

PhD Theses

Barna KONKOLY THEGE

School of PhD Studies, Semmelweis University
School of Mental Health Sciences



Supervisor: Mária Kopp, DSc
President of the final exam committee:
László Rosivall, DSc
Opponents: Zsolt Demetrovics, PhD
József Rácz, DSc
Members of the final exam committee:
Franz Schaffhauser, PhD
Róbert Urbán, PhD

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According to the WHO, smoking is one of the biggest public health threats the world has ever faced. Since smoking is a risk factor for six of the eight leading causes of deaths, not less than seven out of ten deaths can be linked to cigarette use. Nowadays, there are more than one billion smokers in the world, and the number of people threatened by the effects of smoking is even much larger due to passive smoking.

Approximately 5.4 million people die every year in smoking-related diseases, and the total number of deaths caused by smoking was 100 million in the 20th century. According to the WHO, the prognoses are even worse: if current trends continue, there will be up to one billion deaths related to tobacco use in the 21st century. The concept that nicotine is the true gateway drug towards drug addiction instead of the so-called light drugs lends further importance to the question of smoking.

Although the consumption of nicotine is increasing globally, this trend is not homogenous. While nicotine use is decreasing in high-income countries where much attention and adequate financial support is provided to health promotion and smoking prevention / cessation programs, in poorer parts of the

world, the number of nicotine users is still increasing. Unfortunately, Hungary also belongs to the latter group of countries as the rate of current smokers is $33 \pm 5 \%$ and this number is growing according to the relatively few longitudinal investigations. The increase can be traced back to the growing number of adolescent smokers as several studies revealed that more than a half of high school-aged students smoke more or less regularly.

Therefore, it is of crucial importance to better understand the background factors contributing to the initiation, maintenance and cessation of nicotine use to help develop more effective intervention and prevention programs. In the present dissertation, we examined the potential role of a psychological construct, meaning in life, which previously has not been linked to smoking.

Life meaning is the key construct of Viktor Frankl's logotherapy and existential analysis. According to this concept, the request for a meaningful life is essential among the motivating factors of human beings. Frankl suggests that one can find meaning in life by three means: (1) through doing deeds that one feels worth doing regardless of their pleasurable-ness; (2) through the enjoyment from existing values let they be the love of another person or a work of art; (3) and through the

realization of attitudinal values, that is, for instance through facing uncontrollable factors such as illness or death with a dignified attitude. The quest for meaning can stay unfulfilled, which in turn can disturb the psychological balance of the person resulting in mental illnesses including addictive disorders as well. That is, the decreased level of life meaning would be not only a correlate but, at least partly, a cause of these mental disorders. Empirical research of the past decades supported Frankl's hypotheses as far as a large amount of studies demonstrated the relationship between mood disorders, alcohol misuse, illegal drug addiction and meaninglessness in life.

The aim of the present investigations

Up to now, studies investigating the relationship between meaning in life and addictive behaviours have concentrated on alcohol misuse and illegal substance use paying no attention to smoking in spite of its relevance in public health. The question can be raised, of course, whether the reason for this ignorance is not the basic difference in the psychological consequences and background of smoking and of the use of other substances. Concerning this question, we must agree that even the addictive use of nicotine shows significant differences when com-

pared to other addictive behaviours since (1) smoking destroys the person's social life less or not at all; (2) even if nicotine does it in a similar way as other drugs (through the modification of dopamine transmission in the central nervous system), it decreases working abilities, financial welfare and the rewarding potential of other sources of pleasure less than other substances do; (3) nicotine use modifies the person's perception of reality in a smaller manner, which in turn is a crucial factor of other psychoactive drugs' addictive potential.

On the other hand, nicotine addiction has several similarities to the (addictive) use of other psychoactive substances like a tendency to escape from the present moment, which is often described by smokers as the boredom-relieving or stress-management function of nicotine use. Further, nicotine has a very strong addictive potential, abstinence causes withdrawal symptoms and long-term smoking can lead to serious health consequences.

Although we are not aware of any published empirical data on the relationship between life meaning and smoking, this assumption cannot be considered as being unprecedented. Some theorists suggested explicitly that logotherapy has to deal with nicotine-related problems since the psychological background of smoking has similar components to that of alcohol

misuse or other health-threatening behaviours, in the case of which logotherapy has already proven to be an effective approach. In a Hungarian survey, it was found that among female students, smoking was connected to the absence of life goals, which is a central – even if not the only one – component of meaning in life. An Israeli investigation pointed out that a decreased level of meaning in life was related to a composite score of self-destructive behaviours including smoking. A study from the US also used an index score, measuring drug involvement, in which nicotine had the same weight as alcohol or the illegal drugs. The observation that logotherapy techniques can be effectively used to help smokers to quit also indicates or at least legitimizes the assumption that meaning-related problems may have a role in the psychological background of smoking.

Therefore, the aim of our work was to empirically investigate the hypothesized relation between smoking and a decreased level of meaning in life. In the present dissertation, two indicators of smoking behaviour was used: smoking status (smoker / non-smoker) and intensity of smoking (average number of cigarettes smoked a day). According to the general assumptions of logotherapy and existential analysis, it was expected that a decreased level of meaning in life, independently

from gender, would be a positive predictor of the higher likelihood of smoking and of the more intensive cigarette use among smokers. Given that several investigations showed that the patterns of the relationships between meaning in life and health-risk behaviours could be different for males and females, the moderator role of gender was also examined.

Methods

In our dissertation, the data of four empirical investigations were analysed. Altogether, 171 respondents participated in the first cross-sectional explorative study, being conducted in the last quarter of 2004. Volunteer participants were recruited through the snowball method (N=130) and by the help of a youth organization serving students in job search (N=41). In this study, merely a few sociodemographic variables were used as covariates like gender, age, educational level and income. Meaning in life was assessed by the Logo-Test designed by E. Lukas.

In the second cross-sectional study, using convenience sampling methods in the spring of 2006, 341 persons were included with the assistance of graduate psychology students of the Pázmány Péter University. Students were asked to seek

volunteers of various ages and educational levels. Further 51 persons were drawn into the investigation by an organization for helping people with unfavourable psychosocial background. The following control variables were used in the statistical analyses: gender, age, educational level, size of residence, income, alcohol- and illegal drug use, depressive symptomatology, and general life satisfaction. Meaning in life was measured by Crumbaugh & Maholick's Purpose in Life Test and a revised version of the previously used Logo-Test.

The third study was based on the data of the Hungarostudy 2002 national cross-sectional survey (N=12,668), which is representative of the adult Hungarian population according to sex, age and the 150 sub-regions in the country. The following covariates were included in our analyses: gender, age, educational level, marital status, alcohol- and illegal drug use, depressive symptomatology, general well-being, and self-efficacy. Meaning in life was assessed by the Life Meaning Subscale from the Brief Stress and Coping Inventory.

The fourth study, a longitudinal one with cross-lagged design, analysed the data of the Hungarian Epidemiological Panel (HEP) survey (N=4,307). The first wave of the data collection was conducted in 2002 and the follow-up approxi-

mately 4 years later. The meaning in life measure and the covariates were exactly the same as in the third study.

Results

According to the data of the first investigation, a lower level of meaning in life was associated with a higher likelihood of being a smoker on both the bivariate ($Z = -2.35$; $p = 0.019$) and the multivariate level ($OR = 1.14$; $p = 0.005$). Our main independent variable was unrelated with smoking intensity already in the bivariate analyses ($p = 0.912$).

The second study confirmed that having a stronger sense of meaning in life was connected with a decreased likelihood of smoking on both the bivariate and the multivariate level ($Z = -2.40$; $p = 0.016$; $OR = 1.017$; $p = 0.029$), although in case of the Logo-Test-R, only tendencies were observed ($Z = -1.73$; $p = 0.084$; $OR = 1.031$; $p = 0.086$). Concerning smoking intensity, meaning in life proved to be a significant negative predictor of the amount of cigarette used on the bivariate level ($r_{\text{Spearman}} = -0.17$; $p = 0.030$ / $r_{\text{Spearman}} = -0.19$; $p = 0.015$), which association completely lost its significance in the multivariate analyses in case of both the Purpose in Life Test and the Logo-Test-R ($p = 0.772$ / $p = 0.580$).

In the third study, where the sample size already allowed us to investigate men and women separately, results showed that the negative relationship between meaning in life and smoking is independent from gender on both the bivariate (males: $Z = -7.30$; $p < 0.001$ / females: $Z = -5.90$; $p < 0.001$), and the multivariate level (males: $OR = 0.95$; $p < 0.001$ / females: $OR = 0.91$; $p < 0.001$). However, substantial gender differences were found concerning smoking intensity. While among women, meaning in life related significantly with the daily amount of cigarette consumption on both the bivariate and the multivariate level ($r_{\text{Spearman}} = -0.13$; $p < 0.001$ / $OR = 0.93$; $p < 0.001$); in men, life meaning was a significant correlate of smoking intensity in the bivariate analyses only ($r_{\text{Spearman}} = -0.06$; $p < 0.05$) and lost its significance when multivariate methods were used ($p = 0.308$).

In the fourth, longitudinal study, only smoking status was analysed, since the time lag (approx. 4 years) was too long compared to the hypothesized cause lag to investigate smoking intensity as well. To better understand the nature of the relationship between meaning in life and smoking status, a cross-lagged design was used. That is, both the hypothesized direction of causality (1st causal path from baseline meaning in life to smoking status at follow-up) and the opposite direction (2nd

causal path from smoking status T1 to meaning in life T2) were tested in separate analyses. Results revealed that, on the bivariate level, both causal paths were significant independently from gender, (males, 1st path: K.-W.- $\chi^2 = 16.30$; $p < 0.001$ / 2nd path: K.-W.- $\chi^2 = 18.95$; $p < 0.001$ / females, 1st path: K.-W.- $\chi^2 = 18.1$; $p < 0.001$ / 2nd path: K.-W.- $\chi^2 = 12.13$; $p < 0.01$). However, in the multivariate analyses, baseline smoking status seemed to influence life meaning at follow-up among men (2nd path); while in women, life meaning scores at Time 1 proved to be significant predictors of smoking status at Time 2 (1st path). These unexpected results found for men are not completely uninterpretable as it is possible that merely the fact of addiction can already influence negatively the experience of inner freedom (cf. unsuccessful quitting attempts), which in turn may hinder the setting and achievement of life goals – a central component of life meaning.

Beyond the opportunities provided by the cross-lagged analyses, two further variables were designed to assess the *change* of meaning in life and of smoking status. According to the results, there were no significant difference in meaning in life change among the smoking-related groups [quitted since first data collection / (re)started smoking since first data collection / started then quitted since first data collection / current

smoker henceforward / never smoker henceforward]. However, also in the case of these results, we should take into consideration that the merely two waves of data collection do not permit drawing final conclusions on the relationship of these variables. That is to say, we cannot know, in which period of the follow-up interval and in what order the possible change of life meaning and/or of smoking status occurred.

We can conclude that the series of our studies, using four different measures of the meaning in life construct, show that life meaning is related negatively with the likelihood of smoking – in line with the general assumption of Frankl's theory, according to which addictive behaviours are correlates of a decreased level of meaning in life. However, our results were less heterogeneous for smoking intensity: the expected negative association between life meaning and the amount of cigarettes smoked emerged only in one sample from the three (although in far the biggest one), and even in this case only among females.

Conclusions

Summarizing our results, we came to the conclusion that – at least in certain aspects – a decreased level of meaning in life

may be a correlate of the smoking behaviour. Identifying a new background factor of a risk behaviour always raises the question of changeability. From that point of view, we can be optimistic, since, according to the theory of logotherapy and the collected data, meaning in life can change and can be changed more easily than several well-known determinants of smoking as gender, age, socioeconomic status, impulsivity, sensation seeking, parental smoking etc.

Concerning primary prevention and mental health promotion, we can think of psychoeducational elements that could be integrated into public education. Such programs may help participants to set life goals in a more conscious way, they can facilitate the regular reflection on and reorganization of purposes in life and could give a basis for realizing experiential and attitudinal values as defined by Frankl.

Regarding secondary prevention, non-meaning-specific psychological interventions can come into consideration on the one hand (e.g. trainings designed for developing social skills), of which favourable side-effect is the improvement of the individual's life meaning. On the other hand, we can refer to the specific structured individual and group interventions, prepared by logotherapists for special populations at risk, helping participants to experience more and more meaning in their lives.

A further important aspect of “life meaning promotion” is that a stronger sense of meaning in life is a protective factor not only against smoking but also against several other maladaptive, health-damaging behaviours like alcohol misuse, illegal substance use, and suicide. Therefore, although the relationship between meaning in life and smoking is relatively weak, in our opinion, the meaningfulness of the efforts attempting to improve the individuals' life meaning, cannot be questioned.

List of publications

Publications connected to the dissertation

1. Konkoly Thege, B. (2006): Die Beziehung zwischen existenzieller Frustration und gesundheitsschädlichem Verhalten [The relationship between existential frustration and noxious behaviors]. *Existenzanalyse*, 23(1), 68-72.
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7. Konkoly Thege, B., Bachner, Y. G., Kushnir, T., & Kopp, M. (2009): Relationship between meaning in life and smoking status: Results of a national representative survey. *Addictive Behaviors*, 34, 117-120.
8. Konkoly Thege, B., Bachner, Y. G., Martos, T., & Kushnir, T. (in press): Meaning in life: Does it play a role in smoking? *Substance Use & Misuse*, DOI: 10.1080/10826080802495096
9. Konkoly Thege, B., Stauder, A., & Kopp, M. (in press): Relationship between meaning in life and intensity of smoking. Do gender differences exist? *Psychology & Health*, DOI: 10.1080/08870440802460442

Other publications

1. Stauder, A., Konkoly Thege, B. (2006): Az Észlelt Stressz Kérdőív (PSS) magyar verziójának jellemzői [Characteristics of the Hungarian version of the Perceived Stress Scale]. *Mentálhigiéné és Pszichoszomatika*, 7, 203-216.
2. Susánszky, É., Konkoly Thege, B., Stauder, A., Kopp, M. (2006): A WHO Jól-lét Kérdőív rövidített (WBI-5) magyar változatának validálása a Hungarostudy 2002 országos lakossági egészségfelmérés alapján [Validation of the short (5-item) version of the WHO Well-Being Scale based on a Hungarian representative health survey (Hungarostudy 2002)]. *Mentálhigiéné és Pszichoszomatika*, 7, 247-255.
3. Susánszky, É., Székely, A., Szabó, G., Szántó, Zs., Klinger, A., Konkoly Thege, B., Kopp, M. (2007): A Hungarostudy Egészség Panel (HEP) felmérés módszertani leírása [Methodological description of the Hungarian Epidemiological Panel (HEP) Survey]. *Mentálhigiéné és Pszichoszomatika*, 8, 259-276.
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