

How can digital placemaking impact health and wellbeing of citizens through green and blue space connections? A systematic literature review protocol

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Keywords

Digital placemaking, health, wellbeing, green space, blue space, nature-based solutions

Abstract

Background: Recent debates around nature-based solutions to improve cities' health expose the opportunity for digital placemaking. This study explores the relationship between digital placemaking, health and wellbeing, and green and blue spaces. A systematic review of empirical works in these three areas will provide valuable insights into innovative digital techniques which can be used to support citizens health and wellbeing.

Methods: A systematic literature review of studies will be conducted. Databases Web of Science, Scopus, Emerald, ACM DL and Google Scholar will be searched, and primary outcomes will include digital placemaking studies and case studies that contains wellbeing effects and/or are performed involving nature. Studies published in English from 2016 to 2021 will be included. Study selection will follow the Preferred Reporting Items for Systematic review and Meta-Analysis Protocols (PRISMA) guidelines. The methodological appraisal of the dataset will be assessed independently by two different reviewers (BK and MJ) using the Mixed Method Appraisal Tool (MMAT).

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Introduction

Urban cities are primary population hubs, and 68% of the world's people will live in urban areas by 2050 (United Nations, 2018). A reduction of public space resulting from the industrialisation process (Paquin, 2019) has limited the contact with nature for populations living in urban areas. The positive effect of nature on wellbeing has been well documented (e.g., van Houwelingen-Snippe et al., 2021), to the extent that the World Health Organisation (WHO) has concluded that '*urban green space interventions have health benefits, particularly for those coming from deprived communities*' (WHO, 2016, p. 40). Conversely, negative health and wellbeing effects of cities are evident, such as urban communities' social isolation and disintegration (Marshall, 2021). However, ongoing debates suggest nature-based solutions can play a key role in improving cities' health and wellbeing, as well as their climate resilience (Gulsrud et al., 2018; MacIntyre et al., 2019).

To promote connection with surroundings and creating meaningful places, placemaking appeared as a concept in the 1960s (Sepe, 2016). Placemaking spans a broad range of categories, despite definitional discrepancies. A notable extension is the concept of *digital placemaking* (for review, see Keegan, 2021), which is seeing considerable attention in both empirical studies and practice. There are contrasting approaches to digital placemaking for example, Clarke's (2021) vision of digital placemaking focuses on the relationship between physical and digital public space and how online and offline places are entangled. Whereas MacIntyre et al. (2019) espouse the use of location-specific technology to support community engagement and place attachment, while cultivating deeper relationships with public space.

The most explored and studied medium used by digital placemaking is social media (Alvarez et al., 2017; Breek et al., 2021; Shankardass et al., 2019; Toland et al., 2022). Most studies focus on social networks and the way people interact and enhance their sense of place through social media representation and interaction. Technology usage in our daily life has increased and has become a key element in our way of interacting with our reality and surroundings, allowing community engagement and enriching people's connection to place (Harner et al., 2017). However, there are concerns about the contrast between technology and nature, as people tend to spend more time interacting with their digital devices and less time exploring and connecting with nature (Soedarsono et al., 2021). This situation has the effect of a "loss of familiarity, awareness and care for the natural environment" (Edwards et al., 2020, p. 296).

In this context, the experience of lockdown due to the COVID-19 crisis and its following effect has raised awareness of the impact of our surroundings on people's health and wellbeing, making evident the importance of focusing on community wellbeing (Calderon & Takeshita, 2021) by government and policymakers. Hence, the pandemic offers us the opportunity to advance our understanding of placemaking practices and their effect on community wellbeing since more people are relying on digital technologies for environmental connections (Waite, 2020). Besides the complexity of digital placemaking, there is limited research exploring the connection among digital placemaking, wellbeing and engagement with nature. A comprehensive understanding of these three areas – digital placemaking, health and wellbeing, and green and blue space – is absent in the extant literature.

Aim and objectives

This systematic literature review aims to explore the impact of digital placemaking on health and wellbeing through green and blue space. Specific objectives include:

1. To synthesise and collate the current evidence base in the area of digital placemaking, health and wellbeing, and green and blue space.
2. To explore the different successful digital placemaking practices and case studies.
3. Analyse, synthesise and conceptualise thematic components from the literature review.

Method

This protocol has been prepared following the Preferred Reporting Items for Systematic review and Meta-Analysis Protocols (PRISMA) guidelines as shown in the PRISMA 2020 checklist (see Page et al., 2021). 'Results' and 'Discussion' sections from the guidelines will be assessed once the review is in progress.

Eligibility criteria

For the purpose of this systematic review, we will include only peer-reviewed publications in the English language with restrictions on publication year from January 2016 to December 2021. Studies that are book reviews or thesis will be excluded as well as studies from disciplines that are not related to the three main topics of the research such as Law, Education or Textiles. Exceptional book chapters will be included as well as conference proceedings.

Search strategy

The search will be conducted in the following databases: Web of Science, Scopus, Emerald, ACM DL and Google Scholar. The title, abstract and citation information collected from the electronic databases will be exported to Microsoft Excel to store, remove duplicates and apply exclusion criteria. After this process is completed, the title and abstracts will be exported to Rayyan software for the title and abstract screening. The articles compiled will be assessed by the searches against the inclusion and exclusion criteria by two independent reviewers (BK, MJ). Discussion panels will be arranged to solve any disagreement over the eligibility with a third reviewer (TM).

Publication year will be limited from 2016-2021 and articles will be first excluded based on title and abstract against inclusion and exclusion criteria. Full text of eligible studies based on their abstracts will be obtained, read and evaluated by two independent reviewers (BK, MJ).

Data extraction

Data will be collected from each included report and will be checked by two independent reviewers (BK, MJ). Any discrepancies will be resolved through discussion. A standardised, pre-piloted form will be used to extract data from the included studies for assessment of study quality and evidence synthesis. Extracted information will include report author, year and source of publication, case study (if applicable), method/study design, sample characteristics, type of intervention, measure of performance, theoretical approach, key findings, and gap in literature for future research. In case of unclear information, authors of the reports will be contacted to provide further details.

Types of outcomes

The study is interested in digital placemaking practices and cases that have an impact in community's wellbeing when linking with green and blue space. We aim to find the connections among these three topics, such as successful case studies characteristics, specific placemaking practices, health indicators, green space characteristics, and wellbeing benefits. Any measure of engagement rates and improved health and wellbeing indicators were eligible for inclusion.

Quality assessments

The authors will assess the risk of bias and quality of evidence of the studies using the Mixed Method Appraisal Tool (MMAT) (Hong et al., 2018). This tool permits evaluation of the

methodological quality of five categories of studies: qualitative research, randomized controlled trials, non-randomized studies, quantitative studies and mixed method studies.

Two reviewers (BK, MJ) will apply independently MMAT of included articles. In case of differences, a third reviewer (TM) will be included in this process.

Data synthesis

Since we have included a variety of related keywords as per the complexity of the term ‘digital placemaking’, it is expected that the nature of this review will be a descriptive synthesis of the impact of digital placemaking in health and wellbeing through green and blue space. Data from published studies will be collated and summarised following the Thematic Analysis method (Braun & Clarke, 2012). This method will aid our study to identify and organise data insights into patterns of meaning across the dataset collated. Meta-analysis could not be undertaken for this review due to the heterogeneity of the research and potential differences in outcomes.

Potential limitations

One of the limitations is the language, as all papers will be in English only. Another limitation was the lack of a definitive studies of the concept of digital placemaking prior to 2016. Hence, (Abdel-Aziz et al., 2016) was selected as a landmark study in the field which first provided an interrogation of the topic, to a suitable degree. However, this is also a potential limitation since we have focused on the year range 2016-2021, as prior studies may have held minor contributions, however their omission is justified from screening and reading of these works. Moreover, another constraint is finding a limited number of studies matching the criteria, as we aim to collect papers combining the three main topics: digital placemaking, health and wellbeing, and blue and green space. To prevent this, we plan to expand our search keywords including ancillary and related terms to the three topics.

Ethics and dissemination

The review proposed involves secondary analysis of currently existing data and, therefore, will not need ethical approval. The results of this systematic review will be submitted for peer-reviewed publication in open-access academic journals and presented at relevant conferences.

Study status

The study is currently ongoing. The expected end date for the study is September 2022

Conclusion

The proposed systematic literature review will contribute to examining existing evidence to highlight the opportunities of how digital placemaking impacts health and wellbeing through green and blue space. We believe this research will be a valuable contribution to the understanding digital placemaking implications in urban communities. Results from this review will inform and facilitate the use of digital placemaking practices to enhance community health and wellbeing through nature-based solutions.

Other information

Registration and protocol

Once the review is registered, specific information will be displayed here.

Support

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Availability of data, code and other materials.

Once registered, any additional documents from this Protocol that will be published publicly will be specified in this section.

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