

# Service design and Design for wellbeing: A Literature Review about their Relationship



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## ABSTRACT

Service design allows for the stimulation of wellbeing in many areas, such as education and healthcare. Even though service design and wellbeing have been separate focuses of interest in design research, the relationship between them is still not fully understood. This systematic literature review aims to investigate the relationship between service design and wellbeing, identifying bibliometric characteristics of the studies (publication year, origin), applications of “wellbeing service design”, definitions of wellbeing, and user participation in the research methods. Results are presented in four categories: wellbeing related to emotional experiences and other psychological aspects; wellbeing focused on the nature and quality of interactions; wellbeing related to environmental aspects; and wellbeing presented as an aim of service improvement.

## KEYWORDS

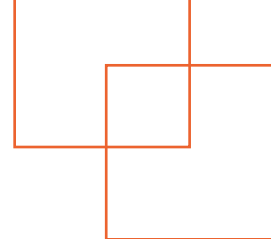
Wellbeing. design for wellbeing. service design.

## RESUMO

O design do serviço permite a estimulação do bem-estar em muitas áreas, como educação e saúde. Embora o design de serviços e o bem-estar tenham sido focos de interesse separados em pesquisas de design, a relação entre eles ainda não é totalmente compreendida. Esta revisão sistemática da literatura tem como objetivo investigar a relação entre design de serviços e bem-estar, identificando características bibliométricas dos estudos (ano de publicação, origem), aplicações de “design de serviços para o bem-estar”, definições de bem-estar e participação do usuário nos métodos de pesquisa. Os resultados são apresentados em quatro categorias: bem-estar relacionado a experiências emocionais e outros aspectos psicológicos; bem-estar focado na natureza e qualidade das interações; bem-estar relacionado a aspectos ambientais; e bem-estar apresentado como objetivo de melhoria de serviços.

## PALAVRAS-CHAVE

Bem-estar. design para o bem-estar. design de serviços.



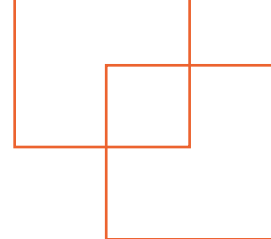
## 1 INTRODUCTION

The relevance and impact of service design have been observed in different sectors of the service industry, ranging from banks, telecommunications, retail, and transport to public and social services, such as education and healthcare (Mager, 2009). There are five characteristics of service design practices: they are multidisciplinary, experiential, participatory, experimental, and reflective (Vink, et al., 2019). It is a constantly evolving interdisciplinary field that brings together different methods and tools from diverse disciplines (Stickdorn and Schneider, 2014). Service design has a recognised potential to contribute to human wellbeing.

On one hand, there are many concepts of wellbeing and its applications to service design. As shown by Baek et al. (2015), wellbeing can be stimulated by the collaborative relationships of an organization and its users through changes in services. On the other hand, the connection between service design and wellbeing (as an end result expected from service use) is still not fully understood, and clear definitions are still lacking. According to Ryff and Keyes (1995), “the absence of theory-based formulations of well-being is puzzling” (p.719–720). In both approaches – service design and Design for wellbeing – users are often invited to participate in the design process, helping to develop artefacts that will be used by them (Larsson, et al., 2005). Service design employs activities and visualization tools in co-creation to empower stakeholders respond to environmental changes (Burn et al., 2006). Furthermore, by bringing the users into the process and allowing them to express their expectations, they become co-creators of value (Yoo, et al., 2019).

To better understand the relationship between service design and Design for wellbeing, this systematic review focused on investigating the relationships between service design and wellbeing. Therefore, the study will observe which are the bibliometric characteristics of such studies (origin, number of publications, key-words), the applications of “wellbeing service design”, the definitions of wellbeing that are used and how often user participation is adopted in the research methods.

We seek to identify the existing gaps in the literature and contribute to the formulation of research agendas in order to aggregate new knowledge to the “wellbeing service design” field. The remaining of this paper is presented as follows: Background (item 2), Method (item 3), Results (item 4), and Conclusions (item 5).



## 2 BACKGROUND

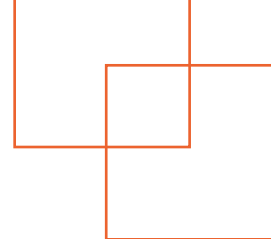
Wellbeing studies often refer to objective and material issues (e.g., nutrition and physical activity). In recent years, many areas such as psychology, philosophy, economics, and politics started developing research focused on the subjective aspects of wellbeing, including design (Desmet et al., 2009). There is a conceptual confusion between wellbeing and quality of life. They have been used interchangeably in many disciplines. Nowadays, quality of life has been understood as a component of wellbeing, rather than as a synonym (Dodge et al., 2012). In a historical perspective, two approaches to wellbeing are observed. The first, the hedonic approach, was based on concepts such as happiness, positive affect, low negative affect, and satisfaction with life. The second, the eudaimonic approach, focused on human development and positive psychological functioning. Even though different perspectives are observed in research on wellbeing, wellbeing is believed to be multi-dimensional (Dodge et al., 2012).

According to Desmet et al. (2009), design should give more attention to wellbeing, potentializing its positive effect on users' lives. In design research, the concepts of subjective and psychological wellbeing are often observed.

We use the term subjective well-being to refer to happiness as an enduring sense of appreciation for one's life (i.e., being happy with one's life), rather than a momentary feeling. According to this meaning, happiness is neither frivolous nor superficial. Design for Subjective Well-Being supports this definition by presenting itself as the activity of designing with the explicit intention to support people in their pursuit of a pleasurable and satisfying life, and, even more important, in their desire to flourish. (Desmet et al., 2009, p.1)

When it comes to its non-tangible aspects, wellbeing also addresses psychological aspects such as purposeful living, self-acceptance, autonomy, positive relationships with others, environmental mastery, and continued growth and development (Ryff, 1989). Design for wellbeing is applied to the development of technologies, products, services, built environment, and sustainability, with professionals often manipulating design variables to influence wellbeing. Even though generalizable knowledge is desired, "wellbeing is a multi-layered phenomenon that connects to local specificities that help understanding its complexity" (Tonetto, 2020, p.99). Therefore, observing contextualized users is essential, since design projects are usually applied to particular contexts, such as a specific service.

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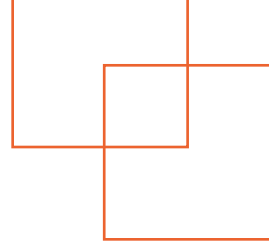
Users are often invited to participate in the design process, helping to develop products and services that will be later used by them. Therefore, in many cases, the goal is to design artefacts through participatory design (Larsson et al., 2005). As defined by Keinonen et al. (2013), artefacts created this way will have particular sensitivity standards, what would help enhance user's wellbeing. Thus, this approach to design gives researchers the opportunity to expand their "knowledge of the context through various means of inquiry and user involvement, while simultaneously focusing on the development of a feasible solution proposal" (Keinonen et al., 2013, p.41).

Design for wellbeing may be a useful tool when working with many research contexts, since it brings stakeholders closer to the process of designing, focusing on the users and thus injecting new sensitivity standards in the design process (Keinonen, Vaajakallio and Honkonen, 2013). These participatory design processes frequently involve users, but also bring together professionals and other parties involved in the design problem (e.g., Wadley et al., 2014; Malinverni et al., 2017; Hobson et al., 2018; Vallès-Peris et al., 2018).

Service design features a dynamic design language that involves the principles of being: user-centred (services must be tested through the user's point of view), co-creative (all stakeholders must be included in the design process), sequential (the service must be viewed as a sequence of interrelated actions), evident (the intangible nature of services must be as visible as the physical artefacts), and holistic (the whole service environment must be considered) (Stickdorn and Schneider, 2014). Thus, service design seeks to analyse systems and subsystems of relationships and interactions, addressing services as living systems. It aims to ensure that service interfaces are useful and desirable from the customer's point of view and are efficient and distinct from the organization's point of view (Mager, 2009).

Service design commonly employs research related to people's lives, needs, and behaviours in the design process (Polaine et al., 2013). It explores in-depth emotions and experiences, helping individuals visualize and describe their desires. In many cases, the experience of a service begins before the customer contacts the supplier and is embedded in larger systems of relationships and interactions. Therefore, it is important to consider the changes people go through during the relationship with a service, and how the intangible aspects are made perceptible at all points of contact (Marge, 2009).

There are many applications of service design focused on promoting



user wellbeing, such as education, banking, and healthcare. In education, e.g., Nguyen (2011) outlines intervention strategies that would give Aboriginal children access to an education that understands their culture and needs. Hatzakis et al. (2010) present financial services (often involving facilitation of transactions) and discusses how their design can focus on the entire user experience as a source of wellbeing. Wye et al. (2008) specify the necessary characteristics of complementary therapies so that this service is accepted, endorsed, and supported by the NHS (National Health Service), as well as by professionals and users. Furthermore, Vink et al. (2019) highlight that service design may help create, disrupt and maintain institutions in the healthcare sector, which tends to be change-resistant.

### 3 METHOD

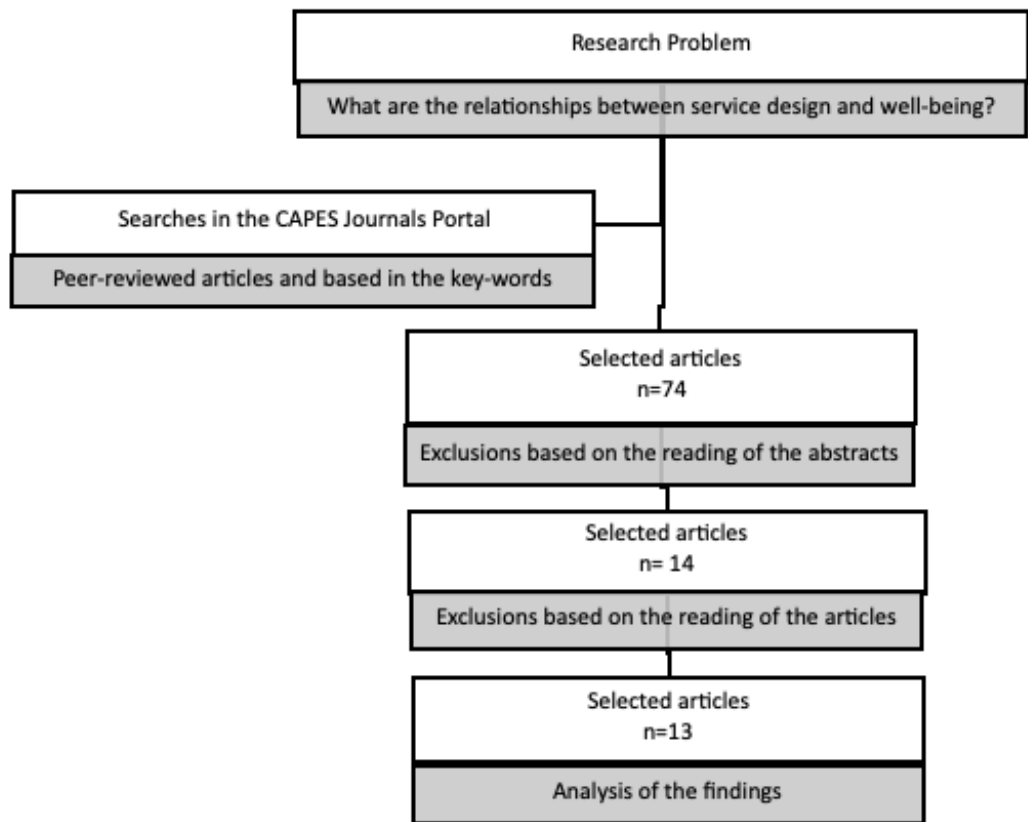
A systematic review was carried out in this research (Dresch et al., 2020; Khan et al., 2003). The process involved in this systematic review can be divided into five steps: formulation and framing of the research question; choice of data source and search keywords; evaluation of the quality of the studies, in which only peer-reviewed articles were used; summary of the articles; and interpretation of the findings.

To understand what are the relationships between service design (as a process) and wellbeing, a search was carried out in the following databases: Web of Science, Scopus, Clarivate Analytics, Engineering Village, AMS, ASTM International, SciFinder, ProQuest, Britannica Academic Edition, Eighteenth Century Collection Online, Begell House, and JOSPT. A Brazilian digital platform that grants access to the mentioned databases was used in the search (Portal de Periódicos da CAPES). The key-words used were “service design” AND wellbeing OR “well being” OR well-being AND “design process”. The keyword “design process” was used to exclude generic definitions of service development not related to the design field. The search for articles included papers published in the English language, peer-reviewed, considering all publication until December 2018. Only research with data collection and analysis or methodological studies, such as tool development, were included in the analysis.

Seventy-four articles were found, from 1995 to 2018. Two designers and one psychologist read all of the articles, evaluating titles, keywords, and abstracts of the papers. A table with all of the

information from these articles was created by the researchers to visualize the title, year, keywords, type of research, authors' names, journal, country, institution, method, wellbeing definition and area of research. After careful consideration, thirteen of them matched the inclusion criteria. They all were English language, peer-reviewed papers, that focused on the Design for wellbeing in service contexts. Figure 1 summarises the research method.

Figure 1: Methods.

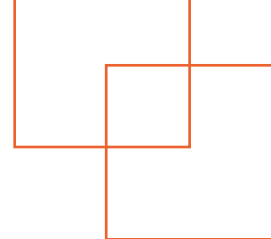


Source: authors.

## 4 RESULTS

Due to the low number of publications that were found (only thirteen articles, from 2008 to 2018), with zero papers published before 2008, it is possible to say that this theme has not been deeply explored, in relation to the criteria studied in this article. Results show a publishing frequen-





cy of one article per year, except in 2016, when two publications were found, and in 2018, that had four publications. Table 1 presents the authors' names, year and journal of the thirteen articles considered in this study. It is important to note that none of the papers were published in the same journal. Thus, eight of the journals were focused in healthcare, one in education, one in production and operations management, one in evaluation, one in design and one in quality improvement.

Table 1: Authors' names, year and journal of publication.

Authors	Year	Journal
Ångström-Brännström et al.	2018	Journal of Pediatric Oncology Nursing
Baek, et al.	2015	Design Studies
Brocklehurst et al.	2018	BMC Oral Health
Gammon et al.	2014	International journal of mental health systems
Gill et al.	2018	BMC Geriatrics
Hatzakis et al.	2010	Production and Operations Management
Hobson et al.	2018	Amyotrophic Lateral Sclerosis and Frontotemporal Degeneration
Nguyen	2011	Canadian Journal of Education
Smith	2016	BMJ Quality Improvement Reports
Van Zwanenberg	2009	International Journal of Mental Health
Wärnestål et al.	2017	Journal of Medical Internet Research
Westhorp et al.	2016	Evaluation
Wye et al.	2008	BMC Health Services Research

Source: Authors.

The majority of studies were developed in Europe, with the remainder being divided between North America, Oceania and Asia, as shown in Figure 2. Concerning the articles published in the European continent, research groups from the United Kingdom and Sweden are responsible for most of the studies. In Oceania, the only paper is from Australia. In North America, the same amount of studies was published in the United States and Canada. This is an important information, since it helps visualize the global presence of the subject, allowing to create a panorama of the work that has already been done. Furthermore, the results gathered also indicate that there is no institution that concentrates the largest number of studies. There are no authors identified more than once.

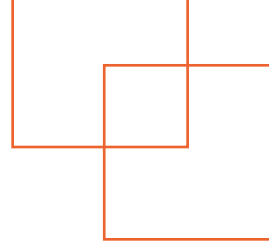
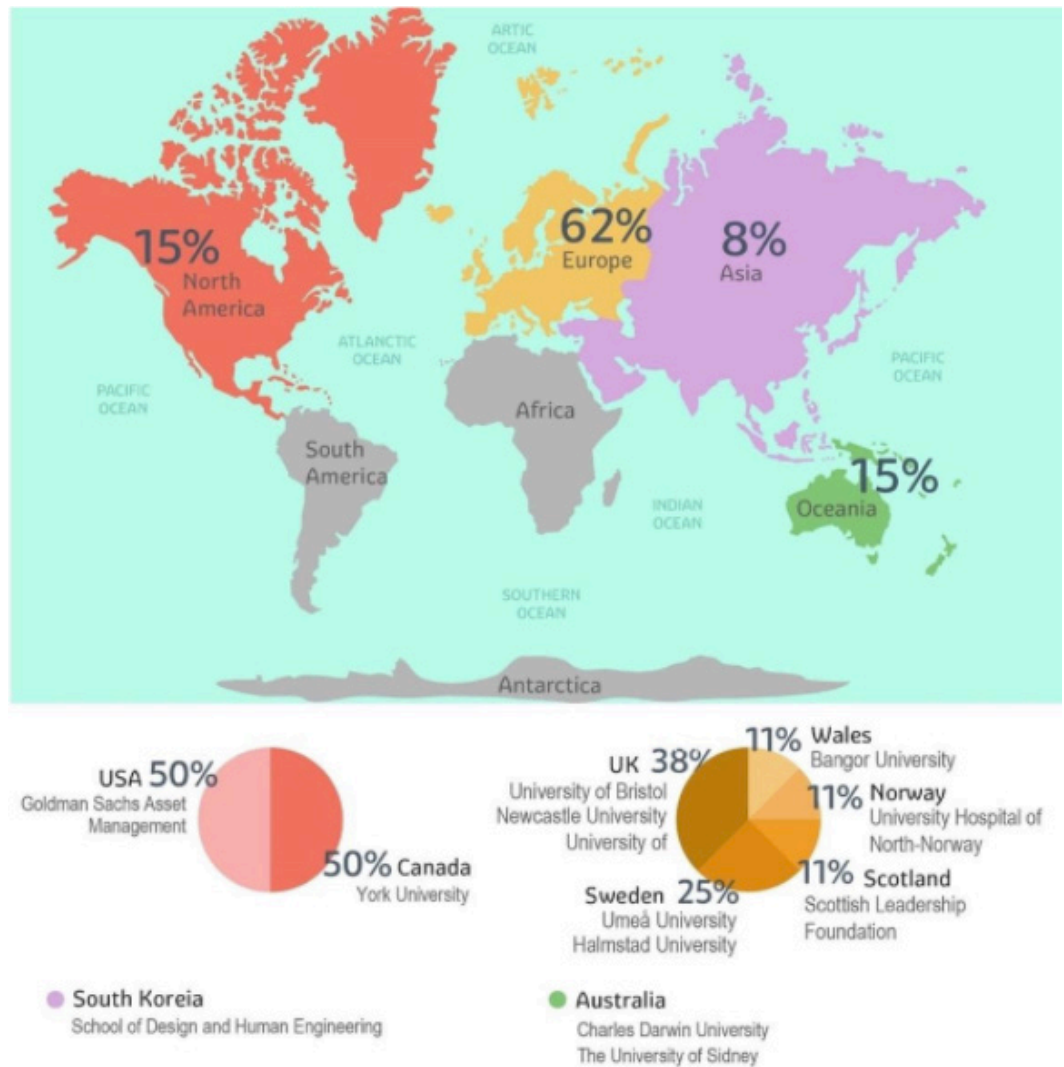


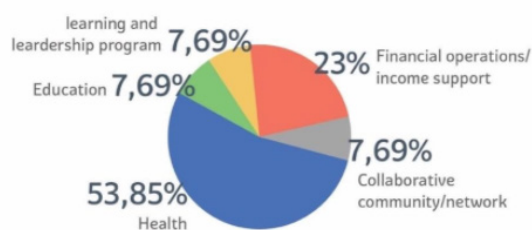
Figure 2: distribution of studies by continents and countries.



Source: authors.

The selected articles address the relationship between services and wellbeing applied to healthcare, education, financial operations, collaborative network, and learning and leadership, as seen in Figure 3. Healthcare stands out for the number of papers published.

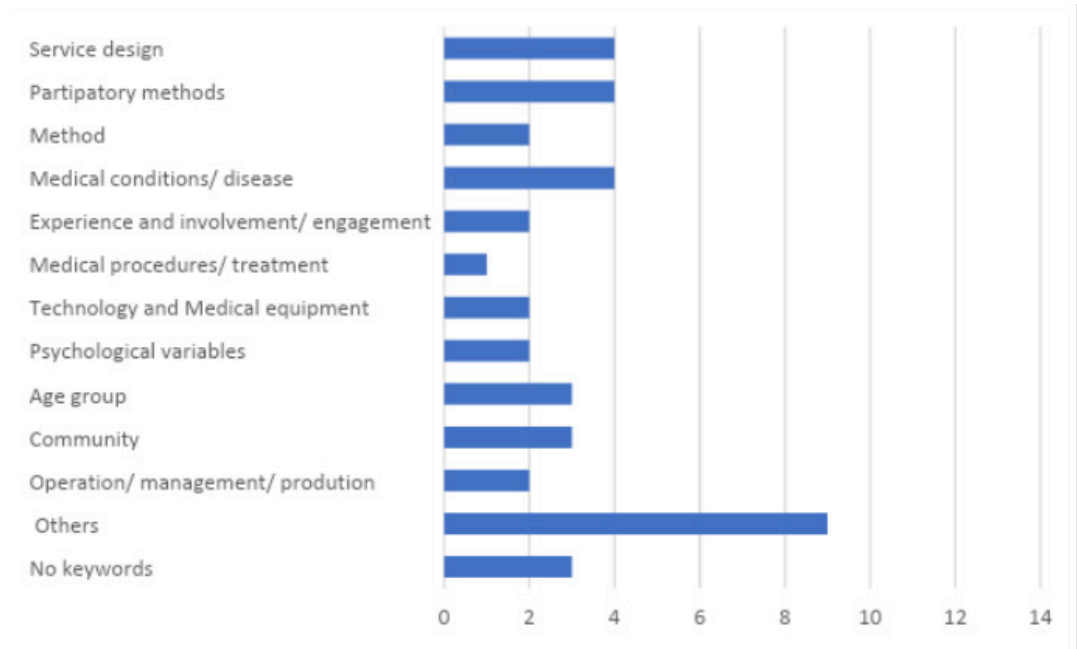
Figure 3: Type of service.



Source: authors.

Keywords were grouped and classified into categories, as shown in Figure 4. Only ten of the thirteen publications indicated keywords. Other than service design, the most common categories were participatory methods, and names of medical conditions and diseases.

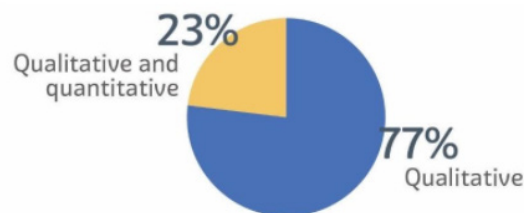
Figure 4: Frequency of categories of keywords.



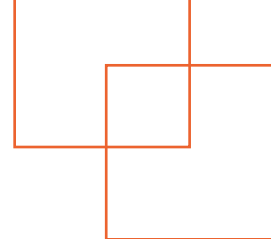
Source: authors.

Qualitative methods are the most common in the studies surveyed, as shown in Figure 5. Among the qualitative methods are in-depth interviews, observation, focus group, workshop, case study, discussion meetings, and Best-Worst Scaling (BWS). The remaining of the studies used quantitative and quantitative methods. Quantitative approaches methods included descriptive statistics, Simpson's index and Discrete choice experiments (DCEs), used to interpret the Best-Worst Scaling (BWS).

Figure 5: Research methods.



Source: authors.



The findings related to definitions of wellbeing and the use of participatory methods are described in the following sub-sessions. It was possible to identify a diversity of user participation methods in the analysed papers. Observing that similar methods were described with different names, we chose to use the actual definitions provided by the authors. Most studies (69.2%) adopted user participation.

We were able to classify wellbeing concepts observed in the studies in the following categories: wellbeing related to emotional experiences and other psychological aspects, wellbeing focused on the nature and quality of interactions, wellbeing related to environmental aspects, and wellbeing as an aim of service improvement.

#### **4.1 WELLBEING RELATED TO EMOTIONAL EXPERIENCES AND OTHER PSYCHOLOGICAL ASPECTS**

Five articles presented concepts of wellbeing related to psychological aspects, emotional experiences, and sense of the value of people. Nguyen (2011) connects wellbeing to self-confidence and self-esteem. The author refers to people's opinions of themselves and their job-finding abilities, as well as to their cognitive abilities. Hatzakis et al. (2010) argue that financial services and the relationship with the user are linked to a "sense of wellbeing" and to people's sense of self-worth. The authors suggest that delays and quality problems can affect the clients' wellbeing and cause problems between them and the company. Ångström-Brännström et al. (2018) describe the need to create interventions and artefacts to improve the experience of children with cancer (ages 2 to 18 years) and their families during radiotherapy treatment by reducing fears, anxiety and stress. Gammon et al. (2014) refer to wellbeing as a non-traditional service goal, which is to understand personal aspects and values of people with mental illness. According to the authors, researchers and clinicians usually consider only the reduction of symptoms, adherence to treatment, consumption of services, and satisfaction as service goals. Brocklehurst et al. (2018) sought to understand the subjective experiences of the elderly when using the dental health system, assuming that service improvement would affect self-esteem, quality of life, general health, and diet, which would affect their wellbeing. Table 2 indicates papers and participatory methods classified in this category.

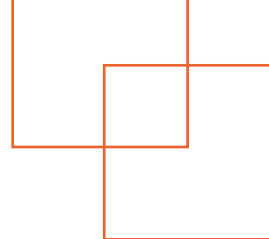


Table 2: Participatory design methods (excluding case studies).

Concept of wellbeing	Papers	Design methods
Wellbeing related to emotional experiences and other psychological aspects	Gammon et al. (2014)	Community-based participatory research
	Ångström-Brännström et al. (2018)	Human-centred design (HCD)
	Brocklehurst et al. (2018)	Co-design

Source: authors.

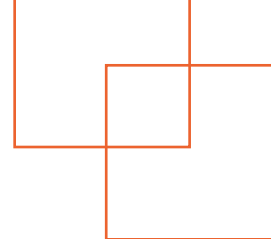
Gammon et al. (2014) used what they defined as community-based participatory research (CBPR), consisting of systematic research and participation of those affected by the research problem, with the aim of educating, acting or producing social change. This method promotes the engagement of all stakeholders throughout the research process, from problem definition, data collection and analysis, to the dissemination and use of findings to help promote the necessary transformations.

Ångström-Brännström et al. (2018) used the human-centred design (HCD) process and conducted ethnographic research and interviews at three clinics to understand paediatric cancer patients needs and experiences. In the idea generation phase, the clinic was consulted to make sure the projects were realistic and viable. Through this process, the study developed technological interventions containing age-appropriate information about the treatment that was validated by children, adolescents and their parents. In the study by Brocklehurst et al. (2018), the authors used participatory design and experience-based co-design (EBCD) with elderly. The researchers carried out narrative interviews with patients, focusing on their care experiences, as well as interviews with the service team and ethnographic observations.

Summarising this category, authors assess wellbeing through self-confidence, self-esteem, self-worth, quality of life, and general health. User participation in the research process seems to be characterised by the possibility of deeply engaging people in micro (individuals) and macro-levels (community).

## 4.2 WELLBEING FOCUSED ON THE NATURE AND QUALITY OF INTERACTIONS

Some authors relate the concept of wellbeing to the nature and quality of interactions. Westhorp et al. (2016) investigate communication difficulties between employees and clients with a lower level of literacy, developing interventions based on theories of self-determination and embo-



died simulation. Gill et al. (2018) identified that external factors to the individual were as important to their overall sense of wellbeing as factors that sustain their physical needs. For the authors, quality of life is determined by psychological wellbeing, including the social and family dynamics, as well as the acceptance of their need to request assistance. Baek et al. (2015) portray the concept of an organization's wellbeing through a change in services, seeking to increase people's resilience to improve relationships by creating new social and operational values. Table 3 indicates papers and participatory methods classified in this category.

Table 3: Participatory design methods (excluding case studies).

Concept of wellbeing	Papers	Design methods
Wellbeing focused on the nature and quality of interactions	Westhorp et al. (2016)	Realistic action research and co-design
	Baek, et al. (2015)	Collaborative Services (Design for Social Innovation)

Source: authors.

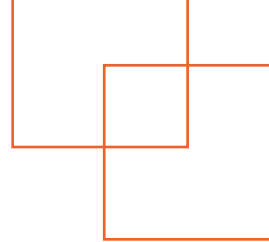
Westhorp et al. (2016) integrated action-research with methods extracted from the co-design services field (Steen et al., 2011). The "realistic action-research" method is cyclical and consists of stages of diagnosis, planning, evaluation, and specification of findings in realistic terms (for whom, in which contexts). Within this process, the improvement of a service is a result of the collaboration between the research team and the users.

Baek et al. (2015) used the concept of a system with a continuous positive feedback loop between the social and technical dimensions of the design process, and the solutions. The authors used the collaboration among all parties affected by a problem, naturally fostering social networks. This active and willing process of people involved in the joint production of solutions was called a collaborative service, which differs from other services in its relational qualities (e.g. trust, intimacy and friendship).

In this second category, wellbeing has been treated as a result of the communication dynamics of organizations, families, and societies. A systemic perspective was often observed in these studies, including collaboration in cycles of many stages of design processes.

### 4.3 WELLBEING RELATED TO ENVIRONMENTAL FACTORS

Smith (2016) studies the wellbeing of users of maternity services (mothers, relatives) and hospital staff. The author indicates that wellbeing



may be improved both by services and hospital structure. Table 4 indicates the paper and participatory method classified in this category.

Table 4: Participatory design methods (excluding case studies).

Concept of wellbeing	Papers	Design methods
Wellbeing related to environmental factors	Smith (2016)	Participatory Design

Source: authors.

Smith (2016) used the LEAN methodology, which consists of five steps to think from conception to action: value, value-stream, flow, pull, and perfection. To implement these principles, the application of Lean 3P was used, which integrates a set of methods and tools, being composed of three phases: (1) scope and planning; (2) participatory time-out design workshop involving clinical staff, users, administrative staff and architects; and (3) monitoring and implementation.

Even though environmental factors are common in Design for wellbeing, only one was observed was observed in this systematic review, which is focused on service design.

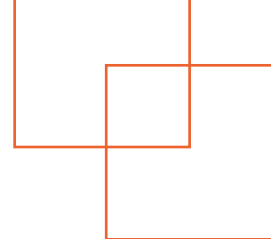
#### 4.4 WELLBEING AS AN AIM OF SERVICE IMPROVEMENT

Some authors do not conceptualize wellbeing within their studies. It is commonly mentioned as the ultimate goal and a consequence of improvements in the service provided to its users. Van Zwanenberg (2009), e.g., considers wellbeing as one of the principles that mental health plans and their implementation must promote. In the study by Wye et al. (2008), wellbeing is also not directly addressed, and it is understood as a consequence of service improvement. Wärnestål et al. (2017) seek to promote the wellbeing of children through cancer care, using personas in the design process to promote empathy, but concepts are also not explored. Finally, Hobson et al. (2018) aimed to improve the wellbeing of people with motor neuron disease by simply addressing their needs. Table 5 indicates papers and participatory methods classified in this category.

Table 5: Participatory design methods (excluding case studies).

Concept of wellbeing	Papers	Design methods
Wellbeing as an aim of service improvement	Wärnestål et al. (2017)	User-centred design and participatory design
	Hobson et al. (2018)	Co-design and user-centred design
	Van Zwanenberg (2009)	Co-creation

Source: authors.



Wärnestål et al. (2017) used user-centred Design (UCD) approaches and participatory Design techniques. The process involved interviews and design workshops with users (children and parents) and other stakeholders. As a result, they created three personas which model behaviours, attitudes, and goals of three user archetypes to be used in service development.

Semi-structured interviews and co-design workshops were used by Hobson et al. (2018). Their study employed design tools such as user journey and personas, with users, professionals (clinicians and user experience specialist), and a user-centred design specialist. They also carried activities to better understand the interaction of patients with the design, trying to find possible limitations. Van Zwanenberg (2008) adopted a co-creation method, which confers flexibility to address both individual and collective needs in the development of a leadership program. Facilitators of design activities were recruited from within the organization in study, and they were provided with training to lead the design process.

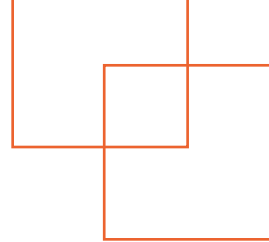
In sum, wellbeing was addressed as an expected result of service delivery. The authors seem to assume that, fulfilling user needs, wellbeing may be improved. As in most studies, user participation was a constant, both to assess user experience and to generate design solutions.

## 5 CONCLUSIONS

This research aimed to understand the relationships between service design and wellbeing in the current research. Results show that most papers are authored by European researchers, focus on healthcare, and adopt user participation in their methods. The 13 papers analysed were grouped into four categories. Even though the papers allowed categorization, we believe these four categories can inspire an integrated view of wellbeing in service design studies. Some lessons can be learnt from them: future studies can address psychological aspects of wellbeing, relationships across different actors (organizations, families, and societies), environmental variables, and use wellbeing as an expected outcome of service improvement. It is relevant to highlight, as seen in item 2, that wellbeing is not an ephemeral experience. It is long-lasting, what makes the idea of considering wellbeing as a simple reaction to services well provided quite limited.

In all categories, studies adopted user participation in the research process, often employing a systemic view on the design problem with





stages organised in cycles. In service design, participatory methods represent an important contribution to promoting a connection with users and immersion in the contexts being observed. Some studies have described the use of co-creative processes, enabling their “target audience” to contribute to the development and/or improvement of provided services. Such studies demonstrate the importance of understanding needs and experiences from the perspective of service stakeholders, not only by involving users, but also service providers, experts, and others. By doing this, they promote an in-depth vision of the service, directed to developing solutions and benefiting users throughout service use.

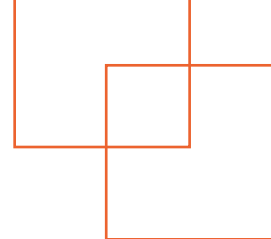
This systematic review focused on analysing articles found in specific databases. They should be written in English and peer-reviewed. This limitation of scope may have caused the exclusion of papers published in other languages in other continents (e.g. Spanish and Portuguese). It also adopted certain words in the searches made and did not include particular studies potentially described in by more specific keywords (e.g. education and wellbeing, and primary care and wellbeing). Therefore, there are many opportunities to develop further studies to review a broader diversity of papers.

The low number of articles that relate service design and wellbeing demonstrates that the topic is still poorly explored, at least in an explicit way, in their research aims, titles, and keywords. The last category (wellbeing as an expected outcome of service improvement) provides a clue to understand why only a small number of papers was identified: it seems common to assume that wellbeing is achievable by simply providing services that fulfil user needs. Therefore, it is possible to assume that there is a lack of clear theoretical frameworks to analyse wellbeing in service design studies. Only one study clearly defined a theoretical line of service design based on design for social innovation.

It was possible to identify the lack of studies on service design and wellbeing oriented towards the reality of Latin America and Africa, as observed in Figure 1. These continents certainly need new strategies for the improvement of the population’s wellbeing and present design opportunities in areas such as public and social service.

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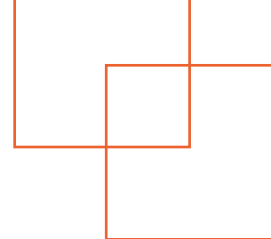
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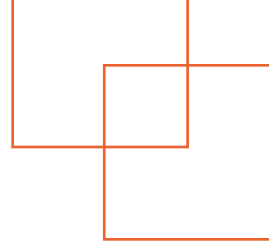
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**Received: March, 2020**

**Accepted: April, 2020**