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ABSTRACT

A complexity informed approach has recently been proposed as a hopeful revolution for health promotion, requesting appropriate ways of tackling the complexities of health, equity and wellbeing. The aim of the scoping review presented here is to present the findings from 20 published articles linking health promotion and co-creation to explore a potential avenue for advancing complexity-informed health promotion. Health promotion and co-creation are established concepts that have long been enacted in practice. Although each concept has different origins, they are both premised on similar approaches to value-creation such as participation and collaboration. Little has been done, however, to link the two practices. The findings of the review were analysed using thematic analysis, constructing four themes: (1) *dealing with complexity*, (2) *value creation*, (3) *the value of the values*, and (4) *benefits and challenges*. Discussion of these themes suggest that current links between health promotion and co-creation are scarce but promising. There was a general consensus regarding the benefits of integrating co-creation to health promotion. Based on these findings, we make four propositions: Further development of a shared moral ethos and theoretical grounding; accounting for the complexities of health; public services and societal development; and use of appropriate research methodologies. Overall it is argued that co-creation and health promotion are mutually beneficial concepts. More research is needed to highlight potential and challenges, especially related to health equity. Linking co-creation to health promotion could serve to advance the impact of complexity-informed health promotion research, theory and practice.

Keywords: health promotion, co-creation, empowerment, complexity, scoping review.

INTRODUCTION

Despite a strong and generally accepted foundation for health promotion (HP) provided by the Ottawa Charter (WHO, 1986), the development of HP has been a rocky journey. HP initiatives have yielded limited success, followed by criticism as a consequence. In an effort to ensure the principles of HP are not lost and to unleash the potential of such an approach to population health, HP has undergone a number of revolutions – the biomedical, the psychological and the social. Success however has been limited, leading some to ask if it is a lost discipline, with potential harmful (unintended) effects, and if the critical mass of HP practice and scholarship is slow to progress (e.g. Guggelberger, 2018; Mohammadi, 2019; WHO, 2009). Recently, however, a fourth and hopeful revolution has been proposed by Mohammadi – the complexity informed revolution (Mohammadi, 2019). In order to maintain forward momentum that can be directly useful for practice, policy and research, we explore the current links between HP and co-creation, as well as the potential to integrate these approaches to nurture the development of complexity informed HP.

Complexity informed HP uses complexity science to embrace and account for the complexity inherent within health, wellbeing and equity within a socio-ecological framework of complex adaptive systems. Mohammadi attributes the failure of previous HP initiatives and revolutions to the adoption of an inflexible approach whereby changes to one part of the system are hoped to create changes to the whole system (Mohammadi, 2019). This critique and reorientation complement seminal publications in the HP literature highlighting the diverse social determinants of health (SDH), focusing on their connectivity and multiplicity (Commission on Social Determinants of Health, 2008; Marmot and Allen, 2014). In acknowledging the complexities and fluidity of health and well-being and the multiplicitous factors involved, it is hoped that through the adoption of complexity informed HP initiatives can create the changes that have been hoped for, for so long.

Public health and well-being, as well as its social distribution, is intrinsically linked to societal development. As such, outcomes are dependent on a multitude of stakeholders across the whole-of-society and the whole-of-governments at multiple levels (Kickbush and Gleicher, 2012; WHO, 2013). The aim of this article is to address this complexity by linking HP to co-creation in order to explore propositions and recommendations for advancing HP theory, research and practice. This article draws on the findings of a scoping review whereby literature across the relevant fields pertaining to HP and co-creation was reviewed for instances of commonality and collaboration. Before the scoping review findings are presented and discussed, it is necessary to provide some context to each of the concepts under review in order to ground the arguments made theoretically and conceptually. For this reason, we provide a short overview of each concept and detail how we use them here, starting with health promotion.

Health promotion

HP is often used synonymously with public health, – a discourse that can be argued to be predicated on the ideals of biomedicine and neoliberalism, anathemas to HP (e.g. Eriksson and Lindström, 2008; Morgan and Ziglio, 2007; Pūras, 2019; Seedhouse, 2004). Health promotion can and does mean different things to different people (Seedhouse, 2004). Thus, it is important for us to outline our stance. HP is formally defined in the Ottawa Charter (OC) for Health Promotion (WHO, 1986, p. 5) as “the process of enabling people to increase control over the determinants of health and thereby improve their health”. The OC definition is underpinned by values of social justice and equity; emphasis is placed on “creating supportive environments” (p. 6) and “strengthening community action” (p. 6) through the advocacy of a settings based and system-wide approach, alongside enabling and mediating

for health equity. Further, building on a human rights and people-centred approach, the foundations of HP embedded into the OC, place citizens at the heart of participatory and empowering HP processes. Assets and capabilities for health and well-being alongside collaboration and partnerships are connected to a systemic and ecological approach to the wider (social) determinants of health (e.g. Commission on Social Determinants of Health, 2008; Morgan and Ziglio, 2007; Pūras, 2019; WHO, 1986; WHO 2016).

OC defined HP is also based on a salutogenic perspective on health that focus on nurturing assets for wellness rather than to focus on determinants for disease, a vital perspective embedded in the OC (e.g. Antonovsky, 1996; Eriksson and Lindström, 2008). The salutogenic orientation and the “settings focus” of the OC was further refined at the Shanghai conference in 2016 where the ethos that “health is created in the settings of everyday life” (WHO, 2016) was reinforced and refined to underpin the importance of addressing such settings, and to nurture assets for health and well-being. The Shanghai Declaration on promoting health in the 2030 Agenda for Sustainable Development (WHO, 2016) was explicitly linked to UNs Sustainable development goals (UN, 2015), where goal #17 represents a co-creational approach: *Partnership for the goals*, highlighting that health promotion is still a topical concept and a desired practice. Our use of ‘health promotion’ in this article refers to the principles and values prescribed through the OC and further developed in later WHO declarations. We also recognise that health is a complex phenomena that is multiplicitous in nature.

Co-creation

Like HP, co-creation is also a contested concept that is used differently and means different things depending on context and setting. Co-creation, co-production, co-design and similar

terms are often used interchangeably to refer to the same thing, and are used differently across disciplines (Osborne, 2018; Pestoff, 2019; Voorberg *et al.*, 2015). In science and technology studies (STS), for example, co-production refers to the appropriation of scientific terms and findings into everyday language and understanding (Jasanoff, 2004). In public governance and service management, however, co-creation and co-production are used to refer to a co-constructed service experience and the public value of this experience. It is this approach to co-creation that we refer to here.

The concept of co-creation as a model for understanding public value creation emerged largely out of the failure and resistance to the strategies and neoliberal discourse of New Public Management (NPM) in Public Sector Organizations (PSO's) (Osborne *et al.*, 2016; Pestoff, 2019). For Osborne co-creation is “an interactive and dynamic relationship where value is created at the nexus of interaction” (Osborne, 2018, p. 225). Indeed, Torfing and colleagues (Torfing *et al.*, 2016, p. 8) define co-creation in the public sector as:

a process through which two or more public and private actors attempt to solve a shared problem, challenge, or task through a constructive exchange of different kinds of knowledge, resources, competences, and ideas that enhance the production of public value in terms of visions, plans, policies, strategies, regulatory frameworks, or services, either through a continuous improvement of outputs or outcomes or through innovative step-changes that transform the understanding of the problem or task at hand and lead to new ways of solving it.

Co-creation is increasingly acknowledged as a necessary approach to address pressing and wicked societal challenges (e.g. Osborne, 2018; Ostrom, 1996; Pestoff, 2019; Selloni, 2017). As mentioned, a recent example is the adaption of UN's sustainability goals, where SDG #17 is dedicated to co-creation, acknowledging the need for joint action and partnerships for the goals (UN, 2015; WHO, 2016). Such collaborations enable societies, governments and

communities to work together towards mutual goals (Torfing *et al.*, 2016). The theoretical debate addressing co-creation is based on theories of value (Cluley and Radnor, forthcoming). Indeed, Radnor *et al.* (Radnor *et al.*, 2014), in line with Osborne *et al.*, (Osborne *et al.*, 2016), assert that co-creation is part and parcel of public service provision owing to the fact that public service users and providers must engage at some level for the service to exist.

Important to the argument made here is the fact that both the concepts/practices of HP and co-creation are premised on both a like moral ethos, whereby values of empowerment and participation and asset-based approaches are prioritised. Further to this a shared approach to practice is evident, whereby complexity and multiplicity is recognised and catered for. Exploring processes where such values can be created requires a deeper understanding of the connections between co-creation and HP. A review of relevant literature is therefore needed. To the best of our knowledge, this is the first article to have specifically investigated existing links between co-creation and HP to outline the potential to integrate these approaches to public value-creation. Below we outline how we conducted this scoping review.

METHODOLOGY

Scoping review

Scoping reviews are suitable when the purpose is to systematically search, map, and identify gaps in the current literature on a topic with the aim of informing practice and policy, and providing direction to future research priorities. (Levac *et al.*, 2010). The scoping review conducted was based on Arksey and O'Malley's framework (Arksey and O'Malley, 2005), consisting of the following five steps: (1) *identifying the research question*, (2) *searching for*

relevant studies, (3) selecting studies, (4) charting the data, (5) collating, summarizing and reporting the results.

Step 1: identifying the research question

As outlined, the study aimed to highlight the relationship between HP and co-creation in order to work towards a practical framework for tackling the complexity of socio-ecological determinants of health and well-being. In order to do this, the following research questions were asked:

- Research question 1 (RQ1): What are the current links between co-creation and health promotion in the scientific literature?
- Research question 2 (RQ2): What is the potential impact of co-creation in health promotion theory, research and practice?

Step 2: Identifying relevant studies

The literature search examined any programme, policy, intervention or service related to HP in combination with co-creation and/or co-production. The search strategy was conducted in two phases. The first phase identified peer-reviewed publications, including reviews, empirical studies and theoretical/conceptual articles combining HP and co-creation/co-production. In order to avoid biases in the collection of published literature on the topics, only contemporary scientific discourses on HP and co-creation through eligible studies were included. Both conceptual and empirical papers were included in order to identify as many potential links between HP and co-creation as possible. Only English-written contributions, published in peer-reviewed journals, were considered to allow replicability of the review. Due to the fact that the co-creation literature is relatively recent, we limited the search for the last ten years (since 2009) and until May 2019.

To account for terminological overlaps, the following search terms were used: "health promotion" or "public health" or salutogen* and co-creat* or cocreat* or co-product* or coproduct*. Search terms were entered into two databases; Pubmed and Scopus.

Together, these databases cover a broad range of journals addressing a wide range of social sciences as well as health sciences. (see figure 1 for information on selection criteria).

[insert - Figure 1. Search strategy results - here]

Step: 3 Selecting the studies

Articles were retrieved for full text review if one or both authors thought it fit the inclusion and exclusion criteria as described above. Full text review was completed by the first author and audited by the second author. In line with the aims of this study, as well as the purpose of scoping studies, we did not assess the quality of the retrieved articles as we investigated the total breadth of available information regardless of study design or quality (Arksay and O'Malley, 2005). See figure 1 for details on the process of selecting relevant studies.

Step 4: Charting the data

The data was charted against the following general factors: aspects of HP including, settings, participation, focus, definition, principles, policy, evaluation and outcomes; aspects of co-creation including, definitions, barriers, motivation, reciprocity, reflexivity, trust, skills, and roles; descriptive information such as date of publication, discipline, geographical site, journal, and method; objectives and; outcomes.

Thematic analysis

After charting the data, we applied from Braun and Clarke's six step approach to thematic analysis (Braun and Clarke, 2006) to identify shared themes with a view to identifying

evidence for the potential contribution co-creation can have on HP practice. This involved: (1) *familiarisation with the data*, (2) *generate initial codes*, (3) *the identification of themes within, between and across codes*, (4) *review of the themes*, (5) *formalisation of the themes*; and (6) *write up*. The process of analysis was not linear, as we moved between the steps several times to make sense of the data. We approached the analysing process with a social constructionist stance (McNamee, 2010), acknowledging the analysing process as a process of co-construction (e.g. meaning-making is negotiated in dialogue between us as authors, theory and relevant literature, our experiences as public health workers using co-creation in our practices, in dialogue with other scholars and so on). Nvivo 12 was used to support this process.

RESULTS

The results are presented in two sections attending to: (1) scoping the link between health promotion and co-creation (RQ1); and (2) results exploring the potential impact of co-creation in health promotion theory, research and practice (RQ2).

Volume, nature, and characteristics of research

The first initial searches generated 309 potential articles. Once the inclusion and exclusion criteria were applied, however, this was significantly reduced to 20 records, which ultimately was included in the review. Only three of the records was published before the end of 2015, and the rest (n=17) was published subsequently until May 2019. The majority (n=14) of studies were conducted in Europe. The rest represented transnational (n=2), Australia (n=2), North America (n=1) and Asia (n=1). The articles were mainly published in journals with a public health/HP scope, but with no journals being substantially more frequent than others.

Together, 15 different journals were represented in our material. Methodologically, qualitative studies predominated (n=10). Specially, various types of case studies (n=7), where some of these also relied on mixed methods. Only one record had a quantitative design.

The descriptions and definitions used to describe co-creation/co-production were diverse, however participation and collaboration amongst key stakeholders, organizations, and levels of governance represented common principles. Target populations varied in age, but the majority of studies were directed to solving a specific public health-related problem. Together n=6 of the articles explicitly addressed “settings” of everyday life (community, social media, housing/neighborhoods, schools, and workplace). Eight records had an explicit lifestyle-oriented focus, and four focused on mental health. The (co-)creation of a knowledge-base and innovation for HP policy and practice was a key issue in 14 of the records, whereas eight had policy development and/or implementation of policy as a main focus. Two articles held an explicit aim to reduce inequities in health. The majority of articles addressed HP in a local context, and highlighted localism and contextual factors as key issues (see table 1).

According to the reviewed literature, co-creation could address the need for innovation and collaboration for the achievement of successful HP by constructing new roles, relationships and structures between stakeholders that can respond fluidly to the complexities within HP issues and practice. Answering to RQ 1, the current links between HP and co-creation are scarce, but promising. Table 1 summarises this information.

[insert - Table 1. Overview of identified articles - here]

Results exploring the potential impact of co-creation in health promotion theory, research and practice

To progress a discussion to answer to RQ 2, we conducted a thematic analysis across the included articles. The following four themes were identified: (1) dealing with complexity, (2) value creation, (3) value of the values, and (4) benefits and challenges.

Dealing with complexity

A common argument for a co-creation approach to HP was that a multi-level, multi-actor approach is needed in order to deal with the complexity of factors affecting health, well-being and equity. Other frequent rationales were to inform, take action and evaluate HP means and initiatives. A repeated argument in the studies was that linking HP and co-creation serves to tackle the messiness and complexity of knowledge-construction and policy-processes, and to bridge gaps between research, practice and policy. For example, Dickerson and colleagues show how they used co-creation to evaluate a range of initiatives within the Born in Bradford, Better Start project (Dickerson *et al.*, 2019). Based on their experiences, Dickerson and colleagues (Dickerson *et al.*, 2019) produced a number of tool kits to support better evaluation of HP work, advocating a co-creational approach to support the complex nature of this work, stating:

We have developed a pragmatic operational guide that provides a framework to take an intervention through the service design process in a number of sequential phases. This allows the expectations of all parties to be clear from the outset and ensures that all requirements are considered in a logical order including: specification of the complex components of the intervention; consideration of the practical challenges and service constraints; the needs of the local community; recruitment and referral pathways; identification of measurable and appropriate outcomes through a logic model; and clarification of the data needed to measure these outcomes. (Dickerson *et al.* 2019, p. 7)

Similarly, when discussing the application of a co-created approach to HP in the workplace, Sirola-Karvinen *et al.* (Sirola-Karvinen *et al.*, 2010) discuss the benefits regarding the complex and relational characteristics of a workplace focusing on the participative nature of co-creation:

every organization is unique, and it is important to pay attention to the context of the development process. Work communities function through relations with each other and the environment; thus, the promotion of health and wellbeing cannot focus on merely individuals but on communities as a whole. (Sirola-Karvinen *et al.*, 2010, p. 1269)

and later “Cocreation itself involves building the criteria for a health-promoting workplace, which in turn is used as a self-evaluation tool” (Sirola-Karvinen *et al.*, 2010, p. 1270), and then “Through participation, everyone becomes empowered to develop health and well-being at work and to take joint responsibility for it” (Sirola-Karvinen *et al.*, 2010, p. 1271).

Overall, the records argued for capacity-building as an approach to enhance organizational readiness and skills to support the adoption of a whole-of-government and whole-of-society approach to HP. Across the studies identified, this also included hybrid organizations and networks, with a particular focus on participatory leadership, ownership of the agenda, joint action, reciprocity and joint responsibility and accountability for desired outcomes. For example, in their study to explore the implementation of Health Equity in All Policies (HEiAP) Heimburg and Hakkebo (Heimburg and Hakkebo, 2017) found that the adoption of a co-creational approach can result in improvements in system and human capacity, stating:

System capacity is strengthened by governing HEiAP according to national legislation and a holistic governance system at the local level. Municipal plans are based on

theory, evidence and local data. A ‘main story’ is developed to support the vision, defining joint societal goals and co-creation strategies. Policies are anchored by measuring and monitoring outcomes, sharing accountability and continuous dialogue to ensure political commitment. Human capacity is strengthened through participatory leadership, soft skills and health promotion competences across sectors. (Heimburg and Hakkebo, 2017, p. 68)

A relational approach to creating trust and “soft skills” within the co-creation process (and mobilize motivations to do so) was also highly valued regarding the complexity of health issues and the range of knowledge needed to ensure successful HP work. For example, Luca *et al.* (Luca *et al.*, 2016) found that the interaction between different stakeholders that is fundamental to co-creation results in the added benefit of knowledge creation and skill sharing resulting in a holistic approach to action, and Haar and colleagues (Haar *et al.*, 2014) stress the importance of face-to-face meetings between stakeholders to sustain the level of commitment in collaborative processes.

Skill sharing was also shown to have the added benefit of creating project sustainability for example Marston *et al.* (Marston *et al.* 2016, p.377), in their study addressing community participation and women and children’s health found “when supported to develop their own skills, individuals may voluntarily support others, for example by sharing breastfeeding techniques or setting up support groups, thereby introducing a layer of sustainability independent of the original intervention”. Navigating power-dynamics, clashes between stakeholder motivations, and tension between logics and approaches were all mentioned as barriers for dealing with complexity through a co-creational approach. Mansfield (Mansfield, 2016) clearly outlines that power dynamics should be taken into account when implementing co-creation. In their study Martson *et al.* (Martson *et al.*, 2016) show the shift in power relations that comes with a co-creation approach redistributes typical

power relations and performative roles. The importance of tailoring co-creation processes to the local context and stakeholders social worlds, where sense-making processes and capacity-building to tackle complexity takes local contextual factors into account, was highly stressed throughout the included articles.

Value creation

As outlined in the introduction, co-creation in public services aims to create public value experiences. A variety of value claims were made throughout the studies regarding the application of a co-creational approach. The ‘values’ described tended to be similar and focused on both individual and public value. The value of the projects outlined was largely related to the objectives of the studies (see table 1). However, four identifiable perceptions of value within the identified studies emerged based on the application of a co-creational approach. First, health, well-being and equity, in a variety of conceptualizations, was a central *public value* thought to result from the co-created HP initiatives. Here, supporting healthy lifestyles, nurturing social conditions and creating capabilities and empowerment for health and well-being was coined as central issues. For example, Marston *et al.* (Martson *et al.*, 2016, p. 377) argue that “For individuals to develop as agents of change and for participatory processes to work well, individuals and groups need the capabilities to achieve the health goals they value”.

Second, the “value-creation” reported to be advanced by a co-creational approach often included *knowledge-development* and *social innovation* in HP (especially in terms of community-based approaches, co-construction of knowledge, co-learning, co-implementation and co-evaluation). Leask *et al.*, (Leask *et al.*, 2019, p. 7), for example highlights upskilling as a benefit of co-created HP work, stating “up-skilling can increase the capacity and capability of the co-creators and potentially result in the development of more innovative and

meaningful solutions”. Knowledge sharing, as part of the co-creation process, was also found to have the added benefit of facilitating trust and ownership, allowing the work to generate individual value experiences. Stakeholders’ reflection on their co-creation helps to build trust and space for differences as well as a shared practice-based knowledge. When discussing their study to explore the local delivery of a national HP project Haar *et al.* (Haar *et al.*, 2014, p. 215) claim that ‘stakeholders’ reflection on their co-creation helps to build trust and space for differences as well as a shared practice-based knowledge, concluding that “the idea of co-creation can facilitate a shared knowledge creation that stimulates shared implementation strategies” (Haar *et al.*, 2014, p. 229). Similarly, when discussing the benefits of co-creation, Freebairn *et al.* (Freebairn *et al.*, 2016) argue that, ‘the co-production’ aspect of the participatory approach was highly valued. The co-production aspect was reported as an essential component of building understanding of the modelling process, and thus trust in the model and its outputs as a decision-support tool.

Thirdly, *better and more efficient policies, interventions and services* was frequently outlined to be a central population level value emergent from the adoption of a co-creational approach. Such as Leask *et al.* (Leask *et al.*, 2019, p. 13) suggests that adopting a co-creational approach can result in efficiency savings at a government level, claiming:

One of the opportunities offered by utilising co-creation may be a more efficient and cost-effective intervention design process. As lifestyle is influenced by a complex web of factors which vary between individuals and settings, the number of parameters to consider when developing an optimum and tailored intervention are theoretically infinite. Therefore, the current top-down approach which academic researchers implement to understand which combination of these parameters are the most effective is perhaps not the most time efficient or financially viable option.

Finally, we found that a *democratic value*, related to public engagement, social capital and trust was, to some extent, present in some of the studies. For example, Marston *et al.* (Marston *et al.*, 2016 p. 377) argue that “A supportive policy environment that identifies social accountability mechanisms will legitimize and support participatory processes at all levels”, and further concluding that:

We know much already about the power of participation. In a sense it is no longer a technical issue, but one of civil rights and political will. For transformative action on women’s, children’s and adolescents’ health, participatory approaches are essential, at all levels: district, national, regional and global. Without these, we face the risk of stalled progress and persisting inequities in health. (Marston *et al.*, 2016, p. 380)

Democratic value was also linked to informing political processes through co-creation. For example, Cheetham *et al.* (Cheetham *et al.*, 2018) links co-creation to democratic value through embedded research, arguing that “The ERer witnessed first-hand how research can be subject to the political pushes, pulls and pressures of local democratic accountability with its competing agendas” (Cheetham *et al.*, 2018, p. 68), pushing forward the necessity of strengthening trust and relationships in ‘conversational spaces’ to impact democratic processes and political agendas.

The value of the values

This theme is inextricably linked to the value creation theme presented above and concerns the values that underpin the value co-creation process. A co-creational approach to the HP work outlined in the studies was justified on the grounds of a like moral ethos. This was largely predicated on values of participation and collaboration, building on resources in people, communities and wider systems. Adherence to values of nurturing human relationships, social capital and capacity building in organizations and ecological systems

between these elements was also central values underpinning processes of value creation. Indeed, the adoption of a co-creational approach was outlined across the studies to include a focus on capacity to facilitate the promotion of issues such as empowerment, capabilities, inclusivity and transparency in order to reflect and accommodate for complexity inherent within such work.

Additionally, co-creation was thought to aid the negotiation of complex power dynamics through a flattening of hierarchies and a redistribution of power (as seen in theme 1). This is consistent with the values of HP, whereby bottom up, participative approaches are favoured. When discussing the role of academics in co-produced projects Leask *et al.* goes as far to say “academic researchers who do not fully accept or implement the governance associated with co-creation may endanger the veracity and effectiveness of the process” (Leask *et al.*, 2019, p.13). However, as shown in table 1, only a few studies explicitly addressed the values of social justice and equity to underpin co-creational processes of public value creation.

Benefits and challenges

Overall, the application of a co-creational approach to HP problems and practice was thought to be beneficial across all of the studies identified. The benefits of combining HP and co-creation approaches are seen throughout the presentation of the previous three themes. Application of a co-creational approach was thought to be an effective and efficient way of accounting for the complexity that is inherent within HP work. For example, van den Heerick *et al.* (van den Heerick *et al.*, 2017, p.627) concludes:

co-creation is a promising new strategy for health campaigns, since it provides the target audience with the opportunity to show how they think about the unhealthy behaviour in their own way and it enables them to further disseminate the campaign

message.

Similarly, Verloigne *et al.* (Verloigne *et al.*, 2017, p. 862), states:

“using a co-creational approach as a participatory technique in which the target group is actively involved in the development and implementation of actual intervention strategies for a specific setting is a promising approach to increase engagement of the target group.

Such statements of support were widespread throughout the articles reviewed. While generally co-creation was reported to yield positive outcomes, some studies did report limitations and possible challenges. For example, Daykin *et al.* (Daykin *et al.*, 2017, p. 123) state that “Effective co-production can be undermined by structural and cultural barriers as well as unequal stakeholder relationships”. Other challenges included the time-consuming nature of the process of coordinating all involved and unrealistic resourcing (Daykin *et al.*, 2017; Freebairn *et al.*, 2017), unequal engagement between participants (Freebairn *et al.*, 2018), as well as deviation from and changing objectives between stakeholders (Daykin *et al.*, 2017; van den Heerik *et al.*, 2017). Ultimately these barriers and challenges can be linked to the complexity of health and the multitude of stakeholders involved.

DISCUSSION

Here we seek progress complexity-informed HP by linking HP to co-creation. Returning to the research questions, our review suggests that current links between HP and co-creation are scarce but promising. The review findings show that HP and co-creation are mutually beneficial concepts (theoretically and practically), and linking the two could serve to advance complexity informed HP practice and research. We further this claim by discussing three pertinent issues informed by the scoping review: (1) legitimizing co-creation in complexity-

informed HP, (2) propositions for further development of complexity-informed HP, and (3) recommendations and closing comments.

Legitimizing co-creation in complexity-informed health promotion

As outlined by Mohammadi (Mohammadi, 2019) in his recent editorial, and also demonstrated by UN Special Rapporteur Pūras (Pūras, 2019), traditional approaches to HP have proven to be inadequate in responding to the complex nature of health and wellbeing. Often considered a ‘complex’ or a ‘wicked’ problem, public health and health inequities are multifactorial and changeable. They are highly dependent on social determinants and political, historical and cultural realities. Health in all policies is therefore a legitimate aim and a socio-ecological systemic approach to multi-sector collaboration, at all levels of government and society is required (Kickbush and Gleicher, 2012; Naaldenberg *et al.*, 2009; Pūras, 2019; WHO, 2013; WHO, 2016). This is not a novel suggestion, however, to date it has been a challenging suggestion.

As outlined in the introduction, the limited impact of previous approaches calls for new ways to tackle HP challenges in an increasingly complex world. This implies that a “settings-approach” to health is not enough, we also need to consider the wider, socio-ecological context of such settings, as well as the integration and coordination between them (e.g. Bloch *et al.*, 2014; Naaldenberg *et al.*, 2009). Surprisingly, however, only a few articles in our review explicitly linked a co-creation approach to core values of HP such as social justice and human rights. The SDG agenda, and references to SDG #17 was also surprisingly absent. Building on the foundations of the OC and the SDG’s, we incorporate these crucial public values into our further propositions and recommendations.

Propositions for further development of complexity-informed health promotion

Supported by this review, we suggest three propositions to inform further development of HP: (1) A shared moral ethos and theoretical grounding renders co-creation an appropriate approach for complexity informed HP practice; (2) The adoption of a complexity informed approach to the co-creation of HP will allow the complexities of both health, public services and societal development to be accounted for and negotiated, enabling a better chance of success; and (3) Research concerning complexity informed HP and co-creation should be based on appropriate research methodologies in order to ensure that the complexities of health, wellbeing and equity are addressed.

Proposition one concerns shared ideology and theoretical orientation. Although it is a debated issue, HP is an ideological approach (Eriksson and Lindström, 2008; Seedhouse, 2004). It is people-centred, participatory, empowerment-based, social justice-oriented, and strongly linked to human rights (Lindström and Eriksson, 2006; Marmot *et al.*, 2012; Pūras, 2019). Although the literature on co-creation is not as ideologically explicit as HP, this body of literature could to some extent, also be described as ideological, based on premises of participation and empowerment (Selloni, 2017; Voorberg *et al.*, 2015). Co-creation is rapidly gaining momentum as an approach to create public value and tackle complexities inherent to such processes, and is now linked to global sustainable development (e.g. Ferlie *et al.*, 2019; Pestoff, 2019; Torfing *et al.*, 2016). HP and co-creation, moreover, are predicated on a like moral ethos. In addition to this, they are both participative approaches, and tightly connected to democratic processes (e.g. Ferlie *et al.*, 2019; WHO, 2013; Marmot and Allen, 2014).

Theoretically both HP and co-creation approaches are heavily influenced by asset-based approaches and capacity building (e.g. Morgan and Ziglio, 2007; Torfing *et al.*, 2016; WHO, 2013). Combined with complexity-informed HP, such approaches could empower

communities and societies to enforce joint action towards common, desired goals for the common good. This could prevent to further a main focus on addressing (individual) risk and enforcing more expert-dependency, threatening a sustainable development of human welfare. In this way mistakes of previous interventions focused on piecemeal change, as highlighted by Mohammadi (Mohammadi, 2019), could be avoided. Co-creation facilitates the recognition of capabilities in and between people and nurtures conditions for success. It is intuitive, moreover, that co-creation could offer theoretical and empirical support to the practical application of complexity informed HP. Taking action on the social determinants of health are often intensely political (Hanefeld *et al.*, 2019; Marmot and Allen, 2014;). A co-creational approach also facilitates democratic innovations in line with Kickbush and Gleicher's collaborative imperative (Kickbush and Gleicher, 2012) within a deliberative democratic approach (e.g. Ferlie *et al.*, 2019; Torfing *et al.*, 2016; Smith, 2009). It is proposed, moreover, that a shared moral ethos renders co-creation an appropriate approach for complexity informed HP practice, and to nurture further development of health and equity in all policies.

This proposition, however, comes with a solid warning. Only a few articles eligible for this scoping review explicitly addressed equity and social justice. Participation should not be viewed as a value in itself, rather participation should be carefully addressed in terms of representation. In some instances, research on co-creation has shown a social divide in participation (Jakobsen and Andersen, 2013; Pestoff, 2019; Selloni, 2017). Disadvantaged citizens may be constrained in from participating in co-creation by a lack of knowledge, and by a lack of conditions creating accessibility and capabilities for participation, thus silencing their needs, presence and voice (Jakobsen and Andersen, 2013; Smith, 2009; Young, 2000). Added to this the dominant conceptualisation of co-creation is predicated on the implicit assumption that all service users are rational actors (author ref). Without a critical

appreciation of this, using co-creation as a virtue in itself (e.g. Voorberg *et al.*, 2015) could (unintendedly) increase health inequity via the exclusion of certain voices. Thus, there is a need to explore the potential harmful effects of co-creation on health equity and social justice in further empirical and theoretical work. We suggest that future research should address this concern.

Our second proposition concerns the enablement of the first proposition. Co-creation is a relational and heterogeneous process that results in a public value experience. Our results show that the practical combination of HP and co-creation is a positive union that brings numerous and multi-level (individual and population wide) benefits. As Mohammadi articulates (Mohammadi, 2019), health is a complex issue that is experienced at both an individual and a societal level. HP is also a complex undertaking that must accommodate the multiplicitous and changeable factors associated with the health issue being tackled, but also the fluid and relational nature of citizens, public services and other stakeholders involved.

In much the same way as Mohammadi critiques previous HP initiatives (Mohammadi, 2019), (author ref) have critiqued the conceptualisation of co-creation. Indeed, (author ref) propose a reconceptualization of co-creation based on assemblage theory (Deleuze and Guattari, 1987) in order to manage, account for and embrace the complexities of co-creation processes, where multiplicity, communality, and inclusion are the focus. Here, co-creation is defined in these terms; as a relational, fluid and changing process that involves a range of factors and will be different for different people depending on their own circumstances.

As suggested by several of the articles included in our review, bridging the know-do gap within HP practice and policy requires much more than linear translation of knowledge (e.g. Cairney and Oliver, 2017; Dickerson *et al.*, 2019; van den Driessen Mareeuw *et al.*, 2015). According to van den Driessen Mareeuw *et al.* (van den Driessen Mareeuw *et al.*, 2015), an

innovation system perspective is crucial. This needs to include broader stakeholder involvement as well as the creation of social, economic, discursive and contextual conditions for achieving innovation and institutional change. Based on these recent works, therefore, we propose: the adoption of a complexity informed approach to the co-creation of HP work will allow the complexities of both health, public services and societal development to be accounted for and negotiated. Critical to the argument we make here is that such an approach could induce knowledge- co-creation and much needed innovation, enabling a better chance of success.

Our final proposition concerns the philosophy of science and methodology. Another criticism of previous HP research and practice is that it is generally a-theoretical and a-philosophical (Lindström and Eriksson, 2008; Seedhouse, 2004). Indeed, our review supports this critique. Only one of the included articles (Haar *et al.*, 2014) was explicit about their ontological and epistemological stance, and very few studies advanced the theoretical underpinnings of HP. This is also often the case for literature addressing co-creation (e.g. Voorberg *et al.*, 2015). Owing to this lack, we propose that future academic work combining complexity informed HP and co-creational approaches is underpinned by a clear and appropriate philosophical approach to research. Mohammadi's (Mohammadi, 2019) and (author reference) suggestions of complexity science and a logic of assemblage provide workable foundations. Thus we encourage further discussions on ontological and epistemological groundings of HP.

Methodologically, case studies dominated the records included in our review. The same pattern was also found in a major, systematic literature review on co-creation and co-production with citizens in public innovation, where the literature dominated by (single) case studies (Voorberg *et al.*, 2015). Although such articles represent vital contributions to the development of HP, we suggest that co-creation should be explored as an approach to HP in a

more pluralistic manner in terms of the methodologies applied. This would allow the complexities inherent within such work to be explored further. For this reason, we propose that research concerning complexity informed HP and co-creation should be based on appropriate research methodologies in order to ensure that the complexities of health, well-being and equity are addressed. Especially, and in accordance to co-creational principles of participation, collaboration, empowerment and context-sensitivity, we welcome more action research-oriented studies in further developments of linking co-creation to HP (e.g. Gergen, 2014; Hersted, Ness, and Frimann, 2019).

Limitations

Although the databases used in our search cover a very wide range of relevant journals, this could act as a weakness as relevant journals could miss out from the search. Further, a potential limitation could be a “publication bias”, favouring positive results of applying a co-creation approach to HP. Our scoping review have only examined peer-reviewed articles in scientific journals. As co-creation is rapidly gaining interest, it might be that the analysis could be better informed by also including grey literature, practice narratives and policy documents. The exclusion of non-English language articles could also be a weakness. Future research should address these concerns, at the present study only represent a scope of the scientific literature to create a starting-point for further progress.

RECOMMENDATIONS AND CLOSING COMMENTS

Thirty years ago, the Ottawa Charter defined HP and described key principles for actions linked to health as a human right, empowerment of people and communities and working through partnerships. According to Kickbush and Gleicher, collaboration is the new

imperative for health and wellbeing (Kickbush and Gleicher, 2012). This is made explicit by SDG # 17, where collaboration is key for sustainable development. However, the question remains: how can we approach this request? We conclude that the practice and theory of co-creation provides HP with a well needed, credible platform for value creation, dealing with the complexities inherent to health and well-being for all as societal goals.

Based on the findings in our review, and the propositions outlined above, the co-creation approach gives a promising outset to further development of “complexity-informed” HP. We suggest that co-creation can support the success of complexity-informed HP initiatives by providing a framework for participative, collaborative, context-sensitive and knowledge-based practice that reflects the complex nature of health. Future HP research and practice development should therefore progress the linking of these two approaches. It is crucial that the implementation of complexity informed HP is underpinned by a shared philosophical approach, whereby complexity can be both accounted for and embraced. An ecologically oriented whole systems approach (i.e. whole-of-government and whole-of-society) that recognises complexity and importantly the fluid and changeable nature of this complexity is needed (Marston, 2016; WHO, 2013; WHO, 2016).

Supported by the ethos of the OC and later seminal WHO declarations, we suggest that complexity-informed HP should be framed through addressing human rights and the SDG’s, and develop actions, research and theory to support integration of SDG #17 into complexity-informed HP. In combining HP and co-creation as two complementary approaches we believe HP initiatives can reverse the current trend of failure and that success is achievable at both an individual and a societal level. We suggest that aligning the two approaches to public value creation could ultimately progress people to increase control over the determinants of health and thereby improve their health as the OC prescribed in 1986. We

hope that our propositions spark debate, inspire change, and stimulates further innovation and experimentation to push the HP agenda forward.

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