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Health-related Behavior over the Course of Life in the Czech Republic

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Abstract

This study presents partial results of an extensive research project (Grant Agency n. 13-19808S). The aim is to map health-related behaviour over the course of life in the Czech Republic and to examine how four age groups (20 – 35, 36-50, 51 – 65, 65 and older) differ in components of their health-related behaviour. The research sample consisted of 1,268 respondents (69 % women) between 20 and 93 years of age. For rating, our research used the Health-related Behaviour Scale (Dosedlová, Slováčková, Klimusová, 2013). Via Principal Component Analysis (with Varimax rotation), we extracted five factors of health-related behaviour. The means of factor scores of health-related behaviour in the individual age groups were compared via General Linear Model.

The five factors explaining 44 % of the total variance of the 34 initial items of health-related behaviour are as follows: healthy diet, mental health, daily regimen, physical activity, and avoidance of addictive/harmful substances. The four age groups (20 – 35, 36 – 50, 51 – 65, 65+) differ significantly in all health-related behaviour factors with the exception of mental hygiene. With increasing age, individuals tend to increase their healthy food intake, keep daily regimen and avoid addictive substances; however, the amount of physical activity decreases with age.

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Keywords: health-related behaviour; life span

1. Introduction

Today, we look not only for physical causes behind health, illness or death, but also consider the psychological, behavioural and social factors which influence each other via complex conditional relations. McGinnis & Foege (1993) state that within the Euro-American culture, approximately 50 % of deaths caused by the top 10 most common causes of death are related to behaviour endangering health (smoking, unhealthy regimen, alcohol and drug

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abuse, dangerous sexual practices leading to HIV/AIDS transmission). Lifestyle and health-related behaviour is thus starting to receive more attention from the side of individuals striving for better health, as well as from government institutions establishing the leading trends in health policy.

Vickers et al. (1990) have created a hierarchical model of health-related behaviour:

Preventive habits

Wellness maintenance – activities and actions performed for the purposes of a healthy lifestyle. These include healthy regimen, recommended fluid intake during the day, regular physical activity, dental hygiene etc.

Accident control – effort to reduce the likelihood of an accident or injury, or to limit their effects. This group includes regular car servicing, repair of damaged items in the household, knowledge of the principles of first aid, remembering the numbers of emergency phone lines etc.

Risk-taking habits

Traffic-related risk – awareness of the risks involved in being a participant in traffic, whether as a driver, passenger, cyclist or pedestrian. Examples are fast driving, non-compliance with traffic rules, driving without a seat belt or a baby car seat, inattentive crossing of the road.

Substance risk-taking – awareness of the risks of using addictive substances (alcohol, nicotine, volatile substances – toluene, gasoline, hallucinogens and other drugs).

In our study, we want to focus on the amount of health-benefiting or health-harming behaviour practised from the onset of adulthood until old age. We study four cohorts of Czech adults (Vágnerová, 2000, 2007; Langmeier, Krejčířová, 2006):

- young adulthood (20 – 35)
- middle adulthood (36 – 50)
- mature adulthood (51 – 65)
- old age (65+)

1.1. Health-related behaviour from early adulthood to old age

Adulthood is primarily determined biologically; the time of reaching adulthood is determined by maturity, i.e. age. Psychosocial definition of adulthood is more complicated as it is not usually clearly temporally localized. Independence, relative freedom of personal decisions and behaviour associated with responsibility for one's own actions could be considered the most important psychological signs of adulthood.

In recent decades, the process of achieving adulthood has become longer and more complex – the individual constituent steps are drifting further apart and the variability of their timing is increasing. These changes are related to changes in the labour market environment, lengthening of the studying period, as well as changes in family behaviour and value orientations of young people. According to the American psychologist Arnett (2004), a new stage of life between adolescence and young adulthood is forming in developed societies – emerging adulthood. This period describes a kind of in-between stage: the young people are not adolescent any more, but they feel they are not adults yet. According to Arnett, the period of emerging adulthood is a time of experimentation, searching for an identity and thus a time of relatively high instability. Emerging adults are characterized by an unwillingness to plan and accept long-term commitments.

Young adulthood (20 – 35 years old) is definitely a period of high hopes, optimistic expectations and blossoming. The young person is realistically extroverted and believes both in their own abilities and in their luck. The perspective of rise and personal progress seems just as endless as their own old age and death seem unimaginable. This prevailing subjective feeling of solid health, invulnerability and at the same time enjoyment of joint activities with their peers can lead to an irregular lifestyle, frequent errors in regimen and experiments with addictive substances. At the same time, it is a period full of vitality and stamina, which is utilized in sports and other physical activities.

Middle adulthood (35 – 50 years old) is called the noon of life. The central themes of this period are family life and professional career. It is a period of high productivity and good health, but the first signs of ageing start to show at the same time – a loss of certain advantages which leads to the realization of one's own vulnerability and of life's limitations. From a social perspective, these consequences (mainly in the loss of physical attractiveness) affect

women more than men (Vágnerová, 2000). The midlife crisis associated with realizing the time limitations of one's own life is also reflected in the area of identity. Identity needs to be re-evaluated and an alternative has to be found which would also be acceptable for the period of ageing. The content of the parental role changes, as does the relationship to one's parents. People of this age category must accept the dominant role as a generation responsible for not only adolescent children but also ageing parents (Vágnerová, 2000).

According to Vágnerová (2007), today's generation of 40 year-olds is highly sensitive to the loss of one's productivity and physical attractiveness. The effort to maintain the earlier attractiveness and productivity in this period can lead to an increase in health-benefiting behaviours.

The age of 50 is currently considered a threshold which definitively marks the beginning of ageing. Basic sensory functions weaken (sight and hearing), physical strength and movement coordination decreases, health problems start appearing more often. Women enter the menopause phase associated with a definitive loss of fertility. Mature adulthood (51 – 65 years) brings about the first typical signs of old age such as wrinkles, grey hair, changes in skin pigmentation and in bodily proportions. The value system changes: the person would like to maintain what is good or at least acceptable. On the other hand, a member of this generation has the most power and responsibility in the professional field. The need for generativity becomes focused on developing the next generation and passing on experience.

In terms of health, people in this age group often increase the amount and frequency of health-benefiting behaviours. For instance, they begin exercising or running to improve their health and fitness and maintain their productivity as long as possible (Vágnerová, 2000).

The end of the mature adulthood period and the onset of old age (65 years and older) is manifests itself by the acceptance of ageing which is then reflected by a change in one's identity. The ageing person can no longer base their identity on biologically conditioned competences. Their own creations, the things they identify with, become an important component of the identity. Retirement concludes the professional role, which has so far been a significant part of the identity. Family becomes that much more important for the self-concept; the birth of grandchildren brings about a shift in generational membership.

Natural biological involution occurs in all people, but at a different pace for each individual. However, illnesses in the elderly inevitably come with increasing severity, often with atypical course of the illness and an increased comorbidity (Čevela, Kalvach, & Čeledová, 2012).

In terms of health-related behaviour, the elderly may often maintain an incorrect diet due to financial reasons, lack of interest in healthy nutrition or due to dietary limitations. The result is often neglecting complete proteins, which along with a decrease in physical activity leads to muscle loss. Sarcopenia can often occur, i.e. a progressive reduction in muscle mass and muscle strength, often arriving along with osteoporosis and loss of bone mass which is responsible for a significant percentage of old age disability (Janssen, Shepard, Katzmarzyk, & Roubenoff, 2004). On the other hand, Sarafino (1990) states that older people are more engaged in taking care of their health with the exception of physical activity, which decreases. At the same time, this higher attention to health-benefiting behaviour could also be explained by the fact that people who have led a healthy lifestyle since youth will be more likely to live to such an old age.

2. Research objective and formulation of hypotheses

The aim of our constituent study is:

- to map the individual elements of health-related behaviour;
- to verify the influence of age and gender on the extent of health-related behaviour practised;
  to discover whether Czech men and women in four age groups (20 – 35, 36 – 50, 51 – 65, 65+) differ in the extent of health-related behaviour practised.

Hypotheses:

H1: Young adults show the highest amount of risk-taking behaviour in relation to their health, i.e. use more addictive substances than other cohorts.

H2: Orientation towards a healthy diet increases with age.

H3: The amount of physical activity declines as age increases.

2. Method

3.1. Research group

Research group consisted of 1,268 respondents (69.3 % female) between the ages of 20 and 93. Half of the group (649 people; 51.2 %) was in the period of young adulthood 20 – 35 (66.8 % female), a quarter (345 respondents; 27.2 %) in middle adulthood 36 – 50 (70.7 % female), 13.7 % (174 people) in mature adulthood 51 – 65 (72.4 % female). The rest of the group consisted of elderly people above 65 years old (100 people, 6.7 % of the group) with 75 % being female. Most of the respondents completed secondary school (57.4 %) or university (35.5 %) level education. In terms of marital status, half of the group was, partially due to age, consisted of single persons (50.4 %); 37.2 % were married, 8.5 % divorced and 3.9 % widowed.

3.2. Methods

The respondents received an extensive questionnaire battery. The present study uses data from the Health-related Behaviour Scale (Dosedlová, Slováčková, Klimusová, 2013).

Based on the content analysis performed during pre-research, we compiled a questionnaire of 45 items mapping individual areas of the regimen (diet, fluid intake, sleep, regularity of the regimen, physical activity, substance abuse, preventive habits and selected elements of mental hygiene). Due to highly skewed distribution, some of the items were excluded from the Principal Component Analysis (the final set consisted of 34 items, see bellow).

3.3. Method of obtaining and processing data

Data collection took place over several months during 2014 up to spring of 2015. The questionnaires were distributed both electronically and in paper form, with young respondents preferring to fill in the test battery on a website, while the older respondents generally chose paper form instead. The respondents were selected and contacted by random selection using e-mails, social networks and personal contacts.

Via Principal Component Analysis (with Varimax rotation), we extracted five factors of health-related behaviour. The means of factor scores of health-related behaviour in the individual age groups were compared via General Linear Model. Calculations were performed using IBM SPSS Statistics software.

4. Results and interpretation

4.1. Analysis of health-related behaviour components

The five factors explaining 44.3 % of total variance of the 34 initial items of the health-related behaviour questionnaire are as follows: healthy diet (13.2% of variance), mental hygiene (9.9 %), daily regimen (8.0 %), physical activity (6.9 %), and avoiding addictive/harmful substances (6.3%).

- F1 Healthy diet (eating fruit and vegetables, whole-wheat bakery products, avoiding unhealthy foods, confectionery, fried foods, lemonades, instant foods and fast food, maintaining a proper ratio of macronutrients in the diet)
- F2 Mental hygiene (optimism, self-esteem, maintaining a good mood, spending free time with friends, social support, performing activities which bring joy)
- F3 Regular regimen (sufficient sleep with a regular time of falling asleep and waking up, sufficient relaxation and rest, time-management of duties, regular breakfasts)

- F4 Physical activity (sport, walking, physical work, hardening off, limiting the use of cars, lifts and other transport, maintaining optimal body weight)
- F5 Avoidance of addictive and harmful substances (avoidance of alcohol, nicotine and light drugs, avoiding smoky areas and harmful substances in consumer goods)

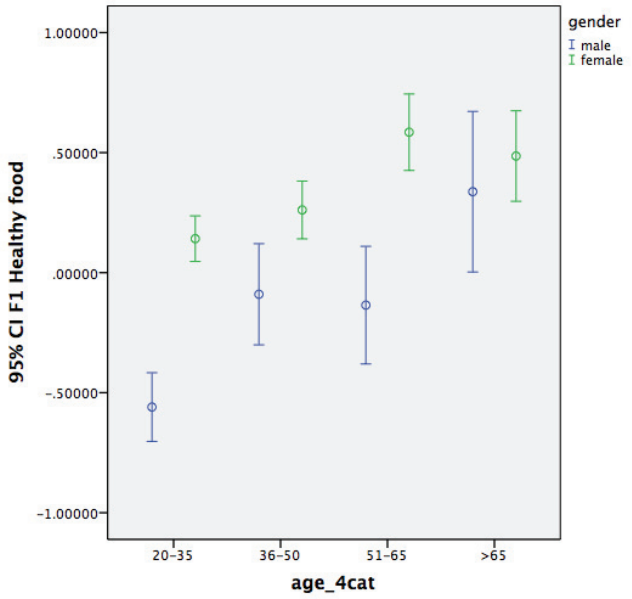
4.2. Health-related behaviour in relation to age and gender

The means of factor scores of health-related behaviour in the age groups were compared using the General Linear Model, with age group and gender as fixed factors. The four age groups (20 – 35, 36 – 50, 51 – 65, 65+) differ significantly in all health-related behaviour factors with the exception of mental hygiene.

4.2.1. Healthy diet

As assumed in hypothesis 2, the orientation towards a healthy diet increases with age. When comparing the means of factor scores of Healthy diet, both main effects have been significant for age group ($F = 14.9$, $p \leq 0.001$) and gender ($F = 33.2$, $p \leq 0.001$), as has the interaction effect ($F = 3.3$, $p \leq 0.05$). The differential formula is observable on Graph 1: the means increase with age, especially for men. Young adult men care very little for healthy diet on average, while in the elderly group, the score means of men and women do not differ.

Graph 1. Comparison of the means of factor scores of Healthy diet in terms of age and gender (95 % confidence intervals)

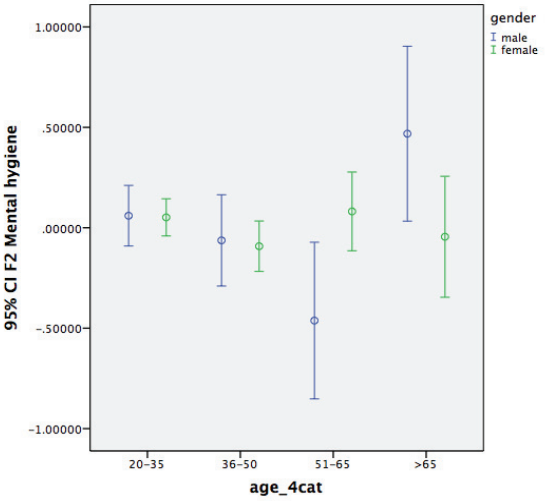


4.2.2. Mental hygiene

Factor scores of Mental hygiene showed no demonstrable influence of age group or gender; the interaction effect, however, was statistically significant ($F = 4.1$, $p \leq 0.01$). As can be seen in Graph 2, the mental hygiene levels do not change much in women over the course of life, while we can observe below-average levels in mature adulthood

and above-average levels in old age in men.

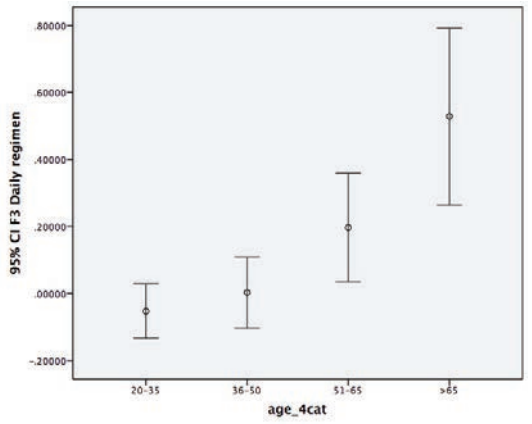
Graph 2. Comparison of the means of factor scores of Mental hygiene in terms of age and gender (95 % confidence intervals)



4.2.3. Daily regimen

When comparing the factor scores for Daily regimen, only the main effect for age has proven significant ($F=11.2$, $p \leq 0.001$). A daily regimen was maintained better in older age groups, especially the elderly, than in respondents in young and mature adulthood (see Graph 3).

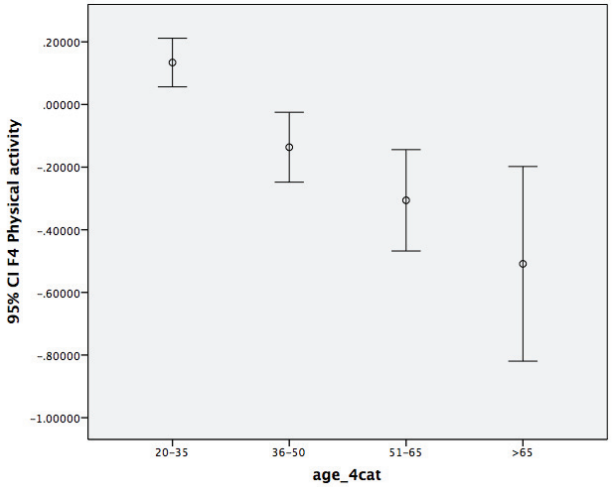
Graph 3. Comparison of the means of factor scores of Daily regimen in terms of age (95 % confidence intervals)



4.2.4. Physical activity

The score means for Physical activity differed only in terms of age (F=13.6, $p \leq 0.001$). As can be seen in Graph 4, physical activity is higher in younger age groups (especially in young adults) when compared to the older age groups.

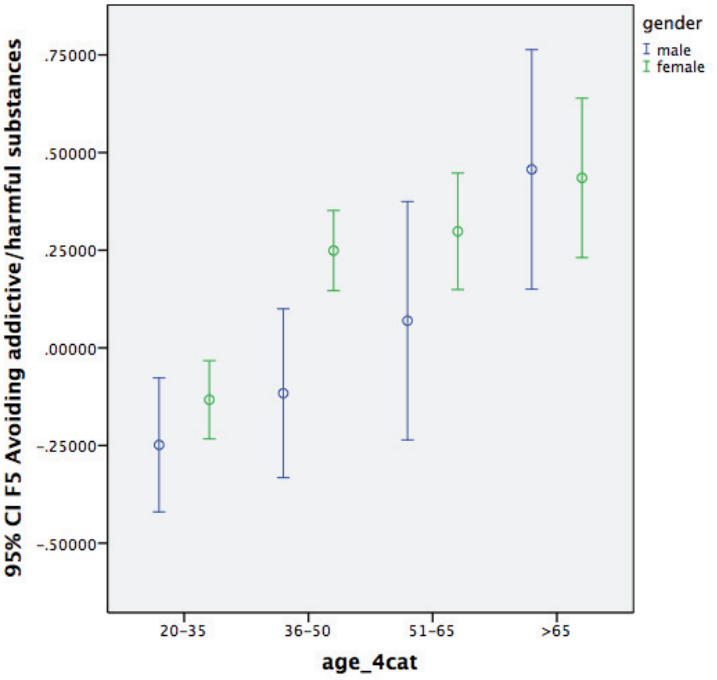
Graph 4. Comparison of the means of factor scores of Physical activity in terms of age (95 % confidence intervals)



4.2.5. Avoidance of addictive substances

The comparison of scores for Avoidance of addictive and harmful substances has shown both main effects as significant – for age (F=11.9, $p \leq 0.001$) and gender (F=3.9, $p \leq 0.05$); interaction was not significant. Addictive substances are least avoided by young adults, the most by the elderly. Women reached slightly higher score means in comparison to men (see Graph 5).

Graph 5. Comparison of the means of factor scores of Physical activity in terms of age and gender (95 % confidence intervals)



5. Discussion

All cohorts of the Czech adult respondents differ in a statistically significant way in terms of the extent of health-promoting and health-harming behaviour practised. The regularity of the daily regimen and efforts to maintain a healthy diet increase with age, while consumption of alcohol, nicotine and other addictive substances diminishes. Physical activity, on the other hand, decreases with age.

Most young people do not yet feel the need to pay attention to their health. On average, they feel well thanks to their youth and they enjoy freedom, spontaneity and discovering new things. The willingness to experiment also carries an increased risk of taking addictive substances, as confirmed by our results. The extent of avoidance of addictive substances is the lowest of all cohorts in this age group, as is the attention paid to healthy diet and regular regimen. These results correspond to our previous findings obtained on a group of university students. We have proven that a total of 60 % of Czech university students have not yet adopted a healthy lifestyle which they would successfully maintain (Slováčková, Dosedlová, & Klimusová, 2008). On the other hand, young adults benefit from the highest amount of physical activity out of all cohorts and also slightly above-average mental hygiene, which reflects in the amount of time spent with friends or on hobbies, as well as in sufficient amounts of rest.

During middle age, the attention to mental hygiene in men decreases and remains at a below-average level until old age, when it increases significantly. This is likely related to high load in work and in family, i.e. with the demands of many (often difficult to reconcile) social roles held by adult men in positions of responsibility during middle and mature adulthood. The amount of mental hygiene does not change much in women during the course of life. Other components of health-benefiting behaviour (except physical activity) increase, with middle-aged adults paying gradually more attention to healthy diet, limiting the consumption of addictive substances and achieving more regularity in their daily regimen. However, physical activity continually decreases.

Based on the results of our cross-cutting research, it can be assumed that the elderly cohort displays the highest amount of health-benefiting behaviour in terms of healthy diet, regular regimen and avoidance of addictive substances. The attention to mental hygiene also reaches the highest values in this group (mainly due to the

increased orientation of men towards this activity), implying that the elderly, due to more free time, again return to their interests and hobbies, meet with their friends and rest more. Only physical activity reaches the lowest level out of all cohorts in this age group.

All the hypotheses set have been confirmed: young adults show the lowest rate of avoidance of addictive substances; attention to healthy diet grows with age while the amount of physical activity decreases.

Our results are in accord with Sarafino (1990), who states that older people are more engaged in caring for their own health with the exception of physical activity, which decreases. The decrease in physical activity is supported by the findings of the European Health Interview Survey of 2014, which confirms a trend in the Czech Republic of gradual decrease in all forms of physical activity, including walking, over the course of life. Physical activity in particular is thus a component of health-benefiting behaviour which should become a target of prevention programs due to its undeniable positive effects on physical and mental health (Leveille et al., 1999; Netz et al., 2005; Fox et al., 2000). Dubbert et al. (2004) list a number of motivational programs to promote physical activity; however, evidence has shown that due to the predominant sedentary lifestyle in the majority of members of the Euro-American culture, these cognitive-behavioural programs have only achieved short-term effects so far.

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