An analysis of inclusion gaps in sustainable development themes: Findings from a

review of recent social work literature

Introduction

Humans have negatively altered global ecosystems more rapidly and more dramatically over the last 50 years than in any comparable time period (World Wildlife Fund (WWF), 2014, 2016). Humans cannot survive without a healthy planet. Earth's ecosystems and the services they provide allow for human life through the provision of clean air and water, food, medicines, disease management, building materials, fuel, climate regulation, storm buffering, security and shelter, spiritual fulfillment, and more. Yet, humanity's current natural resource consumption and carbon emissions combined exceed Earth's (land and sea) production and carbon absorption capacity by 50% (WWF, 2014), meaning Earth will be unable to sustain the burgeoning human population without intervention. These unsustainable demands have led to substantial gains in wellbeing and economic development for some, but at the cost of health, wellbeing, and security for most humans, particularly already marginalised and oppressed populations, making this a pressing social work concern. However, many social work professionals have not been exposed to the prevalence and severity of these environmental issues and the direct negative impacts on their clients, policies, and interventions.

Scientists have long known that excessively taxing Earth's natural resources and processes could lead to devastating consequences, including abrupt and irreparable environmental change (Meadows et al., 1972). In an effort to define parameters within which humans can develop sustainable societies, contemporary scientists have suggested nine planetary boundaries, or guidelines, for utilising each Earth system that minimises the risk of causing irreversible changes (Rockstrom et al., 2009; Steffen et al., 2015). These systems include climate change, biodiversity loss, nitrogen and phosphorus use, freshwater use, land use change, ocean acidification, stratospheric ozone depletion, atmospheric aerosol pollution, and chemical pollution; three boundaries that we have already violated are climate change, biodiversity loss, and nitrogen cycle disruption (Rockstrom et al., 2009; Steffen et al., 2015). Rather than strict tipping points that would flip a physical system into an alternate state, these boundaries are based on an evolving understanding of Earth's functioning and resilience; as such, they exist on a risk continuum where the farther these boundaries are transgressed, the higher the risk humans run of destabilising Earth's processes and eroding both human and Earth's resilience (Steffen et al., 2015). While Earth could rebound from such destabilisation, the resulting changes to Earth's environment would be so drastically different that human life likely could not (Steffen et al., 2015).

Environmental changes are so pervasive and severe that scientists have suggested humans are already causing the Earth to exit the current geological epoch, the Holocene, which has existed for over 10,000 years and made the development of human civilisations possible, into the Anthropocene, a term under review by the International Commission on Stratigraphy to become a formal geological time period (Lewis and Maslin, 2015; Steffen et al., 2007; Steffen et al., 2011). The Anthropocene is defined as a period when human activity has overtaken vast parts of Earth's natural cycles, and in ways that threaten humanity's future (Lewis and Maslin, 2015).

The period 1800-1850 marks industrialisation's and the Anthropocene epoch's approximate onset, as industrial societies rapidly expanded their fossil fuel use (Steffen et al., 2007). Fossil fuels provided humans with abundant energy for developing new technologies (e.g., steam engines), eliminating previous energy supply constraints and altering and intensifying resource use for medicine and agriculture. Consequently, between 1800 and 2000, energy use grew approximately 40-fold, the global economy approximately 50-fold, and human population more than six-fold (Steffen et al., 2007). Since World War II, human population has continued to grow almost exponentially, doubling in 50 years, reaching more than 6 billion at the end of the 20th century, and increasing to 7.6 billion as of this writing, with the last billion added in just the past 12 years (United Nations, World

Population Prospects, 2017). Human activity has also rapidly increased, with the number of motor vehicles jumping from 40 million in 1945 to 700 million in 1996 and petroleum consumption growing 3.5 times since 1960 (Steffen et al., 2007). This alarming growth in population and consumption was occurring concurrently with early scientific recognition and documentation of the extent that human activities were affecting Earth's functioning (Steffen et al., 2007; Steffen et al., 2011).

Impacts of climate change, including rising temperatures, shifting seasons, sea-level rise, and increasing droughts and floods, threaten people's abilities to meet basic needs (Raworth, 2012). Already, 1,000 children die daily from climate change-related starvation and disease (Salomon, 2016). Furthermore, rising carbon dioxide levels contribute to the acceleration of environmental change and weather anomalies (Raworth, 2012). Experiencing extreme weather events not only poses serious physical threats, but can also have severe psychological consequences by increasing individuals' overall stress, making increases in substance abuse, anxiety, depression, and suicide more likely (Clayton et al., 2014). Severe disasters like floods and storms can also have damaging effects on individuals, families, and communities by making people susceptible to post-traumatic stress disorder, significantly affecting children's learning and development, and even increasing physical aggression within the home (Clayton et al., 2014).

Excessive human consumption has depleted biodiversity levels below a safe threshold (Newbold et al., 2016), violating another planetary boundary and causing the 6th mass extinction (Ceballos et al., 2015). Biodiversity loss has become so severe – occurring at a rate at least 114 times what is natural (Ceballos et al., 2015) – that the current extinction rate is comparable to the last global mass-extinction event, commonly remembered as the dinosaurs' extinction (Sodhi and Ehrlich, 2010). Specifically, between 1970 and 2010, the number of individual animals decreased by 52% (WWF, 2014). During the same time period, freshwater species declined 76%, followed by marine and terrestrial species each declining at 39% (WWF, 2014). The current loss rate is unsustainable, and depleting ecosystem resilience threatens human security and creates deleterious economic repercussions (Rockstrom et al., 2009). For example, 15% of animal protein in human diets comes from marine ecosystems and fisheries support 660 million jobs globally; without abating threats to oceans, predicted economic losses are $428 billion by 2050 (WWF, 2014). Another ecosystem service humans need for survival is bee pollination. Bees are the most economically important pollinator in the world, as the value of U.S. crops pollinated by bees in 2009 was estimated at $15.2 billion (Calderone, 2012). Globally, bees pollinate 71 of the 100 crops that provide 90% of the world's food (UNEP, 2010).

In 2003, Mascia et al., put out a call to action to all social sciences to collaborate with natural sciences in conservation initiatives, for Earth and humanity's preservation. As a practice-based profession with adept skills in advocating for human health and well-being and organising and empowering communities, no social science profession is better poised to help protect a future for humanity than social work.

Methods

We performed a comprehensive review of recent social work literature (published 2010-2015) to uncover existing gaps in sustainable development themes relevant for social work practice. The review was completed according to a fixed and systematic plan established *a priori* and based on the Campbell Collaboration Resource Center methodology and in consultation with a university research librarian. Databases, explored one-by-one, were: Social Services Abstracts, PsycINFO, Social Sciences Citation Index (Web of Science), Sociological Abstracts, Academic Search Complete, ProQuest Central, EBSCOhost, Dissertations and Theses, and Google Scholar. Peer-reviewed articles (including editorials), social work reports, white papers, and dissertations and theses about the theories and practice of sustainable development-related work in social work practice and research in English were examined. Keywords used were social work research, social work, sustainable development, natural environment, environmental sustainability, green

social work, environmental social work, conservation social work and indigenous social work.

The search terms were grouped into 10 categories: social work research AND sustainable development; social work research AND natural environment; social work research AND environmental sustainability; social work AND sustainable development; social work AND natural environment; social work AND environmental sustainability; green social work; environmental social work; conservation social work; and indigenous social work AND sustainable development. For each search yield, titles and highlighted search terms were first read to ascertain possible relevance. For pertinent titles and search terms and those that were published in a social work or social welfare journal, abstracts were read for appropriateness to our search. Most of the 1690 articles yielded were found to be irrelevant after abstract review; for example, "sustainable development" often meant sustainable development of an organisation (e.g., economically, human resources, ethically). Our criteria were that works needed to a) integrate human needs for the natural environment or needs for the natural environment's protection into social work research, or b) recognise the natural environment's importance to human health and development. Works regarding nature's therapeutic benefits and/or of animals were not included as those were not germane to our concerns. However, if for example, a community organic garden

effort was conducted or evaluated by a social work or social welfare practitioner/researcher and found to also have mental health benefits to the community, those works were included. This same process was utilized for each separate database, and relevant articles were recorded in a research notebook by the first author and later reviewed by the second author. The first and second author conducted the review independently. To address inter-rater reliability, the second author's findings were compared to the first author's, which resulted in the inclusion of an additional 11 papers; the first and second authors reached aggregate consensus.

The general database search yielded 60 relevant publications. We further investigated the references cited in the original 60 papers for additional citations not covered in the database search. We elected to include this step out of concern that refereed journals requiring keyword selection from a pre-existing keyword database may not yet have keywords congruent with environmental social work, thus hindering indexing which would have influenced the search criteria's yield. This method produced an additional 11 relevant publications that were not included in the original search, yet highly relevant to the literature review. These 11 publications were included in the screened-in publications. After completing all steps of the review, 71 papers were included in the analysis. The full

list of screened-in peer-reviewed manuscripts (including editorials), dissertations, theses, and white papers can be found in Appendix 1.

Study quality was not assessed, as that was not the review's intent. The objective was to analyse social work research to gain an understanding of if and how social work researchers were thinking about and/or addressing sustainable development. Study characterisation denoted eight categories: empirical, theoretical, pedagogical application, literature review, editorial/call to action, white paper, thesis, and dissertation.

Results

As a quantitative framework, 2,014,451 (ProQuest) social work publications were produced from 2010 through 2015. Our review screened-in 71 applicable publications, representing 0.00004% of social work research published from 2010-2015. Of these, 17 (24%) works were dissertations/theses and white papers and 54 (76%)were published in peer-reviewed journals (including editorials). Combined, special issues of *International Journal of Social* Welfare in 2012, and *Australian Social Work* in 2013 produced 18 (33.3%) of the screened-in peer-reviewed articles. Four journals published 29 of the 54 (53.7%) articles: *International Journal of Social Welfare, Australian Social Work, Social Work Education* and *Social Work Research*. Scholars J. H. Williams, J. Drolet, J. McKinnon, C.A. Faver, J. L. Willett, M. Gray, and J. Coates authored 19 (26.8%) of the

total products and 18 (33.3%) of the peer-reviewed articles. Table 1 presents screened-in publication findings characterisation.

<Insert Table 1 here>

Empirical studies most frequently used qualitative methodologies (n = 8 (44.5%)), followed by quantitative and community-based participatory action research methodologies that were equally represented with four (22.2%) articles each. Mixed-methods research was used in two (11.1%) articles. Only one product (Walke, 2015) included intervention research. Of the 18 theoretical articles published in peer-reviewed journals, six (33.3%) were specific to social work education. The three products classified as pedagogical application differed from these six articles, as they moved beyond conceptual modeling to present case studies evaluating specific teaching techniques or curriculum content previously used in a classroom setting.

We also analysed trends over the five-year period. Figure 1 demonstrates that journal publications are on the rise, while dissertations, theses and white papers show a steady upward trend.

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It is important to note that at least two significant social work texts within this theme were produced during the time frame investigated: Lena Dominelli's *Green social*

work: From environmental crisis to environmental justice (2012) and Mel Gray, John

Coates, and Tiani Hetherington's *Environmental Social Work* (2012).

Discussion

Earth's continued sustainability for humans can no longer be taken for granted

(Millennium Ecosystem Assessment, 2005; Rockstrom et al., 2009; Steffen et al., 2015).

Environmental changes due to unchecked human population growth and overconsumption

now threaten human survival, with the poorest and most vulnerable on Earth impacted most

significantly despite causing the least damage themselves (Raworth, 2012), making this a

pressing social justice issue facing social work practitioners (Tedeschi et al., 2013).

While the review was limited by the inclusion of only English papers, findings led

to the conclusion that recent social work research and academic literature do not adequately

account for environmental degradation and sustainability issues, even when they are

directly linked to human and social development. Despite evidence that many

environmental problems are intrinsically linked with social justice issues aligned with

social work's mission (e.g., food security, protecting environmentally induced migrants, or

environmental racism) (Dominelli, 2012; Schmitz et al., 2012), the lack of intervention

studies in the review's findings indicate social work is failing to make a substantial

contribution to mitigating environmental degradation's growing threat to human health,

well-being, and survival. The finding that environmental degradation and sustainability

account for less than 1% of all social work research suggests that these issues and themes

are not prioritised. If the products from the two special issues are removed from the data

count, 36 peer-reviewed publications in a six-year time span remain. Publication biases,

funding barriers, institutionally perpetuated disciplinary boundaries, and low value

attributed to interdisciplinary research in tenure systems have been cited as impediments to

interdisciplinary environmental research by both natural and social scientists (Roy et al.,

2013), and have also likely hindered prioritisation of these themes in social work research

and influenced these findings.

      In a 2013 survey, 83% of 179 natural and social scientists conducting research at the

human-environment interface reported frequent or occasional trouble publishing

manuscripts since the interdisciplinary research did not adhere to preferred methodological

and theoretical approaches or traditional journal guidelines, frameworks, and interests,

which were often perceived as disciplinary (Roy et al., 2013). Though influenced by the

presence of two special issues, the finding that more than 50% of screened-in peer-

reviewed articles were published in only four journals may be evidence of a publishing bias

or challenge in regards to human-environment research rooted in social work. As such, the

low number of empirical studies (18 in six years), may also be representative of a

publishing bias, and not an accurate reflection of the amount of environmental research conducted by social workers.

The documented schism between "evidence-based practice" and "practice-based research" in social work (Anastas, 2015) is also a reminder that the lack of environmental social work research may not be reflective of the extent that sustainable development and environmental degradation themes are incorporated into practice and unpublished or unevaluated interventions. Indeed, globally numerous social service organisations and grass roots organisations employing social work strategies are working at the interface of environmental challenges and social injustices and thus impacting both social and sustainable development (e.g., India's Navdanya, Kenya's Green Belt Movement, Cambodia's 3S Rivers Protection Network). While they may not disseminate their work through traditional academic (e.g., peer-reviewed literature) and development (e.g. white papers and technical reports) channels, these organisations present potential opportunities for collaborations with social work researchers who have the abilities to amplify these organisations' voices by assisting in the dissemination of their findings to newer and broader audiences.

Approximately 20% of all screened-in products, and 25% of peer-reviewed products specifically, are editorials or calls to action. While these articles often cite clear and cogent

evidence of the changing environment's effects on, and relevance to, social work practice, and explicitly link social work to the environmental sciences, the evidence suggests that they are not being heeded. Several factors are likely perpetuating this inaction. Social workers are not the only population difficult to motivate in regards to environmental action. The enormity of problems and challenges often creates a paralysis or apathy that leads to inaction (Clayton et al., 2014; Moser, 2007), which in research and academia, is likely exacerbated by the aforementioned institutional barriers, publication biases, and other challenges to interdisciplinary research. This paralysis and apathy could be further complicated in social work, a profession that is already frequently overtaxed, and whose breadth of social injustices pertinent to its mission is continually expanding.

Regardless of root causes, these persistent gaps remain problematic. Without using research to explore the intricate links between environmental degradation and social justice, the social work profession will fail to build an evidence-base grounded in the profession's values or to inform practice with the marginalised and vulnerable communities social workers serve, who will be impacted most severely by environmental change. These literature gaps will also continue to perpetuate knowledge gaps in social work curricula and practice, creating a reliance on other disciplines to create the knowledge base that will be needed for future social work practitioners (Brekke, 2012). It can be said with certainty that

global environmental problems are exponentially worsening (Steffen et al., 2015), and that social workers will be unable to ignore these problems when utilising complex systems approaches in their practice. Therefore, the evidence-based knowledge they will seek to inform their advocacy and interventions with clients should be rooted in social work values and derived from the social work profession itself.

Because environmental change shares a complex association with social justice, other professions will potentially begin to implement traditionally social work services and interventions, without the unique social work training that is rooted in cultural competence toward marginalised and oppressed populations. Proctor (2010), offers historical cautionary tales about specific social work sectors (e.g., case management and disaster response) where other professions usurped social work "turf" due to a lacking social work research presence. The results included diminished credibility to the social work profession, its training, proffered services, and outcomes as well as undue risk to vulnerable populations.

The review also yielded positive findings in contemplating how the field moves forward and further engages in environmental and sustainability challenges. First, differing methodological approaches are cited as a barrier to interdisciplinary environmental research (Roy et al., 2013). Though only 18 empirical journal articles were included in this review's final data set, they represented a breadth of research methodologies. Qualitative methods

were the most frequently cited approach, despite the natural and environmental sciences'

reliance on quantitative frameworks (Roy et al., 2013), demonstrating that some barriers are

penetrable. The 18 theoretical journal articles also synthesised diverse theories, integrating

traditional social work theories with ecological and environmental theories to form robust

interdisciplinary conceptual models. While still limited in number, these conceptual and

theoretical models should provide the foundations for intervention studies and further

empirical research.

Though J.H. Williams, J. Drolet, J. McKinnon, C. A. Faver, J. L. Willet, M. Gray,

and J. Coates authored 33% of the peer-reviewed articles, their credentials range from a

Dean Emeritus (J. H. Williams), to the author of a doctoral dissertation completed in 2015

(J. L. Willett). Student theses and dissertations account for 18.3% of all screened in

products, suggesting that the next generation of social work scholars are interested in

moving the field forward, and integrating these concepts into their own scholarship. To

continue this progress, social work faculty who serve as mentors and advisors need to

support these students with receptivity to their pioneering ideas and a willingness to

embrace an interdisciplinary approach to mentorship. Building collaborative teams within

the field, and across disciplines, is essential.

Social work researchers interested in the human-environment interface also appear to be making progress within the field of social work as the American Academy of Social Work & Social Welfare (AASWSW) acknowledged the field's response to global environmental change as one of the 12 grand challenges for social work (AASWSW, 2016; Kemp and Palinkas, 2015). Raising awareness and recognition of the linkages is not enough, though. Future calls to action and theoretical frameworks need to be more effective at stimulating empirical research, and one strategy may be to include specific future directions for research, as well as resources and strategies for overcoming previously noted interdisciplinary research barriers. Global environmental change is the most dangerous crisis facing humanity, and it is critical that much needed social work practitioners are prepared and equipped to intervene in environmental challenges and that social work researchers have clear paths to disseminate their interdisciplinary research. There is also an urgent need for social work intervention research to stimulate change at the macro, mezzo, and micro levels through behaviour change, policy, and advocacy— ensuring a sustainable and equitable usage of Earth's resources.

Global environmental change is a grand challenge for all professions, including social work, in the 21st century. Ultimately the findings of this review demonstrate the need for greater recognition of this challenge in social work research.

Disclosure of Conflict Interests

The authors have no conflict interests to disclose.

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Appendix 1

Complete list of screened-in publications

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