Social Science & Medicine 78 (2013) 113–124

Contents lists available at SciVerse ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

"I'm always entirely happy when I'm here!" Urban blue enhancing human health and well-being in Cologne and Düsseldorf, Germany

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ARTICLE INFO

Article history:
Available online 12 December 2012

Keywords:
Germany
Urban blue
Therapeutic landscape
Water and health
Well-being
Cities
Environmental health
Urban planning

ABSTRACT

Water is one of the most important landscape elements. In settled areas, planners rediscovered urban blue in the form of rivers as a soft location factor in post-industrial times. Although the recognition of the need for recreational or 'healthy' places like urban green or urban blue in cities is increasing, current urban planning is mostly conducted without taking beneficial health issues into account. In this paper an extended concept of therapeutic landscapes is used to analyse two promenades on the river Rhine in the centres of two German cities (Cologne and Düsseldorf). A complex of qualitative and quantitative methods from diverse disciplines is applied to obtain a multi-dimensional image of salutogenic health processes. The results show that the promenades are favourite places to spend leisure time and to engage in recreational activities, in addition to providing restoration from everyday stresses. Water is a strong predictor of preference and positive perceptive experiences in urban environments. Users of the promenades also report strong emotional attachments to the place. Urban blue space may be interpreted as a therapeutic landscape in various ways. The study forms a contribution to planning issues, particularly considering benefits for human health, and enhances current research concerning therapeutic landscapes.

Introduction

Historically, cities are important for human development, creativity and growth. The United Nations (2010) stated that since 2009 the world population is proportionately more urban than rural. In developed regions, 75 per cent of the inhabitants live in urban areas and this will reach 86 per cent of the population according to the report's projection for 2050. As a consequence, urban areas must provide adequate surroundings for people to live in. Urban areas are the places where people spend most of their time and therefore these places should form a healthy environment and support human well-being (Dye, 2008). In this paper we assess and discuss an environment in cities that supports health using a case study: urban blue spaces.

Therapeutic landscapes

The relationship between landscape and health issues has already been addressed in several studies (Abraham, Sommerhalder, & Abel, 2010; Frumkin, 2003; Maller, Townsend, Pryor, Brown, & St Leger, 2005). Gesler's (1992) concept of therapeutic landscapes and subsequent developments helped to systematically investigate the links between health and landscape. It has been recognised as a mixture of both non-pathogenic health concepts and health geography's perception of the cultural turn (Kearns & Joseph, 1993). Gesler and Kearns defined different aspects of a therapeutic landscape including physical, social and spiritual environments, which are based on individual or community experiences (Gesler & Kearns, 1998, 2002a, 2002b). Gesler's case studies primarily investigated places clearly dedicated to healing, like Epidauros in Greece, Lourdes in France or Bath in the UK and recognised especially the physical and spiritual environment regarding naturalistic and humanistic epistemology (Gesler, 1993, 1996, 1998). In the late 1990s, the focus on traditional healing landscapes was recognised to be just one aspect of therapeutic landscapes (Williams, 2007). Subsequent studies broadened the use of the concept and also addressed non-traditional healing landscapes, such as home environments (Williams, 2002) or summer camps for children (Kearns & Collins, 2000; Thurber & Malinowski, 1999). To date, therapeutic landscape research focuses increasingly on supportive environments and everyday sites of varied therapeutic value (Williams, 2009) and therefore on urban environments (Masuda & Crabtree, 2010; Milligan, Gatrell, & Bingley, 2004; Parr, 1999). Landscapes have been identified as being

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http://dx.doi.org/10.1016/j.socscimed.2012.09.047

both health-promoting and health-limiting at the same time (Collins & Kearns, 2007; Milligan, 2007).

Health in urban landscapes

Despite there being easier access to social and health services in developed urban areas compared to their rural counterparts (Riva, Curtis, Gauvin, & Fagg, 2009; WHO, 2010), urban living has long been negatively associated with health. The most striking health issues in urban areas are the results of unhealthy lifestyles, such as low physical activity levels or drug use (McGinnis & Foege, 1993). The effects attached to urban areas are consequently stress and obesity, resulting in an increasing number of chronic diseases such as diabetes mellitus, depression and cardiovascular illnesses like hypertension (Dora & Phillips, 2000; Passchier-Vermeer & Passchier, 2000; WHO, 2009). These challenges are intensified by urban traffic and crime (Krieger & Higgins, 2002; Peden et al., 2004; WHO, 2008), a loss of space for recreational use due to urban sprawl and climatic and demographic change (Campbell-Lendrum & Corvalán, 2007; McMichael, Woodruff, & Hales, 2006).

In this paper the health definitions of the World Health Organisation (WHO) and the concept of salutogenesis are generally used. The WHO defined health in 1948 as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1948). In the Ottawa Charter for Health Promotion health was defined as "a resource for everyday life, not the objective of living. Health is a positive concept emphasising social and personal resources, as well as physical capacities" (WHO, 1986). This definition underlines Antonovsky's concept of salutogenesis (1979), which, contrary to pathogenetics, takes account of the reasons and circumstances for the creation and preservation of health. Health is defined on a continuum, the edges of which form total health on one side and disease on the other. The location of a person on the continuum represents his/her personal health status. The salutogenic concept as the basis for health promotion considers individual and corporate resources for health, well-being and quality of life as central requirements to prevent health risks and potential illnesses (Antonovsky, 1987).

Urban blue and public space

The term urban blue (Kistemann, Völker, & Lengen, 2010; Völker & Kistemann, 2011) used in this study covers all visible surface waters in urban areas. The recent trend to consider water as an important element of landscape is also expressed in the embodiment of settlement areas in which great importance is attached to water (Fagnoni, 2009; Syme & Nancarrow, 1992). The intensification of the phenomenon of urban waterfronts in recent decades in Europe and its widespread importance for urban development has led to an increasing academic interest in this issue. Researchers have addressed the theme of "behaviour and environment" with regard to public spaces in geography (Carr, Francis, Rivlin, & Stone, 1992).

Public space is produced by citizens. They express their attitudes in these places, use them for their own purposes and make personal demands and recommendations. Therefore public space becomes a meaningful public resource (Goheen, 1998). In Greek and Roman times public spaces were defined in the form of streets, which provided movement and safety, as well as public places such as squares, as precious centres for public life. In the 19th century, the construction of boulevards and landscape parks focussed on the creation of a more beautiful and healthy urban environment for the wealthier people and the growing working class in cities. Later, urban public spaces were created emphasising the growing recreational needs of the middle class due to an increase in leisure time (Carr et al., 1992). Waterfronts have become part of the historical tradition of public spaces in cities, following the decline of harbour sites in urban areas (Hall, 1991; Hoyle & Pinder, 1992) since the 1970s in North America (e.g. Boston, Baltimore, Toronto) and the 1980s in Europe (e.g. London, Edinburgh). From this time onwards there has been a clear trend in (urban) planning for waterfront redevelopment and towards water and sites containing water (Breen & Rigby, 1996; Marshall, 2001). Cities reclaimed these places for public access and use and have accomplished major transformations. These efforts contained at first waterfront fairs and festivals, to attract citizens to experience such places (Carr et al., 1992). The improvement of public spaces has subsequently been primarily focussed on public welfare, but definite health issues have not been explicitly addressed.

With regard to current research on water in cities, the relationship between water and health is thoroughly discussed in the fields of environmental ecology, toxicology and microbiology (Brebbia & Laituri, 2011; WHO, 2011), but not explicitly in the research field of urban blue and human well-being. Only a few studies in environmental psychology deal with the psychological benefits of water in the city (Karmanov & Hamel, 2008; White et al., 2010).

Although there is an increasing need for healthy places like urban blue in cities, these spaces are often not recognised as a beneficial health factor by planners and regarded at best as a by-product of green spaces. Our study is therefore the first to comprehensively explore the beneficial health outcomes and well-being created by urban blue, using an innovative application of the concept of therapeutic landscapes. Our aim is to gain a better understanding of the health impacts of healthy environments in the urban context. The questions addressed by the study are:

- Which health-related components can be identified in urban blue space?
- What is the impact of urban blue on human health and well-being?
- Which implications are there for future planning of blue space?

The subsequent sections are ordered as follows. In the Methods section Pred's theory of the contingency of space is explained. Thereafter, a two-dimensional matrix resulting from an enhancement of the therapeutic landscapes concept is thoroughly illustrated. The grounded theory approach used in this study is described and then followed by a description of the geographical, ethnographical and socio-psychological methods used in the case study.

The Results and Discussion section presents the results of pedestrian counting and the findings of health-enhancing and health-limiting aspects for each of the four dimensions of appropriation. The findings are then merged in a synoptic approach. Finally, study limitations are identified and we conclude by summarising the health relevant aspects and present future research needs.

Methods

In this study we follow Pred's theory that space is contingently conceptualised, incorporating theories of structuration processes and time geography as well as human geography (Pred, 1984). The theory explains that power, practice and social structure are expressed locally. The reproduction of social and cultural forms and the transformation of nature are process-related and become continuously one another as well as time-space specific practices and power relationships (Pred, 1984). According to this background, our study consequently isolates the specific truths of place, knowing that place-specific social and cultural reproduction,