THE PERFORMANCE OF URBAN ECOSYSTEMS
– URBAN NATURE PROMOTING HUMAN HEALTH

Sinja Gatting (M.A.) & Prof. Dr. Claudia Hornberg
Bielefeld University
Faculty of Health Sciences
Department ‘Environment & Health’

October 05-06, 2016 | Island of Vilm (Mecklenburg-Vorpommern, Germany)
BfN Expert Workshop: Urban Biodiversity and Health in the Face of Climate Change
THE PERFORMANCE OF URBAN ECOSYSTEMS
– URBAN NATURE PROMOTING HUMAN HEALTH

Coordinating author: Claudia Hornberg

Co-authors: Reinhard Beyer, Thomas Classen, Tobias Herbst, Mathias Hofmann, Jasmin Honold, Elke van der Meer, Silke Wissel & Henry Wüstemann

With contributions by: Leonie Fischer & Ingo Kowarik
THE PERFORMANCE OF URBAN ECOSYSTEMS
– PROTECTING HEALTH & IMPROVING QUALITY OF LIFE

THE TEEB PROJECT
The Economics of Ecosystems & Biodiversity

The TEEB DE report online:
www.naturkapital-teeb.de/presse/aktuelle-meldungen/meldung/article/180.html
How the environment & health are related

How the environment & health are related

© S. Gatting
How the environment & health are related

Promote

Protective factors
Should ENHANCE

Risk factors
Should DECREASE

Health promotion

Prevention

THE ENVIRONMENT

Source: Own diagramme, with ideas from Antonovsky (1997), Bauer & Bittlingmayer (2016), BZgA (2009), Hurrelmann, Laaser & Richter (2016)
THE PSYCHOLOGICAL EFFECTS OF URBAN NATURE
**Psychological effects of urban nature**

- Short-, medium- & long-term effects
- Nature & individual factors:
  - spending time in a natural environment
  - looking at the green from a window
  - looking at pictures of natural scenery

**Consequences**

- sick less often
- not as tired
- increased productivity

*Berman et al. (2008); Berto (2005); Bringslimark et al. (2007); Fjeld (2000); Frumkin (2003); Harting et al. (2003); Kaplan (2001); Matsuoka (2010); Tennessen & Cimprich (1995)*
Psychological effects of urban nature

- Greater satisfaction with the environment at home & at work
- This influences one’s satisfaction with life
- The general well-being is improved

Positive correlations with...
- decreased domestic violence
- greater satisfaction with the job
- decreased likelihood of quitting the job

Amérigo & Aragonés (1997)
Aries et al. (2010)
Bonaiuto et al. (1999)
Kaplan (2001)
Kuo & Sullivan (2001)
Kweon et al. (2007)
Leather et al. (1998)
**Psychological effects of urban nature**

- Faster rate of healing

**Healing after surgery**

**View from the patient’s room / Plants in the room**

**Green environment:**
- a significantly lower need for painkillers
- improved well-being
- shorter stay in hospital

*Park (2006)*
*Ulrich (1984)*
Physical effects of urban nature
Physical effects of urban nature

Looking at 24 diseases / illnesses

Persons not living near a green area exhibited significantly more...

– cardiovascular diseases
– diseases of airways
– musculo-skeletal disorders
– psychosomatic disorders
– psychological & psychiatric disorders

Maas et al. (2009)
Physical effects of urban nature

There is a significant correlation between increasing biodiversity & a decreasing number of people suffering from allergies

Hanski et al. (2012)

There is a potential for synergies between health & nature protection

An important point with greening urban areas: Only a few plant species are responsible for about 90% of all pollen allergies...
Physical effects of urban nature

Risks due to the climate change: Stress from extreme heat
- Impact on morbidity & mortality

Groups at risk:
- older people
- people working or exercising in the open
- heat-sensitive individuals

Urban green & blue areas:
- contribute to cooling the immediate environment (microclimate)
- potentially decrease air & noise pollution
- constitute a resource for lowering the burden of disease (BoD)
Physical effects of urban nature

Regular moderate **physical activity** promotes **good health**

- The health effects...
  - are many
  - are specific to the various stages of life
  - can be demonstrated throughout a person’s life

- **Green areas** are hubs for **walking & exercising**

- The role of different landscape elements & characteristics as well as conditions are **specific** to **different population groups**
QUANTIFICATION & ECONOMIC ASSESSMENT OF THE IMPORTANCE OF URBAN NATURE FOR HUMAN HEALTH
CONCLUSIONS & RECOMMENDATIONS FOR HEALTH-PROMOTING URBAN DEVELOPMENT
Urban green areas have a positive impact on human health & are an increasingly important topic in urban development.

Supporting urban nature as a way to maintain & promote health is a responsibility of the communities in particular.

Planning & implementation measures should...

- include interdisciplinary cooperation
- consider health aspects from the start
- include the local residents early on
- take into account needs specific to population groups & local inequalities
- consider & further develop existing quality criteria – a need for more research

Conclusions & recommendations
THE PERFORMANCE OF URBAN ECOSYSTEMS
– URBAN NATURE PROMOTING HUMAN HEALTH

THANK YOU
FOR YOUR ATTENTION

Sinja Gatting (M.A.)
E-Mail: s_gatting@uni-bielefeld.de

Prof. Dr. Claudia Hornberg
E-Mail: claudia.hornberg@uni-bielefeld.de
REFERENCES


REFERENCES


• BUNDESZENTRALE FÜR GESUNDHEITLICHE AUFKLÄRUNG [BZgA] (Hrsg.), 2009. Schutzfaktoren bei Kindern und Jugendlichen. Stand der Forschung zu psychosozialen Schutzfaktoren für Gesundheit (Forschung und Praxis der Gesundheitsförderung Nr. 35), Köln.


REFERENCES


REFERENCES
