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# Time perspective as a factor determining health care and the risk of disorders

## Perspektywa temporalna jako czynnik ochrony zdrowia i ryzyka zaburzeń

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### SUMMARY

The aim of this paper is to present the Time Theory by Zimbardo and Boyd in relation to health and health behaviours in adults. Particular perspectives and their mutual configurations are addressed both as an important resource, and as a potential disorder risk factor. A review of empirical research results and collecting the existing, although fragmented, data allows to propose specific practical applications. It is suggested that the individual time perspectives and the identified developmental trends should be taken into account in creating prophylactic programmes which are aimed at containing harmful behaviours and development of disorders, as well as promoting activities and attitudes facilitating retaining full psycho-physical health. Taking such measures can increase the effectiveness and longevity of possible interventions.

**Key words:** time perspective, health, disorder, ZTPI

### STRESZCZENIE

Celem opracowania jest prezentacja opracowanej przez Zimbardo i Boyda koncepcji perspektyw temporalnych w kontekście zdrowia i zachowań zdrowotnych osób dorosłych. Wskazujemy na poszczególne perspektywy i rozpatrujemy ich wzajemne układy podkreślając, iż mogą być ważnym zasobem lub stanowić potencjalny czynnik ryzyka rozwoju zaburzeń. Dokonany przegląd wyników badań empirycznych i zebranie dotychczasowej, dość rozproszonej wiedzy na ten temat pozwala zaproponować konkretne rozwiązania praktyczne. Postulujemy uwzględnienie indywidualnych perspektyw temporalnych oraz rozpoznanych trendów rozwojowych w budowaniu programów profilaktycznych, mających na celu ograniczenie szkodliwych zachowań i rozwój zaburzeń oraz upowszechnienie działań i postaw sprzyjających zachowaniu pełni zdrowia psychofizycznego. Pozwoli to uczynić ewentualne interwencje skuteczniejszymi i trwalszymi w czasie.

**Słowa kluczowe:** perspektywa czasowa, zdrowie, zaburzenie, ZTPI

## Introduction<sup>1</sup>

It may be observed that quite often everyday human behaviours and choices seem to differ from being rational (Kahneman, 2012). Although harmful effects of smoking, ingesting excessive amounts of sugar and fats on daily basis, lack of physical activity or avoiding prophylactic medical examinations are a common knowledge, it seems to be a 'dead' knowledge to many people. It neither affects their lifestyle nor daily routine. How may it be accounted for? Contrary to popular belief, it is not deprived of some inner-logic; especially if one remembers that a specific and important feature of human activity (including pro- and anti-health behaviours) is the so-called subjective time perspective. The knowledge of the perspective provides grounds for proper planning of preventive and psychoeducational interventions focused on health care of individuals or even populations. Moreover, the empirically established relationships between specific time perspectives and the risk of developing particular psychophysical disorders make it possible to prevent the latter in early stages.

**Aim:** To present the Time Theory by Zimbardo and Boyd in relation to health and health behaviours in adults.

### Risk factors and health care factors

According to the classic model proposed by George Albee (1982, 1984), the possibility of pathological states occurring depends on the ratio of risk factors and preventive factors capable of compensating the former. The probability of pathological states manifesting themselves is described by the so-called risk equation; the probability increasing with the intensity of risk factors and scarcity of

protective resources to compensate (Czabała, Sęk, 2002). Therefore, it is the ratio of both kinds of factors that determines the probability of pathological state occurring, be it mental or somatic disorder.

Pursuant to the holistic framework of describing health conditions as presented by the so-called mandala of health (Hancock, Perkins, 1985) factors from both groups are to be understood broadly. They may be divided into four general groups of factors:

- biological – e.g., genetic predisposition, congenital conditions, immunological system functioning, body build, etc.;
- psychological – e.g., factors increasing the levels of experienced stress and disturbing development, adverse motivational and behavioural models (e.g., type A personality), lifestyle<sup>2</sup>, tendency to hazardous or preventive actions;
- social – e.g., socio-economic status, social support, social-economic-cultural system;
- ecological – physical environment and conditions of everyday living (e.g., pollution, housing, work environment).

The holistic reflection on health and psychophysical immunity demands considering the spiritual sphere as well (Heszen-Niejodek, Gruszczyńska, 2004). It is also required to persist in identifying other significant psychological factors that may be crucial in regaining and maintaining health.

In the presented work we concentrate first of all on psychological factors – however, it should be underlined that in compliance with a holistic approach all groups of factors are in exact dynamic relationships. For example, up to the mandala of health model (Hancock, Perkins, 1985), personal behaviours are the resultant not only of individual factors (represented by such concepts as: body, mind,

<sup>1</sup> The study was realized within the project (reg. no. 2015/18/E/HS6/00346) funded by the National Science Centre.

<sup>2</sup> Hancock and Perkins (1985, p. 8) stress that lifestyle is not the same as personal behaviour. Rather, it is personal behaviour as influenced and modified by and constrained by, a lifelong socialization process, and by the psycho-social environment, including cultural and community values and standards.

and spirit), but also are modified by lifestyle or psycho-social environment, in this also the culture and values acknowledged in the given family, community and transferred in socialization process.

### The Time Theory and the concept of time perspectives in the context of health behaviours

According to the Time Theory (TT) by Zimbardo and Boyd (1999, 2013) and the concept of time perspectives (TP), the way in which individuals perceive time – and what is their attitude towards their own past, present and future – influences their outlook on life, as well as decisions they make. Everyday choices are not always conscious, yet very often they can profoundly impact our health, for example: *Should I have my doctor examine me prophylactically? Should I knock one more back before heading home? Have safe sex or go happy-go-lucky? Would I undergo a therapy that requires long and systematic medication? Can I deny myself one last cookie?* Individuals making such decisions employ numerous markers, and the relation to dimensions of time is – according to Zimbardo and Boyd – a fundamental one. People who, while making choices, consider only current circumstances (things that seem attractive at the moment; what they are being talked into or what they witness being done by others) are present-oriented. Others in the same circumstances fall back to similar situations from their memories. They recollect what they have done and what the results of their decisions have been. That knowledge serves as the point of reference for the situation at hand. These individuals are past-oriented. A third type may also be distinguished – it comprises people who base their choices mostly on expectations of what may happen, future costs and gains. That type is considered to be future-oriented. Although each and every life is profoundly influenced by the individual's attitude towards time, people rarely realise the importance of their subjective time perspective. Time and the attitude towards it

(often eluding conscious consideration) constitute 'the hidden dimension' of all human activities, including decisions and health behaviours (Keough, Zimbardo, Boyd, 1999; Laureiro-Martinez, Trujillo, Unda, 2017).

Summarizing, time perspective (also called the temporal orientation<sup>3</sup>) is a psychological term denoting the outcome of the process of organizing and categorizing of personal experiences into time zones encompassing 'things' that were (past), that are now (present), and that will be (future), as well as individuals' subjective assessment of those experiences on the two continua: positive vs. negative and significant vs. insignificant. Time perspective forms in the course of cognitive development, and is affected by a panoply of factors, such as personal experiences, educational influences, social class, religion, place of living, peer and socio-cultural models, etc. In the end, an individual forms relatively stable tendencies to prefer, in his or her way of thinking, some time dimensions to others; thus establishing the co-called temporal profile.

Five most typical time perspectives, as distinguished by Zimbardo and Boyd (1999), are the following:

- **Past Positive** – a perspective related to positive evaluation of the past, drawing on the best from the past (feeling of happiness, gratitude, rooting and self-identity), frequent reminiscing and nostalgic recollecting the 'good old times'; although the past may sometimes be painful, it is perceived as the source of knowledge and lesson for the future;
- **Past Negative** – a negative view of one's own past, filled with regret, harm, guilt or failure, disappointment or resent; difficulty with freeing from hurtful memories (rumination);

<sup>3</sup> Zimbardo and Boyd tend to use the two terms interchangeably, pointing out that temporal orientation is understood as the dominance of a particular perspective on the past, the present or the future (the discussion on distinguishing these terms – cf. e.g., Bowles, 2017).

- **Present Hedonistic** – focus on what is pleasant and rewarding in the given situation, living the moment, not pondering consequences, actively looking for pleasures and attempting to escape pain or discomfort;
- **Present Fatalistic** – set in the present moment, experiencing it as unpleasant, overwhelming and impossible to be changed ('what will be, will be'), feeling as if one were sentenced to it (by fate, destiny, extrinsic force); it is related to apathy, lack of initiative and attempts to regain control over one's life, and it expresses itself in the feelings of hopelessness and helplessness;
- **Future** – the main focus here is on future goals and tasks (long- and short-term), realizing one's own aspirations, foreseeing possible consequences of the situation at hand (in the terms of gains and losses), an individual is full of hope and optimistic, but also – due to the unknown future – tense and anxious.

In order to identify which time perspective is the most characteristic of an individual – or to determine the dominating temporal orientation – and what his or her temporal profile is (setting and intensity of all time perspectives) a questionnaire was devised by Zimbardo and Boyd (1999). That psychological tool, called *The Zimbardo Time Perspective Inventory (ZTPI)*<sup>4</sup>, has been used all over the world for over 25 years. Having been adapted into many languages, it has allowed to gather a body of empirical data regarding correlational and causal relationships between time perspectives (measured on the following scales: Past Positive, Past Negative, Present Hedonistic, Present Fatalistic, Future) and other psychological variables, as well as behavioural tendencies. A synthetic presentation of previous

health-related research in adults constitutes the following part of this paper.

### **Temporal orientations, and some health related psychological and behavioural characteristic – research review**

The following charts compare descriptive results of research conducted by Zimbardo and Boyd (1999, 2013; Boyd, Zimbardo, 2005), as well as other researchers interested in the TT and using the method proposed by Zimbardo. The results are related to correlations between the scales of ZTPI (measuring the intensity of particular time perspectives), and select psychological and behavioural variables that are crucial to both health behaviours and well-being.

#### ***Orientation towards the past (retrospectivity) and health***

The key to an individual's well-being is not the factual event but the individual's attitude towards the event. The present interpretation of past events (as positive or negative) channels the emotional reaction to them, evokes specific physiological reactions and leads to specific behaviours.

If the negative interpretation of past events becomes referential, than the individual has a tendency to make decisions that are contingent on negative memories of similar situations from the past; that translates to elevated anxiety, anger, symptoms of depression, which – combined with decreased self-control – would most probably lead to aggressive and auto-aggressive behaviours (Zimbardo, Boyd, 2013). In such case it is also more likely that emotional states are regulated by extrinsic factors, what predisposes such individuals to addiction. The research show that lower satisfaction with life is typical of individuals with negative orientation towards the past. Furthermore, the latter is also related to more frequent complaints about health and significantly lower overall marker of mental health (Anagnostopoulos, Griva, 2012). Such individuals are also more probable to forfeit health

<sup>4</sup> In Poland the ZTPI questionnaire has been adapted by Przepiórka under the name *Kwestionariusz Perspektywy Czasowej*; a shortened version has also been adapted (comprising 20 items out of 56) under the name PS ZTPI (Przepiórka, Sobol-Kwapińska, Jankowski, 2016).

**Table 1.** Past perspectives (measured with ZTPI), and select psychological and behavioural characteristics (based on: Anagnostopoulos, Griva, 2012; Hamilton et al., 2003; Holman, Zimbardo, 2009; Zimbardo, Boyd, 2012, p. 78).

<b>Variable</b>	Individuals scoring low on <b>Past Negative</b>	Individuals scoring high on <b>Past Negative</b>	Individuals scoring low on <b>Past Positive</b>	Individuals scoring high on <b>Past Positive</b>
<b>Aggression</b>	Less aggressive	More aggressive	More aggressive	Less aggressive
<b>Anxiety</b>	Less anxious	More anxious	More anxious	Less anxious
<b>Considering future consequences</b>	More far-sighted	Less far-sighted	No differences	
<b>Conscientiousness</b>	More conscientious	Less conscientious	Less conscientious	More conscientious
<b>Depression</b>	Less depressive	More depressive	More depressive	Less depressive
<b>Emotional stability</b>	More stable	Less stable	Less stable	More stable
<b>Impulse control</b>	More controlling	Less controlling	No differences	
<b>Sense of self-esteem</b>	More confident	Less confident	Less confident	More confident
<b>Friendliness</b>	More friendly	Less friendly	Less friendly	More friendly
<b>Physical exercise</b>	Doing exercises more often	Doing exercises less often	No differences	
<b>Gambling</b>	Less inclined to gambling	More inclined to gambling	No differences	
<b>Social network, support and conflicts</b>	Greater sense of support	Lesser sense of support, more often conflicts	Less numerous social network, lesser sense of support	More numerous social network, longer-lasting relationships, longer support

assets that may be provided by physical activity, as they tend to give it up more often than others; likewise, they do not receive the full benefit of social support at difficult times, due to the fact that they usually have fewer friends (Holman, Zimbardo, 2009).

Individuals that rather positively reinterpret past events function differently (as shown in table 1); they are less aggressive, less depressive, more emotionally stable, open, and they establish closer relationships with greater ease. Is, then, the positive past orientation nothing but a source of resources enhancing psychophysical health? Can it also be a risk factor? Zimbardo and Boyd (2013)

indicate that retrospective individuals are inclined to maintain *status quo*, and are remarkably reluctant to change. If the past (tradition, family customs, life history) is cherished, evaluated as unambiguously positive, seen as defining to the person (source of identity), there may be difficulties in situations where in order to preserve or improve health it is necessary to introduce serious changes, as in the case of changing a lifestyle. The urge to preserve what used to work in the past may pose difficulty in opening to essential novelties (e.g., changing dietary habits, physical activities, or applying innovative diagnostic measure or medical therapy).

### ***Orientation towards the present (presentism) and health***

As one may find in the early studies by Zimbardo and Boyd (1999; Boyd, Zimbardo, 2005), individuals scoring highly on the Present Hedonistic scale could be described as searching for novelty, seeking strong sensations and highly energetic. This mixture of traits drives them to using psychoactive substances, and doing hazardous sports and physical activities (if only they seem pleasant). They desire pleasure and avoid distress without pondering the long term consequences. These individuals eagerly take risks and search for stimulating situations – in the context of investments, health and life choices (Jochemczyk et al., 2017).

People focused on the present are likely to have hard time keeping to their exercise routine, as well as coping with any discomforts related to it (Hall, Fong, 2003). It is not uncharacteristic of them to overindulge themselves with culinary whims and unhealthy choices since they value taste over nutrients. Griva and others (2015) point to the positive correlation between the intensity of this orientation and the levels of Body Mass Index (BMI). Likewise, the ill may also have difficulties in complying with therapeutic regime due to their desire of instantaneous satisfaction and avoiding discomfort. Furthermore, it is important to keep in mind the significance of patients' age (Sansbury et al., 2014).

In spite of that, the Present Hedonistic perspective is not to be considered explicitly a risk factor. Its relationship with health is not unambiguous. As the research by Hamilton and others (2003) suggests, in the case of the elderly stricken by coronary disease, strong Present Hedonistic orientation correlates with the sense of responsibility for one's health and activity in the field of interpersonal relations. It's further advantages (irrespective of age) are positive emotionality, generalised feeling of happiness and psychophysical well-being, as well as – in the case of an illness – greater acceptance and declared higher quality of life (cf. Król et al., 2015).

Fatalistic view of the present seems to be related to depression, aggression and anxiety. Individuals characterised by such orientation are also prone to complain about health problems (Daugherty, Brase, 2010). Being overwhelmed with the feeling of hopelessness takes away happiness and strengthens resignation. Lowered self-esteem, decreased levels of energy and persistence add up to the difficulty of improving individuals' current situation.

People focused on the present, on the need to achieve instantaneous relief or quick improvement in physical and mental state are particularly prone to addiction to alcohol, nicotine, narcotics, gambling, sex, shopping or food. The fact that aversive consequences are postponed causes them to be ignored by most 'presentists' when they decide to indulge themselves. Although they do know that such behaviours are harmful, it is too abstract an issue to give it a thought. They are not used to pondering situations in the categories of long-distance gains and losses. This may also be the cause of forfeiting potentially beneficial (pro-health) activities (e.g., physical exercise, systematic medical exams, injections) if they cause discomfort in the short run while the benefits are visible in the long run.

### ***Orientation towards the future (prospectivity) and health***

Future-oriented individuals are more eager to take up activities benefiting their health; they routinely undergo medical examinations, keep to healthy diet (prefer healthy food to tasty but unhealthy meals; have regular breakfasts), use creams with sunscreen, have protected sex, do exercise, care about appropriate body weight – which decreases the probability of obesity or diabetes in adulthood (Zimbardo, Boyd, 2013). Moreover, it is less typical of them to engage in potentially harmful activities, including smoking, drinking alcohol, taking drugs, eating too much, doing risky sports, reckless driving, or even argue or quarrel (Boyd, Zimbardo, 2005; Daugherty, Brase, 2010). In the case of any ad-

**Table 2.** Present perspectives (measured with ZTPI), and select behavioural and psychological characteristics related to health-oriented activities (based on: Holman, Zimbardo, 2009; Zimbardo, Boyd, 2012, p. 94).

<b>Variable</b>	Individuals scoring low on <b>Present Hedonistic</b>	Individuals scoring high on <b>Present Hedonistic</b>	Individuals scoring low on <b>Present Fatalistic</b>	Individuals scoring high on <b>Present Fatalistic</b>
<b>Aggression</b>	Less aggressive	More aggressive	Less aggressive	More aggressive
<b>Anxiety</b>	No differences		Less anxious	More anxious
<b>Considering future consequences</b>	More far-sighted	Less far-sighted	More far-sighted	Less far-sighted
<b>Depression</b>	Less depressive	More depressive	Less depressive	More depressive
<b>Vigour</b>	Less energetic	More energetic	More energetic	Less energetic
<b>Impulse control</b>	Lepiej controlling	Less controlling	More controlling	Less controlling
<b>Preference for regularity</b>	More preference	Less preference	More preference	Less preference
<b>Emotional stability</b>	More stable	Less stable	More stable	Less stable
<b>Sense of self-esteem</b>	No differences		More confident	Less confident
<b>Physical exercise</b>	Doing exercises less often	Doing exercises more often	No differences	
<b>Gambling</b>	Less inclined to gambling	More inclined to gambling	No differences	
<b>Social network, support and conflicts</b>	Less numerous social network, sense of lack of support	More numerous social network, greater support	No pattern with social network	

versities they tend to choose proactive coping strategies (Anagnostopoulos, Griva, 2012).

The research also suggest that orientation towards the future is strongly related with conscientiousness and scrupulousness which, in turn, are related to longevity (Kern, Friedman, 2008). Due to their pro-healthy attitudes and activities conscientious and far-sighted people tend to live longer; 'better safe than sorry' being their motto. What is more, it is not uncommon for members of this group to be well educated and inclined to pursue professions that are physically less dangerous. They also make and execute plans regarding their health or retirement, they take out insurance policies and amass greater savings that – if need be – may be utilised for

more expensive therapies. Such people value greater gains in the long-run over lower but instantaneous ones.

On the other hand, a very intense focus on future goals or possible threats, as well as generating new objectives may cause such people to feel overwhelmed by time pressure, thus increasing stress levels and fear of the future (Zaleski, 1996). This often causes future-oriented individuals to pursue their obligations at the cost of sleep, leisure, time with family or friends, life pleasures, or hobbies (Zimbardo, Boyd, 2013). Also, too intense focus on the future may limit many of its benefits and become a risk factor to broadly understood health. The key is the ability to maintain adequate focus (elevated, yet not too

high score on Future scale) and to balance between acting within future-oriented perspective and the remaining ones.

### Balanced Time Perspective (BTP) and health

The Time Theory (TT) by Zimbardo and Boyd assumes that temporal orientations are independent of each other and that they may be found in an individual in varying configurations. Sometimes one of them is dominant or overused, even though in a particular situation other orientations would prove to be more appropriate (a tendency towards one perspective is called 'time bias'). A system of

perspectives may neutralise the risk generated by each of them separately (e.g., strong Present Hedonistic orientation combined with strong Future perspective results in the ability to seize the day without losing the potential consequences from sight). Mutual relations of perspectives may also intensify such risks; for example, if strong focus on Past Negative perspective is combined with strong Present Fatalistic orientation the risk of depression and auto-aggressive behaviours increases.

Numerous research (both empirical and clinical) allow of the conclusion that the optimal perspective – for psychosocial functioning and well-being – is the balanced time perspective (BTP), which is characterised by Past

**Table 3.** Future perspective (measured with ZTPI), and behavioural and psychological characteristics related to health-oriented activities (based on: Daugherty, Brase, 2010; Griva et al., 2013; Holman, Zimbardo, 2009; Visser, Hirsch, 2014; Zimbardo, Boyd, 2012, p. 125).

Variable	Individuals scoring low on Future	Individuals scoring high on Future
Aggression	More aggressive	Less aggressive
Anxiety	More anxious	Less anxious
Conscientiousness	Less conscientious	More conscientious
Depression	More depressive	Less depressive
Vigour	Less energetic	More energetic
Considering future consequences	Less far-sighted	More far-sighted
Impulse control	Less controlling	More controlling
Preference for regularity	Less preference	More preference
Emotional stability	No differences	
Sense of self-esteem	Less confident	More confident
Hours spent on studying weekly	Learning less	Learning more
Carrying a watch and using organizer	Less prone	More prone
Drinking alcohol	Drinking more often	Drinking less often
Taking narcotics	Taking more often	Taking less often
Using dental floss	Less prone to use	More prone to use
Preventive medical examination	Less prone	More prone
Social network, support and conflicts	Weaker sense of support from others	No differences in the size of social network; strong sense of support from others

Positive orientation, stronger focus on the Future, moderate Present Hedonistic orientation, and weak Present Fatalistic and Past Negative orientations (Boniwell, Zimbardo, 2004). Importantly, a symptom of a balanced perspective is an individual's ability to swiftly shift perspectives and elastically use them as required by current situation (e.g., turning to Future perspective when planning career, switching to Present Hedonistic orientation when playing with friends, and shifting to Past perspective when verifying self-identity). Presented below are the select conclusions from the research on BTP insofar as they are related to health:

- a balanced time perspective is related to higher general feeling of prosperity, optimism, positive subjective assessment of one's psychophysical wellbeing and resilience (Pichayayothin, 2016);
- individuals characterised by ZTPI as having balanced time perspective have positive attitude to life and themselves (Sobol-Kwapińska, Jankowski, 2016);
- a balanced time perspective is related to the sense of wellbeing and wisdom (Webster, Ma, 2014), more positive mood (Stolarski et al., 2014), as well as greater satisfaction with life (Gao, 2011).

Is it, therefore, valid to claim that a balanced time perspective constitutes a universal preventive factor? Accepting the holistic perspective it is difficult to answer so raised question to answer explicitly. Temporal perspective (whether it is treated as dominant orientation, whether the mutually balanced configuration of individual perspectives) from the holistic point of view is only one of numerous elements which modify human health behaviours. As previously mentioned numerous data indicate that balanced time perspective can constitute the protective factor in many situations. However, for example, in situations related to the usage and an abuse of the psychoactive substances often a protective factor is not BTP but rather the future orientation (McKay et al., 2014; Apostodolis et al., 2006).

The protective role of BTP is probably very forceful and more essential than the domination of the single time perspective, however, due to the complexity of the situation and possible modifiers, one cannot on the present stage of research, find this explicitly.

## Conclusion and practical implications

It is impossible to explicitly evaluate, whether the time perspectives constitutes protective or the risk factor in the context of health related behaviours. Both the domination of single time orientations, and balanced time perspective can constitute possibilities or restrictions, depending on other elements forming unique, personal mandala of the health, especially in reference to the given situational context. However, familiarity with specific temporal profiles and related to them *modi operandi* allows to better understand individuals and provide them with more effective preventive strategies.

In order to decide whether a particular temporal orientation is a risk factor or a preventive factor, the whole profile needs be considered, including the multi-aspect character of a given time perspective. Mutual relations of time perspectives (temporal profile) may either strengthen or weaken the risk of development and lasting of psychophysical disorders (especially related to depression and anxiety); the latter being connected with Past Negative and Present Fatalistic perspectives. The risks are also greater in the case of young adults who are characterised by strong Future or Present Hedonistic perspectives. In general, stiffening of any of the perspectives or overusing some over other that could be more adaptive is related to increased risk of health disorders. Likewise, among the preventive factors the following may be listed: strong Past Positive orientation, as well as moderate Present Hedonistic and Future perspectives (so called balanced time perspective). It is worth keeping in mind, that when it comes to preventing from harmful use of psychoactive substances, the Future perspective is more effective than the balanced one.

Campaigns to undergo preventive medical examination will be more successful with Present Hedonistic orientation if underline its instantaneous benefits and being possible quickly to feel negative consequences of avoiding preventive screening. Furthermore, stressing the long-term benefits of prophylactic screening and merely signaling the risks related to avoiding the procedure will become more appealing to individuals focused on the future (cf. Crockett et al., 2009). It is worth mentioning that a campaign against smoking utilising drastic pictures (e.g., photographs depicting tissues and organs damaged by smoking) is – according to this deliberation – of no avail. The content presented on the packets refers to postponed – and therefore abstract – issues, whilst the main addressee of the campaign is an individual focused on the present (as such people comprise the main body of addicts due to the fact that they are set on gaining quick gratifications and avoiding discomfort). Unsurprisingly, many of them develop perceptual defence against such content.

Furthermore, operating on particular temporal perspectives may also be easily applied in such standard procedures as Motivational Interviewing (MI), in which the goal is to encourage individuals to undergo a treatment or change their lifestyle insofar as their health is concerned. MI is a cognitive-behavioural method of empirically established efficacy. Enjoying increasing popularity (also in Poland), it is used to strengthen motivation to undertake healthy behaviours and avoid risky ones (Visser, Hirsch, 2014). As research results show (Hall 2001; Hall, Fong, 2003), time perspective may be modified (e.g., strengthening Future perspective) during short-term interventions that have a particular goal (eg. increasing perseverance in doing physical exercises). Three half-hour psychoeducational sessions during the first three weeks of a six-week exercise programme are sufficient to ensure that participating individuals, instead of dropping out, will continue the programme, significantly benefiting on health.

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