Available online at www.sciencedirect.com

Public Health

journal homepage: www.elsevier.com/puhe

Original Research

Differentiating health statuses using positive health indicators in an occupational context

N.T. Burkert [a,*], R. Raml [b], N. Beier [b], W. Freidl [a]

[a] Institute of Social Medicine and Epidemiology, Medical University Graz, Graz, Austria
[b] Institute for Empirical Social Research, Vienna, Austria

ARTICLE INFO

Article history:
Received 16 April 2014
Received in revised form
30 December 2014
Accepted 14 May 2015
Available online 16 June 2015

Keywords:
Health statuses
Positive indicators
Multiple impairments
Psychological well-being
Burnout

ABSTRACT

Objectives: To identify different health statuses beyond the dichotomy of 'health' vs 'illness'. To achieve this, positive indicators based on current scientific definitions and concepts were constructed.

Study design: Data were collected between 2008 and 2010 in a nationwide representative cross-sectional survey.

Methods: Data for approximately 11,800 wage or salary earners were analysed. Health statuses were modelled using hierarchical cluster analysis, and the relationships between clusters and working conditions were tested using discriminant analyses.

Results: According to response patterns in the various health dimensions, four health statuses were found: individuals who were holistically healthy; individuals with multiple health impairments; individuals with stagnating potential for development; and individuals with higher tendency to wear out.

Conclusions: The use of positive health concepts enables better differentiation of health statuses. Under existing working conditions, it is possible to identify group-specific needs for the working population, and to derive appropriate measures as part of workplace health promotion.

Introduction

Current health definitions and concepts construct a positive, multidimensional and holistic understanding of health.[1,2] However, they focus on negative aspects in terms of physical affliction and psychological impairments. Positive aspects of health have rarely been operationalized or implemented in applied research to date.

'Work is a basic human need and health-promoting factor.'[3] Nevertheless, occupation includes both health-enhancing resources on the one hand, and health-damaging hazards on the other hand.[4] One might assume that the relationship is mediated by health behaviour, but the Helsinki Health Study showed that this relationship scarcely exists.[5] If work implies diverse deficiencies, a basic need for the development of a person is missing, which may ultimately lead to ill health.[3]

* *Corresponding author*. Institute of Social Medicine and Epidemiology, Medical University Graz, Universitaetsstrasse 6/I, A-8010 Graz, Austria. Tel.: +43 316 380 7764; fax: +43 316 380 9665.
E-mail address: nathalie.burkert@medunigraz.at (N.T. Burkert).
http://dx.doi.org/10.1016/j.puhe.2015.05.015

A growing body of evidence shows that working conditions have become more and more stressful.[6] Stress is quite an ambiguous term that has important medical, behavioural and psychological consequences for health.[7] One of the most frequently used models to measure deficits in the occupational context is the Effort–Reward Imbalance (ERI) model. The ERI model supposes that stress at work results from an imbalance between the recognition of extrinsic effort (e.g. work obligations and physical demands of the job) and extrinsic reward (e.g. financial compensation, personal and social recognition, and other forms of personal satisfaction).[8] ERI has a negative impact on work ability in the long term,[9] and is associated with low self-ratings for health, and short- and long-term sickness;[10–12] increased risk of coronary events; and reduced cardiovascular responsiveness.[13] While job demands are related to physical symptoms and are positively related to burnout,[14,15] job resources are associated with motivational factors.[16] Moreover, the psychosocial working conditions are conducive to the risk of wearing out,[17] and work-related as well as socio-economic factors have an influence on retained work ability.[18] Personal factors that affect self-rated health are occupational position and education level of the person.[19] The prevalence of poor health is highest in individuals with high work stress and low socio-economic status.[20,21] Moreover, negative workplace conditions have a greater impact on mortality and morbidity among the lower social classes.[22,23]

Specific health constructs seem to reflect a general strain factor concerning working conditions.[24] Based on the health definition of the World Health Organization,[2] concrete concepts for positive health indicators are: (1) social orientation, (2) social participation, (3) meaningfulness, (4) desire for development and growth, (5) self-efficacy, and (6) subjective well-being. The aforementioned indicators are basically conceptualized as independent from physical and psychological impairment.

This study focused on the combination of positive and negative aspects of health in people in the occupational context. The aim was to determine if additional health statuses exist, the appearance of which deviates from the two 'classical' clusters of: (1) individuals showing no or very low psychological or physiological impairments and strong positive indicators (i.e. healthy individuals); and (2) individuals showing high psychological or physiological impairments and only a few positive indicators (i.e. ill or impaired individuals). A third cluster (Cluster 3) of individuals showing low prevalence rates for physiological complaints combined with a limited number of positive indicators, and a fourth cluster (Cluster 4) of individuals showing an increased tendency to wear themselves out, and high cognitive and emotional involvement with their work as well as slight symptoms of psychological overstrain were assumed.[25,26] Identifying different health statuses as well as protective factors and working conditions associated with a particular cluster would be revealing. Every new cluster for which positive indicators play a certain role in terms of a relevant deviation from the norm is considered as an additional possibility for differentiation. Therefore, the central question of this study was to find out how positive indicators contribute to a more differentiated description of health statuses in the occupational context.

Methods

Participants

This empirical study was conducted from early 2008 to late 2010, and is part of a nationwide representative survey. The statistical population is the working population of Austria aged ≥16 years, with the restriction that at least part of the interviewees' income stems from employment. The sample size was approximately 11,800 people. Interviewers and interviews were controlled in accordance with international standards, and the interviewees within the households were selected at random (Kish selection grid). As a result, the structure of interviewees is largely representative for Austrian people in employment. The random sample consisted of 45% women and 55% men. Seventeen percent of subjects reported compulsory education as their highest level of education, 43% reported completion of an apprenticeship, 13% reported A levels (school leaving certificate) and 13% reported a university education. The age distribution was: 26%, ≤29 years; 41%, 30–44 years; 31%, 45–59 years; and 2%, ≥60 years. Thirty-three percent of the interviewees were blue-collar workers, 51% were white-collar workers and 16% were civil servants.

Materials and procedure

The Institutional Ethical Board approved this study. The computer-aided interviews were conducted personally in the households of interviewees by the Institute for Empirical Social Research. Various health indicators were collected by asking individuals about physical, psychological, social and spiritual health. Furthermore, subjectively perceived health, including strain, and scope for health action were assessed (Table 1). Detailed data on working conditions were gathered by means of a questionnaire with an average duration of 15 min. Conditions included: job opportunities, economic situation, work–life balance, social status, working climate, career aspects, working environment and psychological demands.

Data analyses

Various health indicators were used to form homogenous and reliable sum indices with discriminant variables (Table 1). Based on these indices, hierarchical cluster analysis (WARD's method with quadrated Euclidic distance) was used to constitute groups showing similar patterns for these variables. The number of clusters to be constituted was determined using the variance criterion of the WARD method, which increases sharply in the merging step from the four-cluster to the three-cluster solution. The number of clusters to be constituted is thus four. For cluster interpretation, both mean value profiles (cluster centres, *t*-values as deviation measures of the group mean value from the overall mean of a characteristic) and the distribution of variables used for clustering within the groups in relation to the overall distribution (*F*-values) were used. The clusters are distinguished by high *t*-values (large deviations between the cluster centres) and low *F*-values (considerably <1, low distribution of