

Green Care as Psychosocial Intervention for Depressive Symptoms: What might be the Active Ingredients?

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What is Green Care?

An umbrella term for psychosocial interventions that integrate biotic and abiotic elements of nature to promote an individual's health and well-being. Some examples include:



Horticulture Therapy



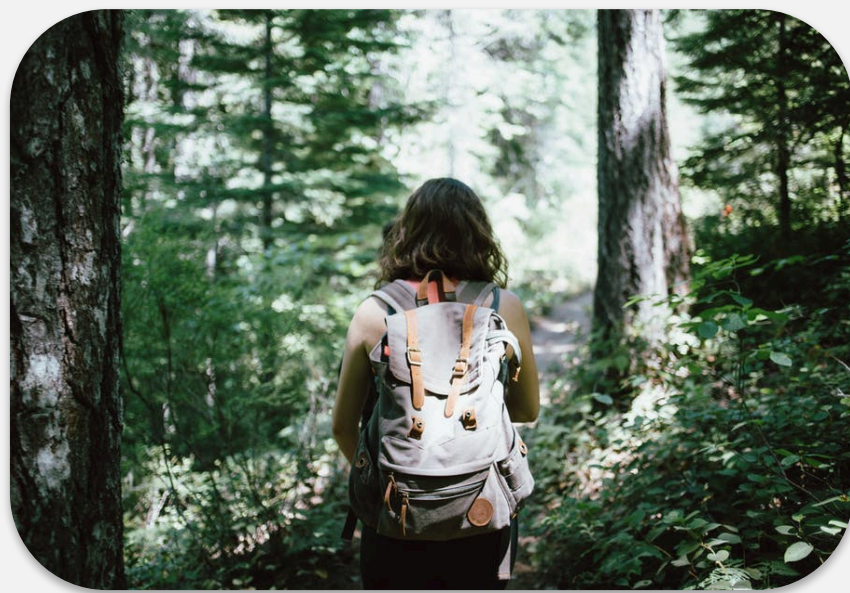
Animal-assisted Intervention



Care Farming



Green Exercise



Wilderness Therapy

Advantages of Green Care:

- Capacity for cultural diversity and sensitivity
- Potential for low-cost health promotion and disease prevention interventions in difficult-to-target and vulnerable populations
- Key elements identified by participants include:
 - Positive and supportive atmosphere
 - Social engagement
 - Increased physical activities
 - Increased feelings of skill and competence
- Alternative formats can increase access and decrease cost

Depression and Depressive Symptoms

- Major Depression
 - Directly affects approximately 350 million people
 - Leading cause of disability worldwide
 - Under-diagnosed, under-treated, and recurs in at least 50% of patients who receive treatment
- Depressive Symptoms
 - Lifetime prevalence of 24% (higher than Depression)
 - Major risk factor for development of Major Depression
- Many people delay seeking treatment for symptoms or encounter major barriers to accessing treatment

Objectives:

- Expand the consideration of green care as an evidence based therapy for depressive symptoms
- Provide insight into possible active ingredients (social support, behavioral activation, and self-efficacy) leading to improvement of depressive symptoms

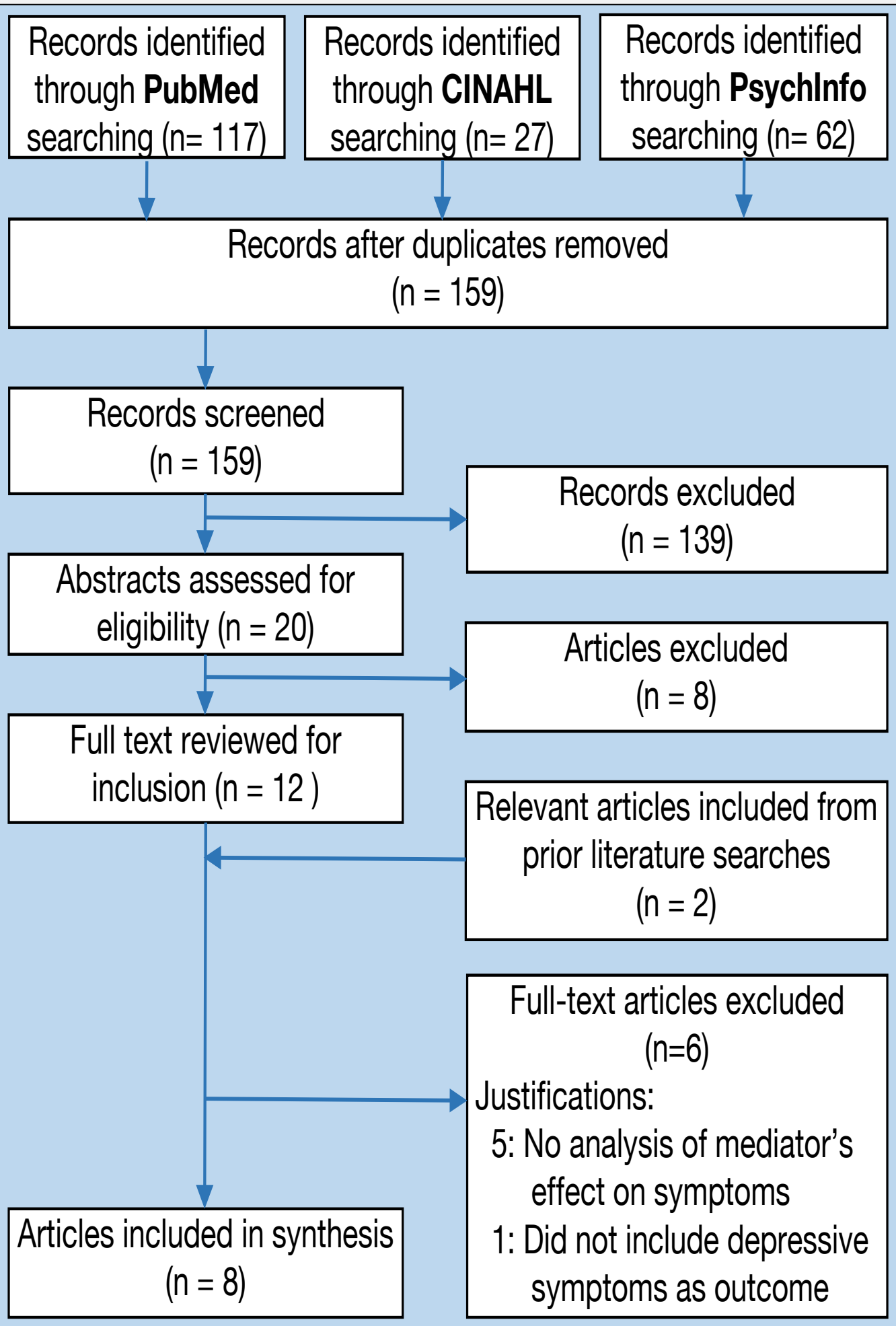
Methods:

- Followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines
- Sourced English-language articles from PubMed, CINAHL and PsycINFO through July 2016
- Inclusion Criteria for Studies
 - Depressive symptoms as outcome
 - Analyzed one of three mediators of interest (social support, behavioral activation, self-efficacy)
 - Included any psychosocial intervention for adults
 - Too few studies of key elements of green care to focus
- Each article was extracted independently
- Data combined into a matrix and analyzed for thematic content

Results:

Key Element	Primary Author	Location	Intervention	Sample (n)	Measure of Depressive Symptoms	Did key element mediate improved depressive symptoms?
Behavioral Activation	Losada (2011)	Spain	Cognitive Behavioral Therapy (CBT)	167	Center for Epidemiological Studies Depression Scale (CES-D)	Yes; frequency of leisure activities mediated depressive symptoms.
	Ryba (2014)	U.S.A.	Behavioral Activation Therapy	23	Beck Depression Inventory -II (BDI-II)	Yes and no; proportion of completed activities mediated improved depressive symptoms but the total number of completed activities did not.
Social Support	Dour (2014)	U.S.A.	CBT, medication management, or both	1004	Brief Symptom Inventory (BSI), Patient Health Questionnaire (PHQ-9)	Yes; perceived social support mediated depressive symptoms at multiple time points.
	Roth (2015)	U.S.A.	Individual, family, and group therapy	312	Geriatric Depression Scale (GDS)	Yes; satisfaction with social support mediated treatment effects directly and indirectly via improvement in stressfulness appraisals.
Self-efficacy	Backenstrass (2006)	Germany	CBT and medication management	51	Hamilton Rating Scale of Depression (HRSD), Beck Depressive Inventory (BDI)	No; improvement to symptoms not mediated by general self-efficacy or sub-scales of internality, powerful others' control, chance control, and own competence.
	Kavanagh (1989)	Australia	CBT	42	BDI	Yes; cognition self-efficacy and stress control self-efficacy mediated immediate improvement to depressive symptoms.
	Oman (2015)	U.S.A.	Mantram Repetition Therapy	132	BSI	Yes; management of PTSD symptom self-efficacy partially mediated effects on depressive symptoms.
	White (2009)	England	Physical activity	47	BDI-II	Yes; physical self efficacy mediated treatment effects.

PRISMA Diagram:



Conclusions:

- Green care interventions...
- Can be adapted to individual's symptoms, financial means, access to care, and other characteristics
 - Offer the opportunity to target all three key elements
 - Could be led by nurses at a variety of training levels as well as community health workers

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