

## PEER REVIEW HISTORY

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### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	The Effectiveness and Active Ingredients of Social Prescribing Interventions Targeting Mental Health: A Systematic Review
<b>AUTHORS</b>	Cooper, Matthew; Avery, Leah; Scott, Jason; Ashley, Kirsten; Jordan, Cara; Errington, Linda; Flynn, Darren

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Fixsen, Alison University of Westminster, Herbal and SE Asian Medicine
<b>REVIEW RETURNED</b>	02-Feb-2022

<b>GENERAL COMMENTS</b>	<p>This is an interesting and well written paper. I am not an experienced systematic reviewer but I commend the authors for what I see as a thorough description of their methods and data analysis.</p> <p>The abstract is well presented</p> <p>The introduction is rather brief. This may be customary for a systematic review but I would have liked a more informed and sophisticated overview of the background. In particular the section on mental health is sufficiently brief to seem cursory.</p> <p>The methods section by contrast is detailed and appears to be comprehensive. I cannot comment on the calculations but the methods adhere to those expected of a rigorous review, including the input of team members with different skills.</p> <p>The results section is also well presented and generally easy to follow.</p> <p>The discussion raises some interesting and potentially important points, both in regard to the quality of many studies and their lack of transferability and potential weaknesses of the social prescribing approach itself. One thing I did not see discussed was that of long term changes in mental health resulting from social prescribing. This is not a problem with the review as most studies fail to capture this data, however it is something that seem a critical point when evaluating the impact of SP interventions. Most people are offered only limited sessions with a link worker so what happens after that is important.</p> <p>I also noted some proofing and syntax errors so I suggest running through the paper carefully before publishing.</p> <p>Good work authors, for this very good paper.</p>
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<b>REVIEWER</b>	Kellezi, Blerina Nottingham Trent University, Psychology
<b>REVIEW RETURNED</b>	10-Mar-2022

<b>GENERAL COMMENTS</b>	This is a very timely and important review. The strength of the review is that it aims to go beyond establishing the effectiveness of
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	<p>existing evidence through also identifying active ingredients that enable this effectiveness. Despite this strength there are a number of areas that require improvement.</p> <p>The major limitations is that the searches for this review are now over two years old. Given the spread of the Social Prescribing in the last 5 years the review is likely to miss key papers in an area that does require evidence. There are several studies published in the last two years that would contribute to this review.</p> <p>The analysis of person-centeredness and Behaviour Change techniques is adequate but the authors do not engage in depth with those models of Social Prescribing that focus on referral to groups or other services. There might be a good reason for this, but this is not clear in the current manuscript.</p> <p>There are some minor inaccuracies in the manuscript. E.g. Pg 11, line 15 refers to included studies 2,7,9 and 10. These do not correspond with the reference list. Pg 17, lines 16-20 report only two studies who reported on service utilisation. Study 29 also did this and the information is missing from the text and table 2. I would suggest you check the outcomes of all the 12 papers for accuracy. In page 19 you refer to blind assessors. There needs to be a clarification of how this was defined for each type of study included in the review.</p>
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### VERSION 1 – AUTHOR RESPONSE

<b>Reviewer: 1</b>	
This is an interesting and well written paper. I am not an experienced systematic reviewer but I commend the authors for what I see as a thorough description of their methods and data analysis.	We thank the reviewer for this positive comment
The abstract is well presented	We thank the reviewer for this positive comment
The introduction is rather brief. This may be customary for a systematic review but I would have liked a more informed and sophisticated overview of the background. In particular the section on mental health is sufficiently brief to seem cursory	<p>Thank you for this comment, we followed the guidelines for authors (3 paragraphs for the introduction), although we agree that more information is needed on the critically important issue of mental health, and we have included additional information in the background of the revised manuscript (p6) on the impact of mental health on individuals, their families and society:</p> <p><i>‘Approximately one in six adults in the UK are living with mental health conditions(10) and social prescribing has the potential to improve outcomes for this population. Mental health has a devastating impact on individuals, their families and society, with depression and anxiety disorders affecting 16% of</i></p>

	<i>the UK population at any one time.(10) A conservative estimate of the total costs of mental health in the UK in 2019 was £117.9 billion (approximately 5% of GDP), with 56% and 27% for people aged 15-49 and 50-69 respectively.(11)'</i>
The methods section by contrast is detailed and appears to be comprehensive. I cannot comment on the calculations but the methods adhere to those expected of a rigorous review, including the input of team members with different skills	We thank the reviewer for this positive comment
The results section is also well presented and generally easy to follow	We thank the reviewer for this positive comment
The discussion raises some interesting and potentially important points, both in regard to the quality of many studies and their lack of transferability and potential weaknesses of the social prescribing approach itself. One thing I did not see discussed was that of long term changes in mental health resulting from social prescribing. This is not a problem with the review as most studies fail to capture this data, however it is something that seem a critical point when evaluating the impact of SP interventions. Most people are offered only limited sessions with a link worker so what happens after that is important	We thank the reviewer for pointing this out. We agree, and in the discussion section of the revised manuscript, we make reference to the lack of long-term follow-up studies in the review, and the importance of addressing this in relation to impact on mental health and well-being outcomes outwith social prescribing interventions (i.e. their day to day lives). (p29)  <i>' In addition, this review has further highlighted the lack of long-term follow up within social prescribing studies. Future research would benefit from evaluations to establish the long-term impact of social prescribing on service users' mental health, including specific skills targeted by social prescribing interventions to improve fidelity assessment.'</i>
I also noted some proofing and syntax errors so I suggest running through the paper carefully before publishing. Good work authors, for this very good paper	We thank the reviewer for this positive comment. We have reviewed the revised manuscript to amend any proofing and syntax errors.
<b>Reviewer: 2</b>	
This is a very timely and important review. The strength of the review is that it aims to go beyond establishing the effectiveness of existing evidence through also identifying active ingredients that enable this effectiveness. Despite this strength there are a number of areas that require improvement.	We thank the reviewer for this positive comment
The major limitations is that the searches for this review are now over two years old. Given the spread of the Social Prescribing in the last 5 years the review is likely to miss key papers in an area that does require evidence. There are several studies published in the last two years that would contribute to this review	In order to update the review, we have re-ran the literature search to cover an additional two years (from up to February 2020 in the original submission to up to March 2022 in the revised manuscript) (this search identified an additional 6,735 records and 5 studies)

<p>The analysis of person-centeredness and Behaviour Change techniques is adequate, but the authors do not engage in depth with those models of Social Prescribing that focus on referral to groups or other services. There might be a good reason for this, but this is not clear in the current manuscript</p>	<p>This is an interesting point that we would have liked to have explored further in the manuscript. Unfortunately, given the lack of detail provided by the studies of social prescribing interventions in the review, and that 16 out of 17 studies reported statistically significant improvements in outcomes, any sub-group analyses would be unlikely to be meaningful. We originally planned to conduct promise calculations (summing promising interventions [reported positive results] that includes a specific active ingredient of interest, for example different models of social prescribing, and dividing this by the number of non-promising interventions [reporting negative results or no change] featuring the same active ingredient). However, we agree that exploring different referral models in more depth and their impact on outcomes is warranted, and we refer to this in the discussion in the revised version of the manuscript (pp27-28) along with a plea for improved quality of reporting on social prescribing interventions in the limitations section (p28).</p>
<p>There are some minor inaccuracies in the manuscript. E.g. Pg 11, line 15 refers to included studies 2,7,9 and 10. These do not correspond with the reference list. Pg 17, lines 16-20 report only two studies who reported on service utilisation. Study 29 also did this and the information is missing from the text and table 2. I would suggest you check the outcomes of all the 12 papers for accuracy. In page 19 you refer to blind assessors. There needs to be a clarification of how this was defined for each type of study included in the review</p>	<p>We thank the reviewer for pointing out these inconsistencies. They have all been amended in the revised manuscript. Data on service utilisation outcomes reported has been updated (and includes the study referred to in the reviewer comment), and we apologise for the confusion that arose due to a reference inaccuracy in the original submission. All included studies have been checked for data on service utilisation.  The reference to blind assessors was incorrectly phrased and we have removed this from the revised manuscript. The actual checklist refers to '<i>Were the people assessing the outcomes blinded to the participants' exposures/interventions?</i>' This has been explained in the table footnote in supplementary material 3.</p>
<p>Additional Changes:</p>	
<p>We have also included the specific names for social prescribing interventions in the revised manuscript. Where appropriate, we have grouped data from studies reporting on the same intervention (intervention development processes, person centredness, treatment fidelity and BCTs).</p>	
<p>We have reflected on our assessment of treatment fidelity and have updated two treatment fidelity sections in the revised manuscript '<i>Monitoring and improving receipt of interventions and enactment of intervention skills</i>' (p23)</p> <p><b><i>Monitoring and improving receipt of interventions and enactment of intervention skills</i></b> All 13 interventions reported information regarding service users' comprehension of the intervention. Due to the nature of social prescribing interventions being tailored to the individual and their specific needs, the specific skills that would be targeted by the interventions is difficult to</p>	

*assess. Similarly, and further due to the absence of long- term follow-up assessments after the intervention period, this prohibited a robust assessment of enactment of intervention skills after the intervention activity had ended.*