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ERZSÉBET NÁRAI

Healthstyle segmentation, attitudes to health

Doctoral (PhD) Theses

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The primary objective of my dissertation is to identify the segments of health behaviour, the so-called „healthstyles”, by means of collecting characteristics of health-related behaviour that have been less explored up to now. The secondary goal is to outline the openness and attitudes of these segments towards communication about health.

When setting the objective, I was inspired by a unique target-group segmentation model that relies on a social cognitive theoretical basis (the model was developed in 1996 within the framework of the American Healthstyles Audience Segmentation Project by Michael Slater, Edward Maibach and their fellow researchers).

Conceptual framework and scientific context of the dissertation

The starting point for the subject behaviour-change discussed in the thesis as well as for the segmentation approach which is presented operationalised in a practical way is the theorem laid down by social cognitive theories (A. Bandura, 1962/78, W. Mischel, 1973/85). According to this, human behaviour – and thus relationship to health and health behaviour – is determined by both personal and environmental-social characteristics and is in organic interaction with these.

It was social marketing that called attention to the importance of segmentation in the context of health communication. The term *healthstyle* refers to parts of lifestyle that are related to health and is described by behavioural patterns, cognitions and social characteristics (Slater, 1996). The model itself which has been adopted in the present dissertation was originally created to fill a gap in the United States, since the target-groups of most of the communication, including those related to health behaviour, had previously been defined by demographic characteristics.

Research hypotheses

The first *research hypothesis* claims that the segments – social groups – can be distinguished from each other not only, and not even necessarily, in terms of socio-demographic variables, but based on their other attitudes shown in relevant areas of health.

The *second hypothesis* derives from methodology, that is, from health-segmentation that relies on social-personal theories and spans over the areas of behaviour in question.

It claims that lifestyle groups (= healthstyles) significantly different in terms of their health behaviour become not only clearly separable but they can be described precisely based on their behaviour, social traits, knowledge characteristics, etc. The other hypothesis is that the various segments – or smaller groups of the segments – have different attitudes with regards to health communication.

The third hypothesis is that the segments produced in this fashion are better predictors of health behaviour than mere demographic variables. This opens the ground for tremendous improvement in the field of health communication planning and initiatives (Slater & Flora, 1994).

To verify the hypotheses and to meet the research objectives I used research conducted in two phases. The first phase consisted of a quantitative research (N=1500) that identified the segments and provided me with a lot of important and useful numerical data, the second phase involved a small-sample qualitative research (N=10) during which I gained insight into the thinking, perceptions, motivations and aversions of the target-group members.

Preparation: sampling, data collection, the questionnaire

The quantitative research that laid the groundwork for the segmentation (the target-group segmentation – healthstyle segmentation constituting the backbone of the research) was carried out on a national representative sample of 1500 people.

The starting point of the segmentation research was the social cognitive behavioural model (Bandura, 1986) and the objective was to operationalise it.

The questions concerned 5 large areas which are generally acknowledged as the areas of health behaviour: smoking, alcohol consumption, physical exercise, diet and body-weight control (Slater, 1996).

For each of the five main behavioural areas, social and individual characteristics that determine behaviour were sorted into major groups of questions and specific questions based on Social Cognitive Theory.

Data had to be reduced before the segmentation process started because the original quantity of variables was difficult to handle. With the help of factor analysis (principle component analysis) we obtained comprehensive factors, principle components that were suitable for cluster analysis. The following chart shows the principle components in the complete data matrix.

Data-reduction correlations of the segmentation model

Deterministic factors		Domains					
		Smoking	Alcohol	Exercise	Nutrition	Weight control	
Behavior		Number of cigarettes smoked	Number of alcoholic beverages consumed	Moderate + Strenuous physical activity	Avoidance of: Dietary fat, Fat while dining out, Smaller portions	Frequency of fat consumption	
Social/ environmental	Perceived social support	Support and norms: smoke'n'booze		Social support: exercise	Social support: healthy eating		
	Peer-group norms			Peer-group norms: exercise	Peer-group norms: healthy eating		
	Social meaning 1: Likability	Likability: smoke'n'booze		Likability: body control			
	Social meaning 2: Attractiveness	Attractiveness					
	Interpersonal communication	Interpersonal communication					
	Impersonal risk	Impersonal risk: smoke'n'booze		Impersonal risk: body control			
Internal/ personal	Perceived personal risk			Perceived risk: body control			
	Self-evaluative outcome expectancies	Smoking*	Expectancy: alcohol	Exercise**	****	***	
	Self-efficacy						**
	Hedonistic attitude (physical outcome)		Hedonistic: alcohol		Hedonistic: nutrition		
	Motivation	Motivational: smoking	Intentional: alcohol	Motivational: exercise	Intentional: nutrition****	Weight control***	
	Intention	*		**			
	Health as a value	Health as a value, Importance of good looks					
	Life satisfaction	Life satisfaction					
	Sensation-seeking	Risk-seeking, Partying					

Source: Edward W. Maibach, Andrew Maxfield, Kelly Ladin, Michael Slater: *Translating Health Psychology into effective Health Communication, The American Healthstyles Audience Segmentation Project, 1996.*

The chart also shows that there are „white areas” which means that a given variable cannot constitute a common factor with other variables. Factor analysis is successful if the number of these „white areas” is low. In the present case, in the Hungarian analysis only 4 variables were left standing on their own (next to them the 3 variables that were evaluated individually as factors reaching across the domains), we treated these as individual variables, thus they take part in the making of clusters.

Summary statements about the total sample

- Altogether it can be stated that the characteristics of the sample used meet the requirements of representativity.
- It is important in terms of the connection between smoking and alcohol consumption that the number and ratio of non-smoking casual drinker women is high (16%). Beside smoking as a prominent health communication topic, this should also be dealt with in order to reduce the number of „problem drinkers”.
- Smoking has a stronger correlation with alcohol consumption in the case of men than it does in the case of women.
- Smoking under the age of sixty is at a higher level in the case of men but it is approximately at the same level for men and women above sixty.
- Women consider smoking somewhat riskier and alcohol consumption much riskier than men.
- Women do more moderate physical exercise whereas men do more rigorous exercise.
- Eating healthy is much more important for women than it is for men; men typically like eating more than women in every age-group.
- Wilful body-control and appearance, good looks are more relevant to women, although this diminishes with age in their case. It is questionable to what extent men are ready to admit good looks are important.
- Women go to see doctors and are sick more often than men.
- The average body mass index of the sample is **25,9**, somewhat more than half of the Hungarian adult sample is overweight or obese.
- BMI values rise continuously with age in the case of both sexes. Some BMI rise is not harmful at all; on the contrary, it is even useful to avoid dementia.
- There are more overweight people among men with high social status than among men with a low status, but it is just the opposite for women: high status is matched with a lower BMI, presumably with a higher level of health awareness.

- Those in the sample firmly claimed they could reduce their alcohol consumption any time.
- It can be stated about the total smoking sample that they are far less convinced about changing their behaviour than those in the case of alcohol.
- In terms of diet and body weight control people tend to be optimistic, but women find it easier to observe a special diet than men.
- The validity test proved that phenomena related to health behaviour can be prognosticated with higher precision with the help of health profiles than with socio-demographic variables.

Segments – „lifestyles”

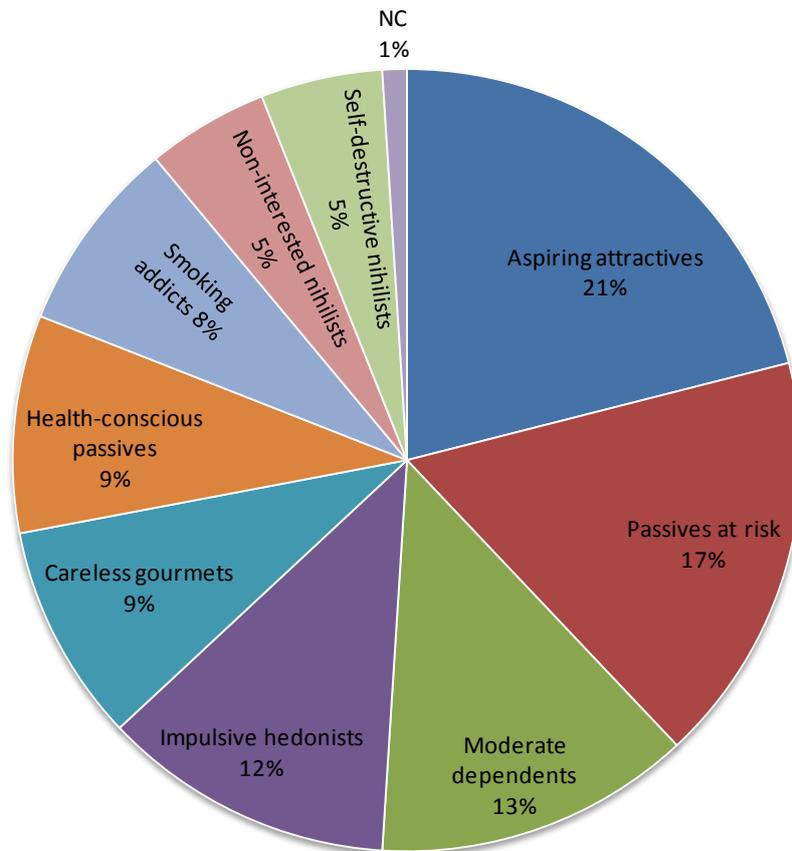
On the basis of data reduction that had been carried out with factor analysis, the cluster analysis could be conducted, clusters were thus produced and were named *healthstyles* after the American authors.

The healthstyles that we see as a result of the segmentation fulfil the fundamental general expectation for segmentation that the groups should be as different as possible yet they should have as much inner coherence as possible. In addition to the fact that there are fundamental differences, it is a significant result that with one exception every group is either „feminine” or „masculine”.

The **9 segments** are the following (find the ratios within the **Hungarian** population in brackets): Aspiring Attractives (21%), Passives at Risk (17%), Moderate Dependents (13%), Impulsive Hedonists (12%), Careless Gourmets (9%), Health-conscious Passives (9%), Smoking Addicts (8%), Non-interested Nihilists (5%), Self-destructive Nihilists (5%).

7 segments were identified in the original model in the **United States**: Decent Dolittles (24%), Active Attractives (13%), Hard-living Hedonists (6%), Tense but trying (10%), Non-interested Nihilists (7%), Physical Fantastics (24%), Passively Healthy (15%).

Hungarian Healthstyles



N=1500

Summary statements about the segments

- As only 2% of the total sample was non-classifiable, the 9 segments cover the totality of the Hungarian adult population.
- There are segments whose socio-economic characteristics hardly differ, yet their health behaviour and health-related attitudes, body mass index are very different – this finding provides conceptual support to the segmentation approach.
- A significant part of the sample, altogether 4 segments were placed in the overweight domain based on the average BMI values.
- Results concerning the prospects of change in behaviour:

- Based on the research, the four **smoker** segments do not want to, could not quit smoking and do not think they should. However, lighter smokers are open to quitting – they are mostly young people.
- Concerning **alcoholism**: „heavy drinkers” do not even perceive objective risks and do not think of changing their behaviour.
- Those who consider a healthy **diet** a norm are the people who like eating the least and vice versa: those enjoy eating the most who do not pay attention to eating healthy.
- More rigorous **physical exercise** does not necessarily go together with a smaller weight or a smaller ratio of overweight people. Physical exercise is not as significant a distinguishing factor as alcohol and smoking are.
- In terms of **body weight control** those who perceive their personal risk as high do not act to reduce that risk: they do not do anything about their body weight.

Summary statements about the qualitative research

- In the qualitative phase of the research, altogether 10 personal in-depth interviews were carried out, where each segment was represented by one person, and one segment by two people in the sample. It was necessary to have a sample size of at least 10 persons so that in certain exercises two sub-groups could be taken into consideration for analysis.
- I processed the in-depth interviews using different approaches: (1) applying a phenomenological approach, where the objective was to explore inner connections and draw conclusions (2) using a content analysis approach, where the objective was to produce quantified results based on the text corpus of the 10 interviews with the help of a content analysing software, Atlas.ti (3) applying a motivational language element-examining approach, where we attempted to detect motivational levels by using semantic tools.

Summary of the phenomenological analysis

- Here as well as in several earlier studies health was most often conceptualised as the lack of illness – in 'ill health' style –, there were a couple of respondents who talked in the spirit of 'good health'.
- If we compare the conceptions of health with the American 'List' presented earlier, it turns out that the Hungarian descriptions were rather lacking in self-referent attributes. This finding agrees with the difference that existed in the case of the segmentation: the lack of the health-conscious segment from the Hungarian segmentation. From this we can certainly draw the conclusion that regarding the subject of health, in our country we have a problem not only along the 'ill health' / 'good health' axis, but fundamentally with the fact that people do not see their health as part of their self-management, the level of health consciousness is extremely low.
- Conceptions of illness are accompanied by experiences of failure and looking for a solution as fast as possible, but subjects did not talk about the need to live differently in order to avoid illness.
- Even though health consciousness is obviously at a rather low level, people have learnt that the – risk-free – steps one can take for health include exercise and diet, but this is contrary to their behaviour.
- Smokers know that they should quit, yet they do not, and each of them has an explanation for this: most often they cite –rather briefly and succinctly – lack of time, lack of company, and lack of money.
- It is primarily women who are open to messages concerning health, they are the ones who take these messages into the family, or for whom this is a topic of conversation in smaller communities. It is not so for men.
- Respondents receive health messages mostly from commercials; these are very effective vehicles of communication. Besides these, even though respondents claim there are few programs devoted to health, they also mentioned e.g. educational programs.
- The preferred informational channel is the Internet, in spite of the fact that respondents could not recount an Internet-experience related to health. The second channel in order of preference is television.

- Persuasive campaigns failed in the small sample; smokers strongly distanced themselves from anti-smoking campaigns.
- On the basis of the opinions concerning alcohol we can say that for communication aiming at change of health behaviour, an entirely different approach needs to be worked out from that in the case of smoking.
- Pharmaceutical advertisements had extremely high recall in the sample. People usually read the informational leaflets of drugs, and within that, mostly the information about side effects.
- The free brochures and flyers placed in doctor's offices and pharmacies can be important health communicational materials, respondents were generally open towards these.
- With regard to changing health behaviour we found that smokers generally do not display willingness, or are not able to quit their harmful habit.
- Several of them do not admit the addictive character of their smoking, instead they cover up their behaviour by the illusory explanation that they can stop smoking any time they want (only, they do not want to).
- A new phenomenon compared to earlier similar studies regarding how smokers think is that fear from social exclusion has appeared – they perceive discrimination against smokers. We found the counterpart to this among non-smokers as well: openly attacking smokers on account of their smoking.
- If I had to place the smokers in this small sample in the model of periodic change, I would put the majority in the “entrance hall” of the period of pre-contemplation. We have two subjects who are already a bit ahead, because they have already made an attempt at quitting, and they were open to receiving help.
- Experiences obtained in other areas of health behaviour pertained to changes which did not incur any particular sacrifice, effort, or giving up earlier pleasures, yet very positively contributed to the feelings of self-efficacy on the part of subjects (e.g. avoiding certain chemicals).

Summary of the content analysis

- The content analysis is an attempt at seeing what propositions may yield a better understanding of phenomena and a more precise definition of objectives in a research conducted on a larger sample.
- I conducted my short inquiry with reference to the following variables: Denial, Illness, Health, Opportunity, and Avoidance.
- A surprising result of the content analysis is that the variable around which the largest number of words came up was Denial.

Summary of the motivational interview-based study

- With this approach we examine the level of openness to changing one's behaviour through the linguistic elements of motivation.
- In the current analysis I paid attention to the linguistic elements of commitment, which are the following: expressing desire, statements concerning ability, arguing for a specific reason, and expression of need.
- It was the expression of desire that was present in the weakest form in the sample, and arguing for a specific reason was present in the richest form. This also indicates that on the cognitive level the recognition that one should change one's behaviour is very strongly present.

Conclusion, research perspectives

Final summary and comparison with the results of the original model

It was visible in the data reduction phase of the segmentation process that certain groups of variables coagulate with each other differently in the two samples. One significant difference is that while in the USA the social supportedness of smoking and alcohol consumption are two separate variables, which do not coagulate into one factor, in Hungary the perceived social help and group norms are part of the same factor. The case with determinants of internal/personal behaviour is the opposite, here similar to the American results we also find that smoking and alcohol consumption get organised into separate factors. With regard to the social effects, the differences between the two countries are greater than in the internal/personal dimensions.

The healthstyles created by the American and the Hungarian segmentation methods display more similarities than differences. At the same time, it was verified in connection with the segments that the health consciousness of Hungarians needs to be improved; the health-conscious 'Physical Fantastics' segment, which comprised 24% of the examined population in the American study in 1996, is entirely missing in our country. It should be noted that on the other hand, the Hungarian segments of Self-Destructive Nihilist and Careless Gourmet are absent in America. Another reason why it would be important to repeat this study in a few years' time is to see whether this group appears here as well as an independent prominent segment. This difference was also confirmed by the qualitative research, where we compared the health-conceptions of Hungarians with the American 'health-list': we found an almost complete lack of self-referent attributes as opposed to the rich American set of attributes.

The validation of healthstyles was done by the same variables in the US and in Hungary, and yielded similar results – it became clear in both applications that the healthstyles approach had much higher predictive ability concerning health-related behaviour than the socio-demographic approach.

In spite of the fact that „only” approximately 30% of the entire population are smokers, in the course of the health segmentation smoking proved to be a fundamental segmenting factor: we could identify 4 smoker segments in Hungary, in the American sample out of the 7 segments 3 were smokers to some extent, but it did not have this kind of segmenting ability. Similarly, in America they did not have the kind of results we got in terms of sexual identification – in our sample every segment is either ”feminine” or „masculine”.

It is not a segmenting variable in the segmentation process, but in order to make the individual segments visible as precisely as possible based on their health behaviour, similarly to the original model we recorded the data necessary for calculating body mass index and we calculated the index. A rather substantial part of the sample, altogether 4 segments are in the overweight domain based on their average BMI values. The American results did not contain detailed information about this, all we know is that in the US the average BMI is 28, while the same index in the Hungarian sample is 25,9.

In connection with prospects of behaviour-change, both the qualitative and the quantitative results show that those who display more willingness to change are those who are generally more motivated in every regard, while those people who are at risk with regard to a certain issue most often do not even perceive that risk.

The qualitative research indicated and it was not disproved by the quantitative results that health, even though it is a basic category of value, is not consciously perceived as part of self-management; it is not an area which (or its several constituents) would continuously require proactive activities; it is more of a natural basis, which only becomes perceived on a conscious level by way of its dysfunctions.

Novelty of the dissertation and its methodological foundation

The groundwork of the research presented in this paper is a study conducted in the US some 10 years ago, which describes how it is possible to do target group segmentation based on lifestyle characteristics related to health – as opposed to the generally employed socio-demographic determination– applying it primarily to the area of health communication. This was a completely new, till then non-existent approach and method.

The foundation of the segmentation method is behaviour explained on social cognitive bases, which, according to the theory, is determined by social, environmental, and internal, personal characteristics or is in close interaction with these (Bandura, 1986). The most significant novelty of the research lies in the behaviour-based approach to the target audience and its division based on the operationalised variable matrix of the theoretical model.

Building from these, we obtained segments or ‘healthstyles’, meaning groups that are homogenous and markedly different from each other in terms of their health-related behaviour and attitude.

Beside the complex health-behaviour based-segmentation, the other novelty and outstanding contribution of the paper, partly stemming from what has been said above, and described in the section about validation, but having significance far beyond validating results is that the ‘healthstyle’ segments are better predictors of health-related behaviour than socio-demographic variables.

The main motivation of the healthstyle segmentation was to create a tool which can facilitate effective health communication and social marketing programmes. Healthstyle segmentation, as a tool, is able to perform the following functions:

- Identifying the spectrum of the potential target group (those groups of people who can be expected to react in a similar way to a certain program)
- Obtaining a thorough understanding of the way the various target groups think, behave and feel in connection with health
- Offering a chance to select a narrowed-down target group
- Providing an opportunity and a framework for planning health-behaviour changing programs and offers that can be attractive to the selected target group
- If the segments are already known, there is also an opportunity to identify and distinguish those channels through which these segments can be reached (including various media channels, interpersonal channels, commercial – 'point-of-purchase' – channels, possibilities of linking to other products or services, etc.)

Connecting or fusing the healthstyle database with other databases offers a chance to take advantage of certain benefits that also aid the effectiveness of health communication.

Next applicability

The structure of the method is extremely logical and clear-cut, it can be repeated any time, the factor and cluster analyses can be done any time by using SPSS.

Verification of hypotheses, comparison with issues raised

The basic theorem and primary hypothesis which the model discussed in this paper builds on is that we can identify segments that follow from the threefold mutual determination of behaviour-internal personal factors-external environmental factors. This hypothesis was verified by the paper, the segments could be created.

The other hypothesis was that the individual segments have different attitudes to health communication. We got clear indications of this hypothesis from the small-sample qualitative research, but the quantitative research only provided us with

indirect proof (via openness to changing behaviour, and media consumption habits). For the final verification of this hypothesis we would need to conduct further inquiries.

The third hypothesis was formulated as saying that segments created this way are better predictors of health behaviour than mere socio-demographic variables. This hypothesis was verified as well – thereby opening the ground for great developments in the field of health communication planning and initiatives.

Limitations of the study

According to those criticising the original model (Stacy, Bentler and Flay, 1994), there can be a significant difference in the relationship of attitude and behaviour depending on exactly which population gets to be examined. This can be more of a critique of the model in the US than in Hungary, since the US has populations of substantial sizes that differ from each other significantly both culturally and in terms of their socio-demographic background; this holds less in Hungary. It is a fact, however, that social relations and judgements change over time, and it is a relevant dilemma to what extent the research reflects a stable segmentation, and to what extent a momentary situation, a cross-sectional proposition – this can only be decided by further research. The other limitation is the relative complexity of the method, in the future, the creation of clusters should be simplified.

Possibilities for further use

It would be important to repeat the segmentation to find out how stable the groups are or whether they have changed over time; we also need further inquiries to prove the stability of the method's predictive ability.

A desirable follow-up to the segmentation survey would be a motivational study; the current qualitative study comprised of in-depth interviews that was used for this paper – or a similar one – would be a good foundation for this in terms of its topics; combining the results of the motivational study and the segmentation could shed light on the motivational characteristics of the segments, as well as yielding further valuable findings for example about their position in the change model.

In connection with the American model that served as the foundation, the authors found that even though its usefulness is clear and its virtues are unambiguous, it drew a relatively low level of interest within the field of health communication. The solution to this problem can be having the people working on the theoretical model already from the initial phase of improving or implementing the model cooperate with the practical experts who can thus assert their own requirements as well in the course of the development.

Concerning the further applicability of the model, it is promising that healthstyle, as one of the most important predictors of health behaviour, determines multiple aspects of behaviour: characteristics of food consumption, consumption of consumer goods (it helps in predicting this), to some extent even pharmaceutical consumption, besides, it provides information about certain leisure activities as well as predicts those.

With regard to institutional applicability, it is beyond doubt that the financial resources available for public health communication are limited – but at the same time it is also a fact that regarding health behaviour, the challenges are great; it is imperative that public health communication efforts be designed using the best planning technologies available, maximising the chance that truly effective interventions will be achieved – and the best aid in this is precise and relevant segmentation.

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