.5	31.3	47.6	Moderately
Improved general wellness	4.2	5.4	24	29.3	37.1	Moderately
Improved social connectedness	5.4	6.6	26.3	32.3	29.3	Moderately
More confidence in work/community	13.8	7.8	31.7	23.4	23.4	Somewhat

greater ability to trust others, indicating that the approach is suited to addressing the intra- and inter-personal effects of having a work-acquired injury that limits or terminates one's capacity to work. In addition to enabling psychosocial adjustment to work capacity limitations, increases in work capacity measured over the program period demonstrate its suitability as a return-to-work intervention.

The program structure, delivery, and results were consistent with other social prescribing programs, where outcomes were associated with a range of psychosocial functioning improvements, including increasing health and wellbeing, self-management and reducing loneliness[22,25–34].

The intervention was unique in:

(1) Targeting injured workers;

(2) Aiming to increase rehabilitation treatment effectiveness, reduce time off work, and increase participant confidence in returning to work;

(3) Exploring participant experiences of grief and loss of dignity in becoming an unemployed, injured worker;

(4) Providing therapeutic and peer support opportunities to address these specific experiences.

Participants lost to follow up were more likely to not speak English at home, not be born in Australia, and were more likely to have been injured over two years prior to program commencement. This suggests that more consideration may be needed to better accommodate diverse population groups, and that a social prescribing approach may be better targeted to people who have more recent work injuries. Further information on participant structural difficulties, such as insufficient realisation of physical and social needs due to income, disability or other issues, may also provide greater insight into program outcomes and development opportunities. Comparing participant activity levels and frequency/nature of link worker engagement would produce further evidence of participant suitability and program efficacy. Continued and enhanced systematic data collection is required for longitudinal assessment of program impact, including the sustainability of benefits over time. Future evaluations could aim to identify the characteristics of injured workers who benefit most from the social prescribing model, as well as capture the experiences of link workers and others involved in providing rehabilitative support, to enable better understanding of the suitability and effectiveness of the model of care.

Expediting return-to-work is dependent on worker motivation and empowerment, the nature and severity of injury, and workplace characteristics including the employer's ability to adapt the tasks and environment to the needs of the injured worker, as well as protect against any further harm. Adapting the primarily health-focused model to meet the needs of injured workers requires further consideration of these processes and of the sufficiency and impact of occupational rehabilitation systems, as well as any limitations, delays, and stress that may be generated by these.

6 Strengths and limitations

This study has a number of features that address some of the shortcomings of other social prescribing program evaluations, namely in having pre-/post-intervention quantitative data and a large sample size (enabling meaningful analysis of changes over the program period), and in using validated tools for psychosocial assessment. The use of multiple data sources, including quantitative participant information from program and insurance regulator sources and qualitative accounts from link workers and program participants, assisted in comparing, verifying, and interpreting findings, including identifying subjective benefits and experiences of the program.

Limitations this study shares with other social prescribing evaluations include not having a control or other intervention group for comparison, and not having adequate post-intervention measures to evaluate maintenance of program benefits over time. Data collection by link workers may have contributed researcher or respondent biases such as social desirability. Data was not provided on the nature or severity of the participants' workplace injury and any ensuing disability: this information would have enabled analysis of differences in program efficacy and suitability by injury characteristics, including level of health service need. Future outcome evaluations could be strengthened by controlling possible confounders such as condition, treatment, and time related health improvements or deterioration.

7 Conclusion

The social prescribing model of care, utilising holistic support and linking to services and social activities, was shown to be effective in improving overall wellbeing for injured workers with psychosocial difficulties. Benefits included increased social connectedness, confidence and ability to return to work, and reduced pain, distress, and health service needs. Interventions that promote workplace adaptation, and resilience in engaging with rehabilitation and restitution processes, may be constructive ways to further increase the efficacy and satisfaction of a social prescribing approach in reducing the psychosocial and structural difficulties experienced by injured workers.

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9 Conflict of interest

Christina Aggar, Theresa Caruana and Tamsin Thomas declare that they have no conflict of interest. Author J. R. Baker is the CEO of PCCS.

10 Ethical approval

Ethics approval was granted by Southern Cross University Human Research Ethics Committee (ECN-17-151). All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2000 (5). Informed consent was obtained from all patients for being included in the study.

11 Informed consent

Informed consent was obtained from all individual participants included in the study.

References

[1] Bickerdike L, Booth A, Wilson PM, *et al*. Social prescribing: Less rhetoric and more reality. A systematic review of the evidence. British Medical Journal Open, 2017, **7**: e013384. https://doi.org/10.1136/bmjopen-2016-013384

[2] Chatterjee HJ, Camic PM, Lockyer B, *et al*. Non-clinical community interventions: A systematised review of social prescribing schemes. Arts & Health, 2018, **10**(2): 97-123. https://doi.org/10.1080/17533015.2017.1334002

[3] Kilgarriff-Foster A and O'Cathain A. Exploring the components and impact of social prescribing. Journal of Public Mental Health, 2015, **14**(3): 127-134. https://doi.org/10.1108/JPMH-06-2014-0027

[4] Mossabir R, Morris R, Kennedy A, *et al*. A scoping review to understand the effectiveness of linking schemes from healthcare providers to community resources to improve the health and well-being of people with long-term conditions. Health & Social Care in the Community, 2015, **23**(5): 467-484. https://doi.org/10.1111/hsc.12176

[5] Safe Work Australia. Australian Workers' Compensation Statistics 2016-17, 2018. https://www.safeworkaustralia.gov.au/system/files/documents/1904/australian-workers-compensation-statistics-2016-17_1.pdf

[6] Collie A, Di Donato M and Iles R. Work disability in Australia: An overview of prevalence, expenditure, support systems and services. Journal of Occupational Rehabilitation, 2019, **29**(3): 526-539. https://doi.org/10.1007/s10926-018-9816-4

[7] Grant GM, O'Donnell ML, Spittal MJ, *et al*. Relationship between stressfulness of claiming for injury compensation and long-term recovery: A prospective cohort study. JAMA Psychiatry, 2014, **71**(4): 446-453. https://doi.org/10.1001/jamapsychiatry.2013.4023

[8] Kilgour E, Kosny A, McKenzie D, *et al*. Interactions between injured workers and insurers in workers compensation systems: A systematic review of qualitative research literature. Journal of Occupational Rehabilitation, 2015, **25**(1): 160-181. https://doi.org/10.1007/s10926-014-9513-x

[9] Dean AM, Matthewson M, Buultjens M, *et al*. Scoping review of claimants experiences within Australian workers compensation systems. Australian Health Review, 2019, **43**(4): 457-465. https://doi.org/10.1071/AH17244

[10] White C, Green RA, Ferguson S, *et al*. The influence of social support and social integration factors on return to work outcomes for individuals with work-related injuries: A systematic review. Journal of Occupational Rehabilitation, 2019, **29**: 636-659. https://doi.org/10.1007/s10926-018-09826-x

[11] McLinton S, McLinton SS and Van der Linden M. Psychosocial factors impacting workplace injury rehabilitation: Evaluation of a concise screening tool. Journal of Occupational Rehabilitation, 2018, **28**(1): 121-129. https://doi.org/10.1007/s10926-017-9701-6

[12] Bailey TS, Dollard MF, McLinton SS, *et al*. Psychosocial safety climate, psychosocial and physical factors in the aetiology of musculoskeletal disorder symptoms and workplace injury compensation claims. Work Stress, 2015, **29**(2): 190-211.
https://doi.org/10.1080/02678373.2015.1031855

[13] Bunzli S, Singh N, Mazza D, *et al*. Fear of (re)injury and return to work following compensable injury: Qualitative insights from key stakeholders in Victoria, Australia. BMC Public Health, 2017, **17**(1): 313.
https://doi.org/10.1186/s12889-017-4226-7

[14] Khorshidi HA, Marembo M and Aickelin U. Predictors of return to work for occupational rehabilitation users in work-related injury insurance claims: Insights from mental health. Journal of Occupational Rehabilitation. Advance online publication, 2019, **29**(4): 740-753.
https://doi.org/10.1007/s10926-019-09835-4

[15] Fenner P. Returning to work after an injury. Australian Family Physician, 2013, **42**(4): 182-185.
https://search-informit-com-au.ezproxy.scu.edu.au/documentSummary;dn=253224635413814;res=IELHEA

[16] Heymans MW, De Vet HCW, Knol DL, *et al*. Workers' beliefs and expectations affect return to work over 12 months. Journal of Occupational Rehabilitation, 2006, **16**(4): 685-695.
https://doi.org/10.1007/s10926-006-9058-8

[17] Cole DC, Mondloch MV and Hogg-Johnson S. Listening to injured workers: How recovery expectations predict outcomes - a prospective study. Canadian Medical Association Journal, 2002, **166**(6): 749-754.
https://www-ncbi-nlm-nih-gov.ezproxy.scu.edu.au/pmc/articles/PMC99453/pdf/20020319s00019p749.pdf

[18] Dunstan DA, Covic T and Tyson GA. What leads to the expectation to return to work? Insights from a Theory of Planned Behavior (TPB) model of future work outcomes. Work, 2013, **46**(1): 25-37.
https://doi.org/37.10.3233/WOR-2012-1481

[19] Godges JJ, Anger MA, Zimmerman G, *et al*. Effects of education on return-to-work status for people with fear-avoidance beliefs and acute low back pain. Physical Therapy, 2008, **88**(2): 231-239.
http://ezproxy.scu.edu.au/login?url=https://search-proquest-com.ezproxy.scu.edu.au/docview/223111522?accountid=16926

[20] Sullivan M, Feuerstein M, Gatchel R, *et al*. Integrating psychosocial and behavioral interventions to achieve optimal rehabilitation outcomes. Journal of Occupational Rehabilitation, 2005, **15**(4): 475-489.
https://doi.org/10.1007/s10926-005-8029-9

[21] Legg MJ. What is psychosocial care and how can nurses better provide it to adult oncology patients. Australian Journal of Advanced Nursing, 2011, **28**(3): 61-67.
http://www.ajan.com.au/vol28/28-3_legg.pdf

[22] Langford K, Baeck P and Hampson M. More than medicine: New services for people powered health. London: Nesta Innovation Unit, 2013.
http://www.nesta.org.uk/sites/default/files/more_than_medicine.pdf

[23] Thomson LJ, Camic PM and Chatterjee HJ. Social prescribing: A review of community referral schemes. London: University College London, 2015.
http://create.canterbury.ac.uk/15655/1/Social_Prescribing_Review_2015.pdf

[24] Duggan M, Chislett WK and Calder R. The state of self-care in Australia. Australian Health Policy Collaboration Commissioned Paper no. 02/2017. Melbourne: AHPC, 2017.
https://www.vu.edu.au/sites/default/files/the-state-of-self-care-in-australia.pdf

[25] Bragg R, Wood C and Barton J. Ecominds effects on mental wellbeing: An evaluation for Mind. Stratford/London: Mind, 2013.
http://www.mind.org.uk/media/354166/Ecominds-effects-on-mental-wellbeing-evaluation-report.pdf

[26] Bretherton J and Pleace N. An evaluation of the Broadway Skills Exchange Time Bank. York, UK: Centre for Housing Policy, University of York, 2014.
http://eprints.whiterose.ac.uk/80167/1/Broadway_Time_Bank_Final_Report_1_May_2014.pdf

[27] Crone DM, Sumner RC, Baker CM, *et al*. 'Artlift' arts-on-referral intervention in UK primary care: Updated findings from an ongoing observational study. European Journal of Public Health, 2018, **28**(3): 404-409.
https://doi.org/10.1093/eurpub/cky021

[28] Dayson C and Bashir N. The social and economic impact of the Rotherham Social Prescribing Pilot: Main evaluation report. Rotherham/Sheffield: Voluntary Action Rotherham and Centre for Regional Economic and Social Research, 2014.
https://www4.shu.ac.uk/research/cresr/sites/shu.ac.uk/files/social-economic-impact-rotherham.pdf

[29] Dayson C, Bashir N, Bennet E and Sanderson E. The Rotherham social prescribing service for people with long-term health conditions: Summary report. Rotherham/Sheffield: Voluntary Action Rotherham and Centre for Regional Economic and Social Research, 2016.
http://www4.shu.ac.uk/research/cresr/sites/shu.ac.uk/files/rotherham-social-prescribing-annualeval-report-2016_7.pdf

[30] Innovation Unit. Wigan Community Link Worker service evaluation, 2016.
https://www.innovationunit.org/wp-content/uploads/2017/05/Wigan-CLW-service-evaluation.pdf

[31] Kimberlee R, Ward R, Jones M and Powell J. Measuring the economic impact of Wellspring Health Living Centres Social Prescribing Wellbeing Programme for low level mental health issues encountered by GP services. Bristol: Wellspring, 2014.
http://www.wellspringhlc.org.uk/reports/POV_Final_Report_March_2014.pdf

[32] Laing K, Steer M, Lawson S, *et al*. How Ways to Wellness social prescribing is improving the health and wellbeing of people with long term conditions: Evaluation report to the Cabinet Office. University of Newcastle, UK: Institute of Health & Society, 2017.
https://golab.bsg.ox.ac.uk/documents/105/Laing_et_al._2017a.pdf

[33] Margrove KL, Heydinrych K and Secker J. Waiting list-controlled evaluation of a participatory arts course for people experiencing mental health problems. Perspectives in Public Health, 2013, **133**(1): 28-35. https://doi.org/10.1177/1757913912461587

[34] Moffatt S, Steer M, Lawson S, *et al*. Link worker social prescribing to improve health and well-being for people with long-term conditions: Qualitative study of service user perceptions. British Medical Journal Open, 2017, **7**: e015203. http://bmjopen.bmj.com/content/bmjopen/7/7/e015203.full.pdf

[35] Slade M, Thornicroft G, Loftus S, *et al*. CAN: Camberwell Assessment of Need. London: Gaskell, 1999.

[36] Van Reenen M and Janssen B. EQ-5D-5L User Guide, 2015. https://euroqol.org/wp-content/uploads/2016/09/EQ-5D-5L_UserGuide_2015.pdf

[37] Kessler RC, Andrews G, Colpe LJ, *et al*. Short screening scales to monitor population prevalences and trends in non-specific psychological distress. Psychological Medicine, 2002, **32**(6): 959-976. https://doi.org/10.1017/S0033291702006074

[38] Hughes ME, Waite LJ, Hawkley LC, *et al*. A short scale for measuring loneliness in large surveys: Results from two population-based studies. Research on Aging, 2004, **26**(6): 655-672. https://doi.org/10.1177/0164027504268574

[39] Hughes ME, Waite LJ, Hawkley LC, *et al*. A short scale for measuring loneliness in large surveys: Results from two population-based studies. Research on Aging, 2004, **26**(6): 655-672. https://doi.org/10.1177/0164027504268574

[40] Braun V and Clarke V. Using thematic analysis in psychology. Qualitative Research in Psychology, 2006, **3**(2): 77-101. https://doi.org/doi:10.1191/1478088706qp063oa

[41] World Health Organisation. WHOQOL-BREF: Introduction, administration, scoring and generic version of the Assessment, 1996. https://www.who.int/mental_health/media/en/76.pdf?ua=1