

How to Strengthen Health Intelligence?

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Henryk Mruk*

Health intelligence is understood as undertaking conscious actions to nurture one's own health and the quality of life. It involves responsibility for the effective management of one's own health and life. People should use the knowledge and research findings to take care of their physical and mental condition. This involves proper nutrition, developing oneself, using cultural assets and building relationships with others. It may be helpful to support people with solutions derived from behavioural economics. The development of information technology and artificial intelligence can also contribute to the strengthening of health intelligence of individuals.

Keywords: health intelligence, personal responsibility for one's own health, managing one's own health.

Sposoby wzmacniania inteligencji zdrowotnej

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Inteligencja zdrowotna jest rozumiana jako podejmowanie świadomych działań na rzecz pielęgnowania własnego zdrowia oraz jakości życia. Łączy się ona z odpowiedzialnością za skuteczne zarządzanie własnym zdrowiem i życiem. Człowiek powinien korzystać z wiedzy i wyników badań, aby dbać o własną kondycję fizyczną oraz psychiczną. Dotyczy to właściwego odżywiania się, rozwijania siebie, korzystania z dóbr kultury oraz budowania relacji z innymi. Pomocne może być wspieranie ludzi rozwiązaniami pochodzącymi z dorobku ekonomii behawioralnej. Rozwój technologii informatycznych oraz sztucznej inteligencji może także służyć wzmacnianiu inteligencji zdrowotnej pojedynczych osób.

Słowa kluczowe: inteligencja zdrowotna, odpowiedzialność osobista za własne zdrowie, zarządzanie własnym zdrowiem.

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* **Henryk Mruk** – Professor PhD (habilitated), Poznań University of Economics.

Correspondence address: Poznań University of Economics; Al. Niepodległości 10, 61–875 Poznań



1. Introduction

Health is usually mentioned as one of the most important values in the life of a human being. Interesting, however, is the discrepancy between declarations and the actual behaviour of consumers. People claim that they care about good health, but they rarely act rationally in making everyday decisions. They do not change their habits until faced with an illness. Knowing that such behaviours are inherent in human nature, it is worth undertaking research to find ways to strengthen citizens' health. This is all the more justified in view of the accelerating ageing of societies in Europe. Similarly, the costs of healthcare are growing, also due to the introduction of new, more expensive medicines and medical technologies. Consumers are interested in a high quality of life, youthful appearance and good health. Owing to limited resources devoted to healthcare, consumers will have to be supported in their efforts to properly manage their own energy and health. The purpose of these considerations is to present ways to strengthen health intelligence. The considerations build on a body of diverse literature, including secondary sources. They are also embedded in experience from working with various entities, conversations and my own observations. The methodology includes logical reasoning, comparative techniques and abstract thinking. First, the paper takes a look at the essence of health intelligence and determinants of patients' behaviours; it ends with a critical view of the ways in which consumers consciously shape their own health.

2. Health Intelligence – Essence and Determinants

Several types of intelligence are distinguished in different studies related to human cognition and behaviour (Jerzyk, Leszczyński & Mruk, 2004). Most attention is paid to considerations regarding the intelligence quotient. In the field of business, creativity and emotional intelligence are researched (Goleman, 1999). Likewise, we can look attentively at the concept of health intelligence (Vetulani). It is a new type of intelligence, undoubtedly worth a deeper reflection. This term enriches the scope of considerations related to intelligence in its broad sense. When considering the issues of intelligence, we should take a critical view, because people's behaviour depends on many different factors and nothing should be treated too categorically. Therefore, it is worth taking into consideration a critical view of the essence as well as determinants of health intelligence. Health intelligence can be defined as the level of awareness and all activities related to the knowledge of signals sent by the body, responding to new developments and consciously taking action to preserve health and a high quality of life. Health intelligence is also the ability to focus on one's own health, listening to one's own body, understanding one's physical and mental condition. Similarly to everything that is qualitative, health intelligence is difficult to define precisely. It is

worth conducting discussions on this subject, because health intelligence should be strengthened using various instruments.

One of the basic questions with regard to health intelligence may relate to the knowledge about the relationship between innate and acquired qualities. The concept of “factory equipment” may suggest that the abilities people are born with are of fundamental importance (Gazzaniga, 2013). Even if innate abilities are vital, they are not the only factor that affects life expectancy, health and pain-free functioning. A person may be born with the ability to listen to their own body and lead an unhealthy lifestyle, drowning out an inborn talent. It may also be the case that an individual does not have high health intelligence but invests time and resources in proper health management. It is one of the numerous research questions that we can ask and look for answers to.¹ Besides defining health intelligence, it can also be crucial to look for measures to assess the level of and factors influencing health intelligence. Interestingly, people easily use the advice of others, seek help from various types of healers (Tibet, India) and are less determined to rationalise their actions and use the advice of physicians.

3. Responsibility for Health – The Most Important Factor

In ancient times, the “caveat emptor” principle was applied in the merchant business. It was a kind of warning, namely: “Let the buyer beware”. In the 21st century, the concept of marketing with a slogan putting customers at the centre of the company’s attention is highlighted. This should be understood rather as a reversal of the value chain – from consumers and their needs as the beginning of the management process. Such an approach implies a shift of paradigm, because in the past it was the manufacturing sphere that was the starting point. Election programmes of political parties can distract citizens’ attention from their own responsibility for their life and health. Reality, however, paints a different scenario. Governments will withdraw from taking responsibility for the health of citizens (Pacenti, 2015). The share of health spending in the GDP structure exhibits an upwards trend. In 2018, there was a discussion in Poland to increase this share from 4.8% to 6% in 2020. Although undoubtedly beneficial for the society, such an increase will not guarantee satisfying the growing needs in this area. In many affluent European countries, this share amounts to 11%, but this does not ensure shorter queues to physicians nor a widespread use of new, often expensive, medical technologies. This means that we should become aware of the need to be more interested in our own health and to take action to change our lifestyle. The problem is that people know much more about nature and the world around them, but they continue to have very limited knowledge about themselves (Landes). In order to balance the efforts of the state with those of consumers, it should be considered appropriate to inspire relevant entities to acquire knowledge about human nature. Behavioural

economics proves that consumer decisions are rational to a limited extent (Thaler, 2012). For the most part, they are emotional. This means that one of the most significant ways to support human health intelligence will be to make people aware of the methods for rationalising decisions (Ohme, 2017). Owing to the use of various types of “nudges”, the emotional sphere is supported by rational decisions (e.g. partial reimbursement of an insurance premium if a person quits smoking, undergoes regular preventive medical check-ups). The cited example illustrates the directions of research into understanding human nature and supporting health intelligence of the human being. Being aware of these determinants, we should take action to present the problem in an honest way. The state will bear some responsibility for citizens’ health, but the citizens themselves should behave rationally and show concern for their life and health. The win-win situation translates into the responsibility and commitment of the insurer, the payer, but also – to a higher extent than before – the consumer.

Due to the development of new technologies, it is necessary to view all information critically. In the past, censorship consisted in withholding information, while in the 21st century it involves sending information to individuals. In 2018, the media reported bots that may have influenced US election results. In Poland, information that undermines the purpose of child vaccinations is being sent out. It is not known who is behind this information. A 21st century war can be waged in the form of various cyber-attacks. A society that receives information of unknown origin from the web may fall into health problems. This is by no means an easy task, but health intelligence calls for exercising common sense. Health intelligence is the conscious use of an internal doctor that all human beings have inside themselves. Conscientiousness, forethoughtfulness, planning and consistency are recognised as essential elements of supporting one’s own health intelligence. It is appropriate to manage one’s consumption over the course of entire life. People are reluctant to accept restrictions. They think that they will live a long, healthy life in the world of desserts. Much more self-control with regard to individual behaviour is needed. Seeking information about the lifestyle in Japan or Sardinia, where the highest average life expectancy is recorded, will serve little purpose if people do not start to change their behaviour. It is important to introduce these changes right away, not starting from tomorrow, and to abide by the resolutions made, which is not easy, either. About 75% of people stick to their new habits for one week. It is an element of human nature. The point is to look for ways that will help increase health intelligence of an average person.

4. Social and Individual Immune System

Organising the social and economic sphere based on facts produces better results than being guided by fiction (Harari, 2018). People, however,

distance themselves from facts and are more eager to use stereotypes, advice of casual people and information on the Internet. Actually, research makes it possible for people to learn the truth and be guided by facts. It is quite understandable that the development of science broadens people's knowledge about health. The change in procedures followed by physicians in the wake of discovery of bacteria translated into reduced patient mortality. At first, physicians did not want to accept the fact that they could infect patients if they did not wash their hands and overalls. With the development of knowledge, the effectiveness of outlays for health will grow. This should be understood in terms of the operation of health service providers but also of individual patients. It turns out that human health depends on the immune system to a larger extent than it was previously thought (Schwartz, 2018). Research suggests that people can boost their immune system potential by engaging in physical activity, limiting the calorific intake and regularly training their mind. In line with the title of this part of the paper, the strength of the immune system rests with individual decisions, and with the social environment alike. The technological development, growing wealth and other factors alter the conditions in which people function. In the era of gatherers, the stomach sent a signal of hunger two hours in advance, allowing people to look for food. In 2018, it takes 10 seconds to reach the fridge in many households. In view of changes in equipment people use, it is necessary to work to modify habits. Houses heated by tiled stoves offered different conditions than flats with central heating. Also in this area people will need knowledge about changes in behaviour to enhance the immune system by impacting the temperature and humidity at home. In September 2018, the Polish Central Statistical Office (GUS) released information on the increase in the consumption of high-percentage alcohol in Poland in 2017, accompanied by a decrease in the consumption of fruit and vegetables. Thus, the actual behaviour of consumers is in contradiction with physicians' recommendations regarding nutrition. There are fewer off-licence shops in the entire Norway (population of 4.5 million) than in Warsaw (2.5 million). Removal of restrictions on the offer of school shops facilitates the purchase of products that are less healthy for children. In the 21st century, sugar kills more people than gunpowder. Limiting the possibility to purchase products that are less beneficial to citizens' health is an element in the creation of social habits to increase responsibility for the health of individual persons. Some European countries impose the so-called sugar tax. The introduction of such a tax is under discussion in Poland, too. It is crucial that the tax flow to the budget of the Ministry of Health, not to the general budget of the Ministry of Finance. It would be worth considering the allocation of some of the proceeds from such a tax to educational and preventive activities. It is one of the ways to strengthen the social sphere in terms of increasing health intelligence. It would be reasonable to work on the development of effective legal, social and behavioural tools that will contribute to raising

awareness related to the management of own health. Such initiatives are undertaken in various countries (USA, Great Britain). At the government level, units are established and tasked with the implementation of tools that assist citizens in rationalising their health-related decisions (Thaler, 2018).

5. Consumer Education as an Investment in Consumer Health

The functioning of human mind is dominated by short-term goals. It is difficult and highly complex to make decisions from a strategic, i.e. long-term, perspective. For many people, health seems to be a freely available resource – like air or gravity. In the state of weightlessness, astronauts exercise two hours a day to keep fit and are also supported by a proper diet. In winter 2017, an alarm was raised in Poland due to the exceeded air pollution standards. However, changes to improve air quality are not easy to implement, nor can this goal be achieved in a short time. The same applies to citizens' health. Media report a growth in the number of overweight and obese individuals as well as reduced mobility of many segments of people. However, long is the journey from diagnosis to cure. A central role should be assigned to proper education of the society. Numerous research findings prove the correlation between the level of education and the quality of health, as exemplified by gout incidence. In the past, this disease occurred mainly among the gentry who consumed meat, fats and alcohol. In 2018, in Poland, gout is diagnosed mainly in the segment of people with a lower level of education. It turns out that raising awareness, committing to change the diet, increasing physical activity and mental resilience can extend life even by several decades (Servan-Schreiber, 2016). The cited author describes his own case. When, at the age of 31, he was diagnosed with a brain tumour, he invested his time to change eating and mental habits, which allowed him to live for another twenty years. We are aware that each case requires individual treatment. However, it is always worth considering different experiences. In the above-discussed case, changes to be considered relate to the following areas:

- building mental power, i.e. focusing on facts (e.g. I have a tumour – it is a fact – what can I do? – a challenge),
- changing the diet, eating habits,
- developing appropriate physical activity habits (movement, breathing, exercises),
- boosting the mental sphere (self-confidence, positive thinking, meditation),
- building social ties, strengthening social and family relations.

Human nature does not favour perceiving one's own health in the long term. It will, therefore, be all the more appropriate to focus on finding ways to educate citizens about their own responsibility for health and the quality of life.

6. Behavioural Determinants of Consumer Behaviours

Since the primitive community, people have accumulated knowledge about the world, but their behaviours continue to be dependent on traditions, stereotypes and random information. Efforts to develop health intelligence call for the support of the state and many institutions; furthermore, they require that consumers organise themselves. It is typical of the economic sphere that individual entities are interested in achieving their own goals. Pharmaceutical manufacturers want to sell their products, and to this end they use a variety of tools, predominantly advertising. In 2018, nearly half of total advertising spending originated from the pharmaceutical industry. At the second highest level stood the expenses of producers of food products. Although consumers do not admit it, advertisements have a significant impact on their purchasing decisions. Information asymmetry between producers and consumers renders it difficult to make rational decisions (Nestorowicz). Restrictions on advertising for pharmacies further aggravate the asymmetry, because consumers receive only unilateral messages. Each advertisement is accompanied by a clause on the need to consult a physicist or pharmacist, but this message is of minor relevance (Lindstrom, 2009). When considering the issue of health intelligence, several helpful tools can be identified. However, the effects of such actions will be slow to appear, which implies that they should be carried out consistently, patiently and systematically. It is worth benefitting from the experience of other countries, bearing in mind that everything must be adapted to Polish conditions. One of the ways to improve health intelligence is by developing the right culture of the country. Students taking part in a survey conducted in Poland indicated the Netherlands as a country with a highly health-promoting culture (Barańska, Mruk, 2018). The respondents emphasised the commitment of the Dutch people to engage in physical activity, spend time outdoors, refrain from buying medicines and apply natural methods to support health (hot water, staying in bed for 1 to 2 days). Such measures produce results in the long term. It may be considered appropriate to establish a unit at the governmental level to develop and systematically implement a programme for the development of a health-promoting culture. There is a wide range of communication tools that can be used. To the issues discussed in this paper relates education, including the development of health-promoting habits (Duhigg, 2013). The reference point may be Finland, whose education system is recognised as a blueprint in the world. We are not talking about copying anything here as developing own solutions is much more effective. For this purpose, it is helpful to take advantage of other countries' experience. The changes will commence with teaching staff. Talents are distributed differently, and it will, therefore, be crucial to single out appropriately talented people to perform the tasks. In the army, candidates for commanders are sought to carry out tasks. There are methods that allow this. A trained team of commanders

is a key success factor. A similar line of reasoning should be followed in case of education. We know methods for acquiring candidates who will be effective teachers. An appropriate remuneration system (teachers in Finland earn the highest salaries) will ensure high effectiveness of task performance. It is important to define goals related to health-promoting behaviours in syllabuses. Focusing on current problems marginalises strategic issues. Consumers, and governments alike, count current revenues, spend money on immediate needs and think less about health in the long-term dimension. Thus, it will be important to reverse the value chain also with regard to health. Health and the quality of life should be put to the fore, and be followed by everything that affects them. The health consequences of the lifestyle that young people lead are seen after several decades. School, teachers, health-related educational programmes are vital, because the role of the family and its impact on health-promoting behaviours have weakened. Employers could also be expected to support health intelligence, In the 21st century, enterprises engage in activities that are part of the Corporate Social Responsibility (CSR) programmes. Many of them are focused on achieving external goals (ecology). However, these goals can be – and more and more frequently are – associated with health education of employees. Also, social and non-governmental organisations are getting increasingly involved. Such programmes could also be effective if they were to a larger extent developed and implemented by the Church, which enjoys a strong position in Poland and generally offers appropriate infrastructural equipment (rooms). In rich societies, the percentage of volunteers is on the rise. Properly combined, these two factors can produce very good results.² The wealth level achieved in the affluent countries at the beginning of the 21st century is changing the awareness of a growing number of people (Dennett, 2017). And this will be a factor responsible for the abandonment of accumulation of material goods in favour of greater care for health and the quality of life (Wallmann, 2017). However, these processes will be slow.

7. Technologies in Support of Health Intelligence

Technological developments can contribute to enhancing interest in supporting one's own health. This is an area that can be the subject of many different studies. Machines can administer first aid on battlefields or motorways. New methods of organ transplantation are available, and certain organs are replaced by artificial limbs or other parts, including laser-printed ones. These are issues from a different, technological level of health and the quality of life. When dealing with health intelligence, we can point to methods that are applicable to individual persons. Smartphones are provided with applications that can monitor many human health parameters. Smart diapers can analyse a child's urine and send signals to a physician. Artificial intelligence turns out to be much more effective in

diagnosing diseases than medical doctors. In the US, 1.7%, i.e. 5 million, prescriptions are every year incorrectly dispensed by pharmacists. A robot dispensing prescriptions never makes mistakes. These examples illustrate the opportunities offered by the evolution of technology, which can lead to hardly imaginable changes. It may also be that medicine will support healthy people so that they are even healthier (Harari, 2018). The above-mentioned author refers to the case of Angelina Jolie, who performed DNA tests and, based on them, decided to remove some of her organs that could be a source of cancer cell development. The Internet contains more and more information about health and the quality of life. It is not known what proportion of this content is based on facts, and what is devoid of any scientific basis. Consumers will search the Internet to find answers to emerging health problems. Artificial intelligence can predict an influenza epidemic a few days before it is announced by the administrative authorities. When influenza begins, people first look for advice online, text each other about running nose, headaches, etc. On this basis, the algorithm knows what will happen. Intervening in the Internet world to support health intelligence poses a considerable challenge for some entities. There are no simple answers how to do it effectively. It is worth setting up diverse experiments to improve the various ways to support consumers' care about health and the quality of life. People will willingly go to see a physician when they suffer from a kidney stone attack. However, men who feel testicle pain will first search the Internet before they find it in their heart to go and see a doctor. A blog run by a medical doctor can be a source of reliable information (Scott, 2015). A portal where people who have undergone testicle cancer surgery can exchange information and support each other is invaluable for them. Recording exercises during a visit to a physiotherapist increases the effectiveness of activity at home. Technologies, although they carry many risks, can also be an important support for people who want to enjoy a long, healthy and painless life.

8. Conclusion

Entering a forest, we often see “better prevent than extinguish” boards installed by forest services. The same can be offered to people – preventive tests, looking at their own health from a long-term perspective. Few people take such advice to heart, even fewer follow it in their behaviour. Of course, we mean the reference to the sphere of health. When health intelligence is discussed, it is necessary to realise that the human nature is weak. Knowing the various limitations, we should work on ways that will support people in managing their health. This study pointed to the significance of education and the use of appropriate stimuli (so-called “nudges”) that will enable consumers to view their behaviours from the perspective of their entire lives. An appropriate diet and lifestyle allow for avoiding diseases and

enable a better quality of life. In addition to the physical realm, the mental area should also be kept in mind since the number of people who attempt suicide is on the rise. There is also a growing demand for mental health counselling (psychology, psychiatry). In the organisation of societies, a lot of attention is paid to growth rates and the GDP level, while research on social relations is scarce (Rist, 2015). The considerations concerning health intelligence fall within a stream of an emerging trend within which life expectancy, health and its quality are becoming real, and not just declared, values for the homo sapiens species.

Endnotes

- ¹ Research problems that R. Thaler posed himself, which have led to many interesting discoveries and the award of the Nobel Prize in 2017, could be treated as a reference problem – R. Thaler, *Tworzenie ekonomii behawioralnej [Misbehaving: The making of behavioural economics]*, Media Rodzina, Poznań, 2018.
- ² Worthy of mention at this point are the achievements of Waclaw Bliziński, parish priest in Lisków (near Kalisz and Turek).

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