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Determinants of health-related lifestyle. Comparative study of the functioning of young adults in 2003 and 2013

Abstract: *Background – Early adulthood is the developmental stage during which, for the first time, an individual can independently choose their own lifestyle. For the future health of a young adult, it is important that they incorporate healthy behaviors from different health dimensions (somatic, mental, social) into their lifestyle. Analyzing the foregoing issue gives rise to a fundamental question: did intensive social changes experienced after Poland's accession to the European Union lead to changes in different aspects of a healthy lifestyle?*

Method – The presented study involved 504 people. The research data was collected in two separate measurements in 2003 (n = 284) and 2013 (n = 220). Subjects were asked to complete sets of questionnaires which measured: health behaviors, health beliefs, social influence, intention.

Results – Statistical comparison of means tests and regression equations were conducted. Results demonstrate that young adults were similarly engaged in pro-health activities in both 2003 and 2013. A detailed analysis of health lifestyle factors shows that young adults from the 2013 group care more about their diet, physical activity, and more frequently undergo preventive medical health examinations. Moreover, significant changes in healthy lifestyle factors were reported. The most important observation concerned the changes in health beliefs. Beliefs derived from a holistic-functional model of health played a major role in the 2003 group, whereas in the 2013 group beliefs close to the biomedical model of health were more important.

Conclusions – Analyses demonstrate changes in detailed healthy lifestyle factors. At the same time, no significant differences in global measures of concern for one's health were observed. Importantly, results show modifications in healthy lifestyle factors. It is suggested that the observed differences stem from the social change of the last decade.

Key words: *health, health behaviors, health beliefs, lifestyle, young adults, intention*

Background

Early adulthood is the stage of human development in which a person becomes capable of achieving autonomy and mature dependency. In this stage, the process of becoming an independent individual is very significant, as are changes in perceiving social comparisons and susceptibility to social influence. Importantly, young adults increasingly take control over their lives by making independent decisions, which leads to taking more personal responsibility and starting to “live on one's own account” (Kryk, Rosińska

& Nowak, 2014). All these new experiences lead to the opportunity to create one's own unique pattern of functioning. An individual's life choices create the basis for their future adult lifestyle, which is still under formation during this particular developmental stage. Therefore, these decisions can establish a proper proportion of healthy behaviors to those harmful to one's health (cf. Brzezińska et al., 2002). However, the described process does not occur overnight, but is more similar to evolution. Young adults have to go through many small and gradual steps on their journey from adolescence to mature life.

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Moreover, research on this subject demonstrates that the line between adolescence and early adulthood is fairly unclear. Mature engagement in one area of life does not make it possible to jump to conclusions the levels of development in other areas. According to the literature, we can observe irregular development in many aspects of life, especially in the area of typical adulthood commitments (Brzezińska et al., 2011). Furthermore, there are many reports of young adults formulating their own „life plans” in scientific literature, and this is strongly related to them experiencing fear, anxiety and a feeling of insufficient emotional support (Luyckx et al., 2008; Brzezińska et al., 2012).

Reports likewise say a lot about the course of young adults’ life decisions being under significant influence of a sense of lost profits (cf. Smykowski, 2013). Importantly, many authors point out individuals and groups of people in early adulthood who knowingly avoid many typical adult engagements (cf. Côté, 2000) or decide to delay them, even until the very end of the early adulthood stage (cf. Furstenberg, 2000; Arnett, 2000).

When we integrate these findings into our perspective on developing a healthy lifestyle, we are able to recognize a similar dynamic of change. On the one hand, an inharmonious course of development is typical for early adulthood, but on the other it still seems to be partially rooted in the socioeconomic changes of the last decades.

Basing on research data from 2003 and 2013, we wanted to take a closer look at the dynamic of those changes specifically. An additional goal was to analyze the factors and correlates significant for health and healthy lifestyles in early adulthood. Among many, it is Baltes (1997) who brought diversity in developmental dynamics into a different, wider perspective. In his omnidirectional model of development he described in detail the importance of the plasticity of psychological mechanisms responsible for making life decisions.

Baltes describes adulthood as a stage in which the optimization of benefits and minimization of losses play an important role. Life decisions are perceived as a “successful investment” when their benefits exceed their costs. According to his SOC model (selection-optimization-compensation, cf. *ibidem*), the prevalence of successful investments over choices that generate losses can be a good indicator for the level of “adaptability”. This indicator, more so than the concept of adaptation proposed elsewhere, can accurately describe the nature of development as an ongoing process of adjustment.

Thus, in line with the presented considerations, a complete understanding of the mechanisms and factors that push an individual into forming their own lifestyle is only possible when the developmental processes of young adulthood (resolving typical developmental tasks and crises) are taken into account.

According to Newman (as cited in Brzezińska, 2000), forming a lifestyle is one of early adulthood’s many developmental tasks. Brzezińska further claims that “A lifestyle consists of the rate of activity, the balance between work and leisure, forming a group of friends of different

intimacy levels, and making decisions about different activities which are compatible with personal values” (*ibidem*, p. 17). In this approach, lifestyle is considered a very broad concept which includes many different areas of a young adults life. This brings up the following question: is it possible to discern categories directly related to health in the lifestyle concept? Putting the problem this way leads to another question worth asking: what is the significance of intent and health related activity for forming a lifestyle at different developmental stages?

There were several attempts to investigate these issues by both sociologists (Ostrowska, 1997) and psychologists (Sęk, 2000; Ziarko, 2006, 2007; Rosińska, 2013; Rosińska & Rosiński, 2013; Pasikowski et al., 2014). According to Ostrowska (1997), at least two independent patterns of taking care of one’s health can be distinguished within society: medical-orientated behaviors and health-orientated behaviors. The first group includes behaviors related to medical aid, such as:

- the frequency of contact with a physician,
- preventive medical health examinations,
- monitoring one’s general physical condition.

The second type, health-orientated behaviors, is related to the lifestyle itself to a greater degree. The following behaviors can be distinguished as part of this group:

- physical activity,
- coping with stress,
- reducing smoking.

However, Sęk (2000) argues that a psychologically healthy lifestyle can be described as an “individually specific category of health behaviors, which stem from temperamental traits, knowledge, competences, value system, experiences in the area of health, general opinions and beliefs about the world, life and themselves, and other sociocultural factors” (*ibidem*, p. 543). The author moreover suggests a slightly different perspective on health-related lifestyle, that is: “loosely connected behaviors (habits and activities) that are specific for a given individual or social group (or class) and play an essential role in health” (Sęk, 2000, p. 542). Siciński (2002), on the other hand, claims that lifestyle can manifest in three areas:

- values, desires, aspirations, needs and life goals,
- observable behaviors and activities,
- the sphere of objects that an individual, consciously or not, creates, chooses or overtakes, thus establishing their own habitat (*ibidem*).

Furthermore, Ziarko (2006) analyzed the developmental tasks of early adulthood in order to find factors that help or hinder the process of forming elements of a healthy lifestyle. For example, he claims that accomplishing the developmental task of forming ways of spending free time may become a healthy lifestyle element, provided the individual spends their free time in active ways (doing sports or spending time outdoors). However, when an individual tends to spend their free time passively, avoiding sports, then relaxing becomes part of an unhealthy lifestyle.

A consideration of the formation of a healthy lifestyle in early adulthood needs to also bring up transsubjective

factors and the ways they relate to subjective variables. One possible way of putting behaviors important for health into the context of early adult lifestyle is thinking in systemic categories. In the ecological approach to health and human development, reality is considered to be a complex system which can be analyzed on different levels, and which can be broken down into multiple subsystems, starting with the individual level, through the interpersonal, collective and social levels, to the supranational level (Bartholomew et al., 2006; Cierpialkowska & Ziarko, 2010).

Determinants of health are sought on every level of reality. In our research, we included variables from two levels: individual and interpersonal. The former includes knowledge, beliefs and personality traits, which influence behavior and health. This level has been described by many health behavior models widely used in health psychology, such as the processual model of health behavior (Schwarzer & Renner, 2000; Łuszczynska, 2004; Schwarzer, Lippke & Luszczynska, 2011) or the protection motivation theory (Rogers, 1975). The other, interpersonal level embraces interpersonal relations, and is therefore related to the social groups people belong to (family, friends, peers).

Previous research (cf. Ziarko, 2006) demonstrated that the following variables are important factors for the formation of the health-related aspects of a lifestyle: intention to perform and continue healthy behaviors, beliefs about health and its predictors (individual level variables), and the social influence experienced by the individual (interpersonal level variable).

In the area of health psychology, intention to perform and continue healthy behavior despite obstacles, is conceived of as a representation of a goal and the successive stages of the task execution process. In the theory of volition strength by Kuhl (1986; Marszał-Wiśniewska, 1999), the author claims that complete intention is a realistic intention that obliges a subject to begin the activity. For intention to occur, several conditions must be met: an individual must be certain of the goal of their activity (set a purpose) and recognize the appropriate conditions to begin the activity.

According to Kuhl (1986), the development of a purpose is a process of transforming dreams, fantasies and wishes. Importantly, the process of transforming a purpose into an intention is accompanied by several expectations: characteristics of the situation regarding the possible means of reaching the goal, characteristics of the planned activity, and characteristic of the result (related to obtaining the anticipated consequences of the activity). Mature, fully formed intention can be recognized when an individual concludes that: (1) suitable conditions for accomplishing the purpose have occurred, (2) there is enough time to perform the activity, (3) the purpose is seen as important, (4) personal resources are perceived as sufficient to complete the planned activity, (5) external pressure drives the individual towards their purpose (Kuhl & Heckhausen, 1985; Łukaszewski & Doliński, 2000).

The intention is represented as a statement that includes: “a definition of the subject as the agent of an action, context definition regarding the time (when?) and space (where?) in which the planned action happens,

a representation (plan, schedule) of the action itself which is to be realized and will convert the current state into the future state, a definition of engagement, a sense of commitment that leads to realizing the intention, expressed as the sentence “a have an intention” (Marszał-Wiśniewska, 1999, p. 29–30).

Ajzen defined intention as: “a behavioral disposition of high predictive value” (Ajzen, 1975; Schwarzer, 1997, p. 188). According to the author, intention is the direct and most important activity predictor. Intention mediates between attitudes, subjective norms, the perceived control of behavior and the behavior itself.

From the perspective analyzed in this paper, it is important to emphasize the assumptions that health behaviors can be analyzed from both the perspective of objective knowledge and of subjective beliefs about the relationship between health behaviors and health itself. Importantly, research demonstrates that scientific models of health are reflected in common knowledge (cf. Sęk, 2000). Research results show that among laypeople opinions close to the holistic-functional model of health coexist with those typical of the biomedical model. Moreover, research on metaphors of health demonstrates that subjective systems of knowledge about health are greatly individualized. When we analyze common knowledge from the perspective of health and lifestyle problems (often by combining these analyses with attitude theory), we describe it as a health belief (*ibidem*). Two more interesting categories emerge in the area of beliefs crucial to adopting, sustaining and rejecting health beliefs: normative beliefs and subjective norms.

According to Ajzen (1988), subjective norms are the result of normative beliefs, which describe to what extent significant others accepts one’s planned behaviors. Normative beliefs can be seen as a reflection of social influence. An individual perceives them as a form of social pressure, which encourages or discourages given types of activity. The theory of planned behavior (cf. Ajzen, 1988) points out that subjective norms depend not only on significant others’ approval. An important factor is an individual’s motivation to follow these people and meet their expectations (Ostaszewski et al., 2002). Research demonstrates that these variables are strongly connected to engaging in high risk behaviors in adolescence and early adulthood (particularly using psychoactive substances; *ibidem*).

Social influence is described in the literature as a one of key factors in forming intentions to engage in health-related behavior. Factors of social influence often discussed in this matter include the following: persuasion, pressure, behavior imitation, unconscious identification, mechanisms of attractiveness and liking (Ziarko, 2006). Importantly, it is believed that the formation of health behaviors can be explained by models focused on attitude change, such as: diffusion of innovations theory or social control of behaviors theory (Górnik-Durose, 1995, Westmass & Wild, 2002).

Experience in executing preventive and health promoting programs demonstrates that mechanisms of social influence are the strongest during two stages: the

Table 1. Population characteristics – differences in demographics. T-test and χ^2 results

		2003	2013	test results	<i>p</i>
Age		25.36 (4.52)	24.90 (5.90)	$t = .980$.328
Sex	Female	148 (52.1%)	148 (67.3%)	$\chi^2 = 11.755$.001
	Male	136 (47.9%)	72 (32.7%)		
Having a partner	Yes	197 (69.9%)	64 (37.6%)	$\chi^2 = 45.10$	< .001
	No	85 (30.1%)	106 (62.4%)		
Married	Yes	73 (25.7%)	51 (23.1%)	$\chi^2 = .643$.496
	No	211 (74.3%)	170 (76.9%)		
Children	Yes	42 (14.8%)	40 (18.3%)	$\chi^2 = 1.059$.303
	No	241 (85.2%)	179 (81.7%)		
Number of children		.21 (0.55)	.57 (0.96)	$t = -4.748$	< .001
Education	Elementary	13 (4.6%)	24 (10.9%)	$\chi^2 = 13.527$.009
	Vocational education	2 (0.7%)	3 (1.4%)		
	High school	100 (35.2%)	87 (39.5%)		
	Post-secondary school	29 (10.2%)	27 (12.3%)		
	University education	140 (49.3%)	79 (35.9%)		
Place of living	Village	43 (15.1%)	45 (20.5%)	$\chi^2 = 26.058$	< .001
	City – 100 thousand inhabitants or less	90 (31.7%)	27 (12.3%)		
	City – above 100 thousand inhabitants	151 (53.2%)	147 (49.3%)		

initial phase of activity (pre-decision stage) and when taking up the activity is blocked by emotions (e.g., fear of disease; cf. Sęk, 1999). The importance of social influence is not limited to only the pre-decision stage. During the activity phase social influence becomes social support, which makes it one of the most important factors that enables achieving the goal (cf. Ziarko, 2006).

Based on the aforementioned theories and factors, in this article we wish to present comparative research on the health behaviors of young adults from 2003 and 2013. The gap between the two measurements made it possible to observe differences in lifestyle predictors and lifestyle itself in young adults.

Method

The data for this study were collected in two separate measurements in 2003 and 2013. The study involved a population of people in the early adulthood developmental stage. In the first step, 284 participants were examined (148 women; 52.12% of the population), whereas in 2013, 220 participants were examined (148 women; 67% of the population). In comparison to the first measurement, the second group consisted mainly of women ($\chi^2_{(1)} = 11.775$; $p < .001$). Participants in both groups were aged 18 to 35. Populations were homogenous in terms of age ($M_{2003} = 25.36$; $SD_{2003} = 4.52$; $M_{2013} = 24.90$; $SD_{2013} = 5.90$; $t_{(502)} = .980$; $p = .328$), length of marriage, and children, while differences were observed in level

of education, place of residence, relationship status and number of children (cf. Table 1).

All participants were voluntary and were informed that their answers were confidential. The data for the study were collected by completing a set of paper questionnaires which included: Health Behaviors Questionnaire (Ziarko, 2006), Health Beliefs Questionnaire (Sęk, 1992), The Source of Social Influence Questionnaire (Ziarko, 2006), Rating Scale for Intention Assessment (Ziarko, 2006).

Health Behaviors Questionnaire (Ziarko, 2006) is a research tool used to measure different elements of healthy lifestyles. This tool encompasses 49 statements which describe four dimensions of caring for one's health: somatic, mental, sociological and ecological health (Cronbach's $\alpha = .89$). Statements related to the somatic dimension of health (24 statements) include the following areas: diet, physical activity, substance use, engaging in risky behaviors, undergoing preventive medical examinations, broadening one's knowledge about determinants of health, and hygiene (e.g., "I eat a lot of fruits and vegetables") (Cronbach's $\alpha = .80$). Statements describing the mental dimension of health deal with the following areas: coping with emotions, types of leisure activities, and working conditions (e.g., "When I am tired, I relax in contact with nature") (Cronbach's $\alpha = .75$). These aspects of health behaviors were assessed with 16 items. The social dimension of health was assessed by 5 items which reflect the quality of interpersonal relationships, and received social support (e.g., "Even when

there is a lot of work, I find time to talk with friends”) (Cronbach’s $\alpha = .65$). The last subscale includes 4 items and describes behaviors that can affect the natural environment (e.g., “I recycle, because I care about the environment. I sort the waste into the right bins”) (Cronbach’s $\alpha = .71$).

The Health Beliefs Questionnaire (SPZ – HF/BM) (Sęk, 1992) includes 20 statements that group into two subscales. 10 items describe the biomedical model of health (e.g., „No one but doctors and the health service are responsible for protecting and restoring one’s health”) (Cronbach’s $\alpha = .60$). The other 10 sentences are related to a holistic and functional model of health (e.g., “People can considerably influence their health by their own activities”) (Cronbach’s $\alpha = .81$). All participants were asked to report their attitude to the presented sentences on a 6-point rating scale.

The Source of Social Influence Questionnaire (Ziarko, 2006) is used to assess the source of social influence that leads to engaging in health-related activities (Cronbach’s $\alpha = .84$). This questionnaire contains 9 sentences related to three dimension of social influence: media-related social influence (e.g., “My health decisions are influenced by information from radio and television about the health benefits of certain activities”) (Cronbach’s $\alpha = .86$), social influence derived from people significant to the individual (e.g., “My health decisions are influenced by talking to and discussing health and it’s risks with close ones”) (Cronbach’s $\alpha = .88$), social influence derived from contact with sick people (e.g., “My health decisions are influenced by contact with sick people, especially when I see them suffer”) (Cronbach’s $\alpha = .74$). Participants reported their answers on a 6-point rating scale.

The Rating Scale for Intention Assessment (Ziarko, 2006). The scale measures the intention to begin or continue health behaviors, using one item. Research subjects were asked to assess whether they were willing to begin or continue health behaviors in the immediate future. Answers were reported on 10-point rating scale, where 1 point stood for low intent and 10 points stood for strong intent.

Results

We decided to analyze the data in two steps. In the first step, a comparison of health lifestyle elements among young adults from the measurements in 2003 and 2013 was performed. In the second step, using stepwise regression analysis made it possible to determine which factors could explain the levels of health behaviors in both groups.

Healthy lifestyle factors among young adults in 2003 and 2013

Analyses showed that there are no significant differences between major aspects of healthy lifestyle in both groups. Neither population exhibited any differences as far as the global level of health behaviors, nor behaviors related to somatic and mental aspects of health. Additionally, participants cared about the environment to a similar degree. The only dissimilarity was observed in social health behaviors. In the 2013 group, young adults rarely engaged in that type of activity. Reported differences were small (Cohen’s $d = .36$) (cf. Table 2).

Table 2. Resources among low and high anxiety groups of chronically ill patients. Tests of differences results

Variable	Health behaviors level		t-test results			
	2003	2013	<i>t</i>	<i>df</i>	<i>p</i>	<i>d</i>
	<i>M (SD)</i>	<i>M (SD)</i>				
Health behaviors – general score	206.45 (25.69)	205.54 (30.23)	.359	431.020	.720	-
Health behaviors – somatic	99.53 (15.05)	100.92 (16.05)	-.998	503	.319	-
Diet	23.12 (5.06)	27.93 (4.44)	-11.186	503	.000	1.01
Physical activity	6.78 (2.68)	7.58 (2.54)	-3.406	503	.001	.30
Substances	16.70 (4.11)	15.50 (3.64)	3.470	494.746	.001	.31
Risk behaviors	23.18 (4.73)	22.57 (4.52)	1.483	503	.139	-
Preventive	7.65 (2.46)	9.33 (2.04)	-8.365	500.940	.000	.75
Knowledge	11.24 (3.10)	9.71 (2.52)	6.107	502.156	.000	.54
Hygiene	10.86 (1.66)	8.30 (2.42)	13.475	372.690	.000	1.25
Health behaviors – mental	70.04 (9.08)	68.45 (10.26)	1.820	442.286	.069	-
Working conditions	9.26 (1.72)	7.93 (2.09)	7.643	422.136	.000	.70
Coping with emotions	41.05 (5.37)	38.57 (6.04)	4.795	443.173	.000	.43
Leisure	19.74 (3.83)	21.95 (4.36)	-5.963	440.127	.000	.54
Health behaviors – social	22.77 (3.88)	21.35 (4.04)	4.004	503	.000	.36
Health behaviors – ecological	14.11 (3.96)	14.82 (4.36)	-1.923	503	.055	-

In a detailed analysis, groups of health behaviors related to particular dimensions of health were compared. The results manifested many significant differences between populations. There were three differences within each level of effect size (three large, medium and three small effect sizes). Young adults from the 2013 group had a tendency to take more care when it came to their diet (Cohen's $d=1.01$) and preventive behaviors (Cohen's $d=.75$), but at the same time put less stock in their hygiene (Cohen's $d=1.25$). All three groups of behaviors were related to the somatic dimension of health and recorded large effect sizes.

Moreover, three differences with medium effect sizes were reported. Young adults from the 2013 group to a lesser extent developed their knowledge about health prevention methods and health itself (Cohen's $d=.54$). A similar tendency was spotted in differences in work conditions (Cohen's $d=.70$). However, participants from the group put more stock in leisure and enjoying their free time (Cohen's $d=.54$).

Importantly, differences at low size effect levels were reported within the following factors: physical activity (higher scores in the 2013 group, Cohen's $d=.30$), substance use (lower score in the 2013 group, Cohen's $d=.31$) and coping with emotions (lower scores in attention and related behaviors in the 2013 group Cohen's $d=.43$).

Healthy lifestyle determinants in the 2003 and 2013 group

The goal of the second stage of conducted analyses was to determine which factors explain the healthy lifestyle level in both the 2003 and 2013 group. In order to achieve this objective, a regression analysis was conducted with the global level of health behaviors as a dependent variable. The analysis included the following independent variables: (1) intention to begin a health behavior, (2) level of biomedical health model conviction, (3) level of holistic-functional model of health conviction, (4) media-related social influence, (5) social influence derived from significant people, (6) social influence derived from contact with sick people. Importantly, regression equations were conducted separately for each group (cf. Table 3).

Received results show that for the healthy lifestyle of the 2003 group there were three variables: media-related social influence ($\beta=.36$; $p<.001$), the level of intention to begin a health behavior ($\beta=.27$; $p<.001$) and the holistic-functional model of health conviction level ($\beta=.19$; $p<.001$). These factors explained the independent variable at 35% ($R^2=.35$).

In the case of the 2013 group, significant variables were: the level of intention to begin a health behavior ($\beta=.14$; $p=.034$), social influence derived from contact with sick people ($\beta=.29$; $p<.001$), media-related social influence ($\beta=.19$; $p=.004$), the biomedical health model conviction level ($\beta=.20$; $p=.003$). The coefficient of determination was reported at .26 ($R^2=.26$).

Discussion

A general analysis shows that young adults in 2003 and 2013 were ready to invest similar energy in different elements of a healthy lifestyle, which was proven by the lack of differences in general categories of health behaviors. That made it possible to form a hypothesis about a "tendency to saturate change" (cf. Pasikowski & Rosińska, 2013), that is reaching the highest possible level in a certain area. To put it in other words, the research results show that the completed constellation of health behaviors of young adults most likely represents a stable style of functioning of people in that group.

At the same time, data brought up in this paper demonstrate changes in the detailed "patterns" within certain categories of health behaviors (somatic, social, psychological, ecological). Data show that putting stock in a healthy diet and preventive examinations were on a higher level in 2013 than a decade earlier. An inverse situation was observed regarding hygiene, where results show significant depletion.

In the second stage of the study (2013 group), we observed a tendency among young adults for leisure, enjoying free time and physical activity. This tendency appeared alongside lower use of psychoactive substances, and fewer behaviors focused on learning about health. In the 2013 group, a lower level of behaviors focused

Table 3. Predictors of health behaviors in 2003 and 2013. Step-wise regression results

2003				2013			
Variable	B	Std. error	β	Variable	B	Std. error	β
Health behaviors							
Social influence – media	3.025	.432	.36***	Intention	1.519	.710	.14*
Intention	3.365	.663	.27***	Social influence – contact with ill people	3.460	.754	.29***
Holistic-functional model of health	.759	.206	.19***	Intention	4.233	1.422	.20**
				Social influence – media	.829	.284	.19**
$R^2=.35$; $F=50.576$ ***				$R^2=.26$; $F=17.190$ ***			

on coping with emotions (mental aspect of health) was reported.

Simultaneously, other papers reporting data from the same comparative study (Ziarko, 2006; Pasikowski & Rosińska, 2013), focused on the consequences of young adults' health behaviors, described several significant differences. In comparison to the 2003 group, perceived levels of both positive and negative consequences of health behaviors (including avoiding them) went up significantly. Still, there is a distinct tendency to notice positive consequences of health behaviors, rather than negative ones (cf. Pasikowski & Rosińska, 2013).

These observations lead to a fundamental question: what factors are responsible for the observed changes and, at the same time, contribute to the stability of results in certain areas of health across the research group?

A partial answer to this question can be found in the analyses conducted for this paper, but it is important to extend research in this area by including contextual variables, such as socioeconomic factors. Studies prepared for social policy purposes (cf. Szafraniec, 2011; Brzezińska et al., 2012) demonstrate that the research population's achievement of developmental tasks took place during very dynamic social and economic changes. The first measurement was conducted before Poland's accession to European Union, whilst the second one was taken a decade after. Those factors are frequently described as chances or growth factors. However, for youth entering into the adulthood there is a need for support from older generations. As far as Poland is concerned, there was no appropriate experience among older generations, what is more both the political system transformation and accession to the EU were a great source of stress to them.

Basing on that knowledge, we can propose that the lifestyles of successive groups of young adults were formed in a complicated social situation as the older generations could not fully support them in that process. By "support" we mean both assisting and creating challenging situations. During the last decade it seems that young adults became a source of hope and, at the same time, a reason for concern. Young adults can be perceived as a sign of hope because they have the opportunity to find "the key" to understand the changing reality. On the other hand, they are source of concern, since there is no clear way to support them, and it is unknown whether they will be eager to share their knowledge about the world with the older generations (cf. Rosiński, 2013).

Anxiety may stem from a lack of confidence about the future as well as the kinds of behavior and lifestyle that may help in adapting to the changing world. This raises the question: how is this kind of changeability perceived by young adults, and how do they cope with it, especially in the perspective of their forming own health-related lifestyle.

It is said that in early adulthood the environment is perceived to be full of opportunities (Smykowski, 2013). However, many opportunities carry with them doubts about the consequences of the tough decisions that young people face. This situation can be a source of great difficulty,

especially when the support of adults, granted during earlier stages of development, is not adequate to the needs of a young person at the verge of independent life. A particular need for support may stem from the high anxiety that is a constant element of becoming an adult in many countries and regions. This specific combination of subjective factors and environmental situations makes the choice much more difficult. Making a choice about one's lifestyle is a strong commitment which can lead to a confrontation with the rejected alternative, so that a sense of loss of benefits and possibilities may be experienced (*ibidem*). A belief about the necessity of trying every alternative, avoiding limitations and pursuing changes in activities may arise, as young adults have negative associations with stability in this context.

Thus, there emerges a second (after adolescence) stage of experimentation, including both risk and anti-health behaviors (Drózd, 2007). So far, in childhood and adolescence, dependence on adults and the law set limits, but in early adulthood the limits are not that clear. An additional "now or never"¹ phenomenon (Lifton, 1979; Oleś, 2012) makes young adults more aware of the passing of time, which can lead to the escalation of experimentation and avoiding commitments. Individual education plans can be an important factor for coping with the developmental demands of early adulthood, especially regarding entering the job market and becoming self-reliant (Brzezińska, 2013).

Interestingly, research conducted in Poland in 2011 shows that young adults who enrolled in university engage in a smaller number of roles typical for adulthood than people with no such experience. Individuals with no academic record were involved in more obligations crucial for forming an adult identity. This leads to an important question: is health an important factor in the process of forming a lifestyle?

The second issue significant to this study are the determinants of lifestyle. Results of the analyses indicate that different factors are responsible for the level of health elements in lifestyles in the 2003 and 2013 group. The difference in health beliefs seems to be the most important. Beliefs close to the holistic-functional model played a major role in the 2003 group, as did placing responsibility in one's own choices and health behaviors. In 2013, on the other hand, beliefs related to the biomedical model of health were most important, which indicates that responsibility for one's health is placed in the hands of medical personnel. The observed change suggests that beliefs focused on the subjectivity of an individual play a minor role in the origin of health behaviors. This can be seen as a strange phenomenon, especially considering the growing role of promoting individualism in society.

During the last decade, there was a massive change in the source of social pressure regarding taking care of one's health. The media were the main source of inspiration for health behaviors at the very beginning of the century.

¹ This phenomenon is understood as a change in the awareness of a shortage of time for accomplishing goals and dreams, so an individual becomes willing to achieve them "now or never" (Lifton, 1979).

After ten years, however, the influence of media on human health started to decrease in favor of contact with ill people. Perhaps the observed change stems from the growing influence of personal experience on regulating behaviors. Conversely, intention was observed to play a steady and permanent role, and so in both groups it was a significant predictor of the health-related elements of lifestyle. These results establish the key role of intention in health behavior.

Recommendations for further research

Further research in the area is highly recommended. One very interesting issue for future study is the pattern of health behaviors, analyzed using a division into anti-health and health behaviors. So far, studies let us analyze anti-health behaviors only as a deficit in health activity. However, there are several reports in the literature on specific anti-health patterns of behavior, and their influence on forming an individual's idea of a healthy lifestyle. Authors point to use of solariums, diet supplements, substances boosting muscle growth (cf. Zawielak, 2012), or extreme sports (Drózd, 2007) as examples.

Moreover, another important scientific issue is the way young adults create their own coping strategies and ways of taking care of their own health. A key question regarding the issue might be: does increased concentration on leisure, diet, prophylaxis, physical activity and a stronger correlation between health behaviors and subscribing to the biomedical model of health beliefs lead to the better judgment of risks and acceptance of reality's difficulties? Or maybe such recognition does not exist and young adults' mechanisms of prolonging engagements are related to a deformation of reality, leading to ignorance of risk?

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