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EXAMINING THE MENTAL HEALTH OF TEACHERS IN CHANGING CONTEXTS - IN THE LIGHT OF THE SITUATION IN PUBLIC EDUCATION DURING THE SARS-COV-2 VIRUS PANDEMIC

SUMMARY OF DOCTORAL THESIS

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1. Introduction

The theoretical research section of the thesis examines in detail the conceptual framework of health, mental health and burnout in the teaching profession, the related international and national research examples, laying the foundation for empirical research on the mental health of teachers and the underlying conditions in the process of change. The turning point in this case is the pandemic caused by the SARS-COV-2 virus and the impact it has generated on the mental health of teachers in Hungarian public education.

The definition of health to date

The definitions of health are a reflection of the vision of a particular era, of a particular researcher, and the resulting literature is also an age-old one. As Füzesi & Lampek, 2012, p. 57, put it, 'There are few concepts that have been presented, analysed, systematised, debated, and re-created by professionals as many times as the concept of health'.

The most complex way to discuss the concept of health is through conceptions of health, as these provide a comprehensive detail of the definition, and will therefore be presented through the individual health perspectives in the following chapters. Health concepts are defined in different ways and a number of interrelationships are distinguished. In this way, the factors that define the models include the definition of health itself, a description of the range of factors on which the concept has an impact, and an attempt to explore the interrelationships between factors (Glossary of Health Science, 2022).

The health-centred view, which emerged in the 1970s in medicine and psychology alongside the disease-centred approach, drew attention to the importance of health promotion and maintenance. The study of conditions, health maintenance and disease prevention required productive participation. The emerging models for understanding health and disease emerged as a social response to threats (Engel, 1977). Descartes' prevailing view, which served as the basis for the biomedical model, and which sees body and soul as independent, mutually independent substances, was already in the 1950s supplemented by a psychological aspect, and further extended by the psychiatrist George Engel's model. Although the bio-psycho-social model took the three factors into account and considered their complex interaction, it still did not include a dimension whose presence was fundamental and supported by data.

In order for the BPSS model, which integrates the spiritual dimension, to be widely accepted, its political, social and religious aspects will be detailed, and its proponents in the field of psychotherapy and psychiatric practice are increasing. The role of the spiritual

dimension of the BPSS model in the rehabilitation of the chronic patient in post-traumatic growth has been emphasized in several studies (Chally & Carlson, 2004, Awasthi, 2011, Shaw et al., 2005, Kulcsár, 2009). In Hungary, Ede Frecska, transpersonal psychiatrist and domestic representative of the BPSS model, first emphasized the importance of the spiritual dimension and the complementarity of the bio-psycho-social model in 2006-2007, after returning from his trip to the USA. Gusztáv Oláh, Associate Professor of the Department of Psychiatry, Faculty of General Medicine, University of Debrecen, received a lifetime achievement award from the Hungarian Psychiatric Society for his work in the field of paradigm completion, influenced by his experience of the integrative healing approaches of South American tribes. In 2013, together with Mónika Andrejkovics, Eva Gáspári and Petra Bokor, they published a seminal paper on the BPSS model, which was a landmark in the field. In this paper, the researchers argue that the interdisciplinary nature of spirituality requires the collaboration of philosophy, theology, anthropology and sociology, and the development of a methodological toolkit that helps to ensure objectivity and verifiability. To establish external consistency, constant processing of evidence-based information is necessary to reach consensus with other disciplines on the dimension (Andrejkovics et al., 2013).

The theories and models that have contributed to the definition of health are not exhaustive, but the examples given make it clear that they have helped to develop a positive view of health, where the focus of the understanding of health has shifted from 'the inability to do something' to 'the ability to do something'. Acting in this way has a significant impact on an individual's sense of happiness in addition to their everyday life and quality of life (Urbán, 1995; Bagdy, 2007).

Emotional specificities of the teaching profession

Individuals who choose the profession of educator, which is a humanities profession with emotionally demanding tasks, have emotional receptivity, high empathy, a helping attitude and sensitivity to their fellow human beings, combined with the inherently asymmetrical relational nature of the profession (Farkas, 2011).

As well as students, teacher overload is an equally accepted social view according to Galicza and Schődl, who described this perspective in 1994, which is still valid today. In addition to preparing for and delivering lessons, and carrying out administrative tasks, the responsibilities of extra duties seem only to increase. The level of workload and fears of failure, conflict and existential problems lead to low self-esteem, the harmonious development of which

is hampered by the need to maintain an optimal level of personal relationships (Galicza & Schődl, 1994).

Meeting the demands placed on teachers in their daily lives and the feeling of pressure to comply creates a state of tension and high levels of stress. This is influenced by the degree of control required in the classroom, the degree of overload, the amount of teaching material, the extent of other administrative burdens, and the existence or lack of cohesion of the teaching staff, the institutional community, in addition to moral esteem. Stress over longer periods of time leads to reduced performance, which can result in physical and mental exhaustion. Exhaustion leads to a weakened immune system, possible role conflict and increased apathetic feelings (Szitó, 2004). Several factors are involved as causes of stress in the teaching profession. In addition to the factors already described by Imre Szitó, Haberman includes among the external factors the irrationality of time demands, the blurring of teaching roles, high class sizes and financial considerations, which may be exacerbated by the attitude of institutional management (Haberman, 2004).

Several studies have shown that significant workplace stress is a risk factor for physical and mental illness in workers, such as studies exploring the relationship between workplace stress and cardiovascular disease (Schnall et al., 1994; Belkic et al, 2004; Theorell & Karasek 1996; Kopp et al., 2006; Kristensen, 1996; Landsbergis et al., 2001), but there have also been studies showing a link between mental health decline and stress at work (Van der Doef & Maes, 1999; Tsutsumi & Kawakami, 2004; Van Vegchel et al., 2005; Jakab et al., 2006).

Katalin Horváth-Szabó studied stress among teachers and concluded that 40 per cent of teachers were susceptible to anxiety, 30 per cent felt that they experienced pervasive and significant stress due to their work, 29 per cent reported somatic complaints, 24 per cent reported somatic symptoms caused by stress, 14 per cent were prone to neurosis and 10 per cent were neurotic (Horváth-Szabó, 1990). This trend was supported by Jarvis in a wider study by the National Association of Head Teachers in Britain, where the results showed that 40 per cent of head teachers reported that they had consulted a doctor for problems caused by stress. A quarter of those surveyed reported health complaints due to stress - typically hypertension, insomnia, depressive symptoms, digestive problems - 20 per cent admitted to drinking more alcohol than they should and 15 per cent admitted to alcohol abuse (Jarvis, 2002).

Some studies have compared the stress levels of urban and rural teachers, taking into account differences by locality, and concluded that for urban teachers, the stress is caused by low levels of contact with parents and lack of cooperation, while for rural teachers it is stress caused by close contact with parents. It has been found that teachers teaching in urban

settlements with larger populations experience more stress due to more problem students, harsher work relationships and lower levels of recognition, in addition to more irregular schedules (Abel & Sewell, 1999).

As a consequence of teacher stress, teachers experience higher levels of psychological distress and lower levels of satisfaction compared to the general population (Travers & Cooper, 1993). In the long run, the stress experienced by teachers adversely affects the education system, but the indirect and long-term costs of the impact on teachers are difficult to calculate. Wilson has found that occupational stress in industry can be monetised in terms of the amount of lost output, but in teaching, the loss is characterised by the departure of qualified teachers, deterioration in teaching skills or even premature death (Wilson, 2002).

The impact of stress at work on mental health is also becoming increasingly important, as the WHO stated in Mental Health: New Understanding in 2000 that the most important task of health care after the millennium will be the treatment of psychological and psychiatric disorders (WHO, 2001). It is therefore a major health problem, from both a social and an economic point of view, to map the effects of stress at work and the individual factors influencing it. Factors affecting teachers' mental health are also of particular importance because the optimal level of their mental health and mental well-being influences the generations to come (Salavecz et al., 2006). Stress in teachers' work is unavoidable, but does not necessarily have a negative impact, and can also have a minor stimulating effect on enthusiasm and student activity. However, the persistence of stress can lead to negative change processes and burnout (Farkas, 2011).

Helper Syndrome, the antechamber of burnout - "I care, therefore I am"

The existence of this phenomenon, which has been reported in the literature as occurring in assistive occupations, is often predictive of problems that may develop later. The phenomenon of compulsive helping is known in the scientific community as helfer, helper, or helping syndrome, defined in 1977 by the psychoanalyst W. Schmidbauer. The helper syndrome is a characteristic symptom complex that primarily affects professionals in the helping professions. Because of his or her insecure personality and self-esteem problems, such a dysfunctional professional maintains excessive helping as a self-harming phenomenon, in which he or she is unable to live with and accept his or her own fears, anxiety and intimacy, and sees the key to self-balancing in helping others. The profession is a mediating medium in this situation. The control of the helper's addictive relationships gives him a sense of independence, which he often successfully hides from the outside world (Schmidbauer, 1977).

The individual with helper syndrome hides his injuries behind a mask of helping and blocks his own development by self-mutilating, controlling behaviour. This condition can easily turn into a more serious phenomenon, which is why it is important to pay special attention to self-awareness and the identification of hidden motivations. However, while the dysfunctional helper's over-commitment and private failures make him or her a danger primarily to him or herself, the syndrome detailed in the next chapter also endangers the client or student (Temesváry, 2010).

Burnout and its presence in the teaching profession

In the 20th century, the study of burnout really developed and burnout began to be defined as a syndrome (Fejes, 2021). In this scientific work, whichever term I use to avoid repetition and to vary the way I use it, I mean the same syndrome, phenomenon.

The most at risk category for burnout, which is classified as a mental health disorder, are individuals who work with people, engage in bipolar interpersonal processes, and choose occupations that require sustained concentration and emotional demands (Maslach & Jackson 1981). However, research in the late 20th century, according to Beatrix Kissné Geosits, has shown that burnout can occur in almost anyone, regardless of the job (Kissné, 2009).

After 31-40 years, those who choose a career as a teacher experience a significant decrease in enthusiasm and a sense of bitterness (Habermann, 2004). The confrontation and management of social, physical and psychological problems of students also contributes to the appearance of burnout among teachers (Petróczi, 1999). The following chapter aims to discuss the specificities of this phenomenon.

Farber, in his 1991 book "Crisis in education: stress and burnout in the American teacher", writes that burnout can be associated with psychosomatic symptoms such as gastrointestinal complaints and sleep disturbances, which can also lead to health-damaging behaviours in the individual, manifested in addictive behaviour (Farber, 1991). The link between burnout and absenteeism as a result of sickness and turning one's back on work has been highlighted by Fekete and Petróczi (Fekete, 1991; Petróczi, 1999; 2007).

According to Emőke Bagdy and József Telkes, the three most typical symptoms of burnout - emotional exhaustion, depersonalisation, loss of perception of success - are a gradual loss of job satisfaction, accompanied by a disturbance in the performance of professional tasks, an increase in conflict situations and a loss of self-confidence (Bagdy & Telkes, 1994). Role failure, role fatigue, as identified by Moreno (1994), can also occur in teachers as a result of role commitment, overloaded responsibilities, objectives and lack of motivation, which are not

properly understood and constructed by the teacher role, but are not fulfilled. As a result of the condition, the perceptions of the environment are dismissed, the people concerned do not take their condition seriously or deny that they have a real problem, which exacerbates their situation.

According to Haberman, burnout causes a teacher to lose empathy and gradually lose interest in the students and other people he or she comes into contact with in the course of his or her work. Along with the loss of emotional engagement, there is also a loss of the sense that their work is making any impact, so they believe they are not making a difference to students' lives and therefore there is no point in putting in significant effort. This increase in feeling further reduces the sense of responsibility (Haberman, 2005).

Research exploring the mental health of teachers

One of the most significant findings was pioneered by H. Knauder (1996), who studied teacher attitudes and found that burnout affects the teacher-student relationship, as a burned-out teacher cannot show the necessary interest and engage in the right way with the students in his/her care. He also sees this as dangerous because the behaviour of the students taught by a burnt-out teacher is similar to that of the teacher and they can no longer take the teacher into account in the way that a good teacher-student relationship should. The result is a damaging cycle that further deteriorates the relationship, damaging both the teacher's self-image and his or her relationship with the students, with the teacher becoming less and less able to be understanding and accepting, no longer making sacrifices, but becoming a rigid, distant, inflexible teacher.

The psychological state of teachers employed in public education, primary schools and secondary education institutions, and the mapping of burnout syndrome among them has been the aim of several other studies (Petróczi et al, 1999; Lelesz, 2001; Kovács, 2006; Holecz, 2006; Paksi & Schmidt, 2006; Salavecz et al., 2006). Besides the mental health status of teachers, the research also aims to identify which factors are protective factors and which risk factors for maintaining mental health.

In 2001, research by psychotherapist and psychiatrist Sarolta Ónody, using the analogy of the original term, refers to burnout as the depletion of a previously well-functioning energy source. She highlights the irreversibility of burnout in terms of its process nature and incorrect grammatical use, and the unacceptability for teachers of the fact that it is particularly difficult for a teacher to experience the phenomenon, as they feel they cannot give their all because the responsibility is too great. She believes that, as a role model for the mass of teacher students, the maintenance of moral standards is also more important for the profession, which makes it

difficult to research the concept. In interpreting burnout, many may think that the symptoms render the individual incapable of reliable and conscientious work Perhaps more typical of the researcher's description of burnout 20 years on, fatigue is inherent in the work and self-sacrifice to achieve as much as possible is the norm, while failure is not acceptable. These perspectives take away from the legitimacy of burnout and make research difficult, because those involved feel shame even when they act to prevent it (Ónody, 2001).

According to a study by Mária Lubinszki, 30 percent of European teachers suffer from burnout and 60-70 percent suffer from persistent stress (Lubinszki, 2013). International research has identified the age, gender, education, marital status of the individual as a risk factor for burnout among teachers, while at the organisational level, a correlation has been found between insecurity and role conflict, effort-reward balance and perceived work as a stressor (Carod-Artal & Vázquez-Cabrera 2013). The OECD reports that Hungarian teachers are at the bottom of the international league table in terms of perceived effectiveness and job satisfaction (OECD, 2009).

Gáspár and colleagues (2006) concluded that teachers aged 24-40 years are at risk of burnout, and this is one of the reasons why I am looking for answers to this question in my research (Gáspár et al., 2006). Furthermore, the rate of career dropout among teachers in this age category is high, 30-40% (Kocsis, 2003).

In Hungary, the National Institute of Public Education has supported several studies that have examined indicators of burnout among teachers. One of these was the study by Mihály Gáspár and Anita Holecz (2005), and the separate scientific work of the two researchers (Holecz, 2006; Gáspár, 2008). The aim of the study was to explore the personality dimensions associated with the maintenance of mental health of teachers, which was compared with the characteristics of other occupational respondents and found that those who choose a career as a teacher are particularly at risk of burnout, the degree of this risk being influenced by the motivation for career choice. Looking at teachers in secondary education institutions, researchers concluded that teachers employed in this type of institution have a more favourable perception of their mental health than social groups of similar cultural and demographic status to teachers. It has been emphasised that this outcome is primarily related to the internal world of the institution and the workplace climate (Paksi and Schmidt, 2006).

Several studies have examined the relationship between burnout and certain demographic indicators. Mariann Kovács (2006), Borbála Paksi and Andrea Schmidt (2006) found that there is no significant pattern between the mean scores on the burnout scale and demographic indicators. While some studies have found a correlation between gender, age and years in the

profession and indicators of burnout (Barth, 1990, cited in Ónody, 2001), Anna-Katharina Szagun (1991) reported increased vulnerability in the case of early career teachers, a finding that is related to Anita Holecz's (2006) view that early career teachers require special attention.

2. Research framework

The research used an inductive, empirical research strategy to evaluate the data obtained through measurements and to draw conclusions, but both quantitative and qualitative methods were used to process the information obtained, so the research has a mixed methodology. The scientific work is partly basic research, as it was carried out to generate theoretical knowledge, and partly formative intertemporal evaluation without time series regression analysis, as it investigates change, as it is part of the applied research group of evaluative research (Falus, 2004; Babbie, 2008). The background for the realisation of the research was provided by the Lifestyle, Health and Leisure Research Group of ELTE.

Questions, hypotheses and expected results

A summary is presented below in the form of Table 1, which illustrates the main issues raised during the research, the hypotheses of the research and the expected results of the research.

Table 1 (Source: Own work)
An overview of the research questions, hypotheses and expected results

Question	Hypothesis	Expected result
Is there a correlation between teachers in different types of institutions and their mental health indicators?	The mental health of teachers is different in different types of institutions. Teachers employed in secondary public education institutions report more favourable mental health indicators (Paksi & Schmidt, 2006).	Connection between teachers in different types of institutions and their mental health
What kind of correlation can be found between demographic indicators, including age, and the burnout scale in the sample?	There is a significant pattern between age and years on the job and the mean values of the burnout scale (Szagun, 1991; Holecz, 2006; Kissné, 2009).	Younger members of the study population (5 years on track) have worse results than older members (25 years on track).
Is the type of settlement significant for the development of burn out?	Lower levels of mental health and higher levels of stress are assumed in municipalities with larger populations and urban status (Abel & Sewell, 1999).	Teachers in municipalities with metropolitan status report higher levels of stress, lower subjective well-being and general mental health.

Are mental health factors and self-efficacy correlated in changing circumstances?	If a teacher's self-efficacy is low, it is a significant predictor of emotional exhaustion, depersonalization, anxiety, and job satisfaction related to mental health (Schwarzer, 1999; Greenglass & Burke, 2000; Greenglass 2002)	The epidemiological situation is negatively correlated with teachers' self-efficacy.
Is there a correlation between the frequency of online platform use of the sample and their mental health?	A link can be found between the use of online platforms and mental health (N. Kollár, 2021).	A link can be found between the use of online interfaces, digital literacy and mental health indicators.
How are teachers' mental health, subjective well-being and burnout risk changing in Covid wave 4?	During the digital education, Covid-19 epidemic, some studies have reported mental dysfunction, higher perceived stress, more negative mental health indicators (Asmundson & Taylor, 2020; Dozois, 2021; Ren et al., 2020; Osváth, 2021; Szikszai, 2022)	A negative relationship can be found between subjective well-being, burnout and mental health during the pandemic period.

3. Presentation of the research design, methodology

Using theoretical sampling, the group of teachers was included in the research as a sub-population, since the responses given by their group are relevant to the research questions (Szokolszky, 2006).

For the sake of validity, the Maslach Burnout Inventory (MBI) questionnaire, which has been introduced in the Hungarian literature as the Burnout Inventory (Hézser, 1996), the General Health Questionnaire (GHQ-12), which is also known as the "general health questionnaire" (Goldberg, 1992), validated by Balajti and colleagues in Hungary in 2006, and the 5-item WHO Well-Being Questionnaire (WBI-5), which according to the Hungarian validators has excellent internal reliability despite its shortness (Susánszky et al., The questionnaire in the appendix was supplemented with variables on teachers' socio-economic status, employment conditions, leisure time habits, career motivation and certain aspects of digital education.

Data collection process and sampling procedure

The data were recorded in 4 phases according to the waves of Covid-19 disease in Hungary. Thus, the 1st data collection took place in March-April 2020, the 2nd data collection in November-December 2020, the 3rd data collection in March-April 2021 and the 4th data collection in November-December 2021.

Data were extracted using a self-completion based, self-reported individual written questionnaire. Data were collected using closed-ended, rank-order type questions in a controlled but randomized written questionnaire in the study population. Probability sampling was planned, but active consent was required for completion under Regulation (EU) 2016/679 of the European Parliament and of the Council (EU) (European Parliament & Council 2016). As it was not possible to access a database containing the complete names and contact details of the study population, we used public data on institutions and their places of work obtained from the KIR - Public Education Information System - Database of the Education Office, which allowed access-based sampling (Szokolszky, 2006).

Summary and conclusions

In our research, we analysed burnout indicators, subjective well-being and general mental health of teachers employed in Hungary, and explored possible influencing factors. We examined sociodemographic factors, career motivation, sporting habits, leisure time habits, relationships with colleagues and superiors, different aspects of esteem, as well as time spent online, platform use, health and further education opportunities.

Four main theoretical models have been used as a basic conceptual framework for the writing of this thesis: the health approach and the bio-psycho-socio-spiritual theoretical framework, the emotional specificities of the teaching profession with a focus on stress effects and burnout, the socio-psychological approach and the theoretical framework on the specificities of the teaching profession. An important aspect of the dissertation is the changing context of the SARS-COV-2 pandemic, which is the background for the longitudinal study of the research, and the main events and happenings of the period are presented, focusing on Hungary and education in particular. The qualitative method of the research was based on a documentary analysis of the topic by studying a wide range of sources.

SARS-COV-2, a changing circumstance that is a challenge to be overcome or a situation that causes a negative change in mental health?

A significant part of the theoretical framework is the presentation of the virus situation. The aim of this chapter is to describe the changes, to inform about regulations and measures. The style of writing is a conscious choice. The reader may feel that the chapter is long, the presentation of information is monotonous, certain things are perhaps repeated too many times, the writer repeats himself, and after a while it becomes apparent that decisions have been taken differently, that changes have taken a different direction. In retrospect, therefore, it is possible to know which decision was finally taken and which scenario was implemented. The aim of this chapter is to give a sense of the background to the questionnaire research, of the circumstances and decisions that determined the everyday lives of the respondents: monotonous, unpredictable, uncertain, constantly changing information that affects all aspects of life and influences everyday life in many ways. Regulations changed daily in some cases, but some decisions remained in force for years. Some of the longitudinal research data were collected in line with the waves of the pandemic in Hungary, so that we can get an idea of how the teachers in the sample experienced the period. The analysis of the results shows that in many cases, positive results were achieved despite the challenges during the first wave. Although the

respondents were faced with a very unusual situation, they still had reserves. However, as time went on, these diminished in most cases, as reflected in the analysis of deteriorating results in the data collection.

The hypotheses of the research work were tested using the Maslach Burnout Inventory (MBI) questionnaire, as this measure, which is widely used in the international and national literature, allows for reproducibility of results and reliably indicates the risk of burnout. Burn-out syndrome can be measured in a number of occupations, such as health professionals or social workers. The questionnaire was developed in 1992 by Pines, Aronson and Kafry to measure work-related feelings, and emotions in general. The result is a burn-out index that provides a measure of vulnerability to burnout. In the research of this dissertation, the first version of the MBI-HSS, i.e. the measurement instrument, was used, which is the result of several steps. At the beginning of the development of the instrument, the items were analysed using a qualitative methodology following the data collection, and consisted of 47 questions, which were tested on a sample, and a varimax rotation was applied in the principal component analysis, thus eliminating 4 factors. These factors could account for 75 percent of the variance. As a next step, certain criteria were used to narrow down the sample from 47 items to 25 items, which were then retested. After further weighting was observed, 3 items were removed, resulting in the 22-item MBI-HSS currently in use (Maslach et al., 2008). The questionnaire contains three subscales, which are related to emotional exhaustion, depersonalization, and personal performance.

The subjective well-being was assessed using the WHO Well-being Index 5-item measure. The original scale was developed in 1982 to measure the effectiveness of therapeutic procedures by adding positive questions to the model of Zung's 1956 measure of self-esteem in psychological distress-anxiety-depression. After several modifications, the questionnaire reached its 5-item form in 1996 by Beck, Johansen and Gudex. Despite being a short scale, its validity, homogeneity and internal consistency have been demonstrated (Heun et al.,1999). General mental health was assessed using the General Health Questionnaire, a standardised psychological scale with 12 questions. The self-assessment quesionnaire measures psychological distress and mood disturbance on a four-point Likert scale (0-3), examining mental health problems manifested by anxiety symptoms. Its original version, which included 60 more questions, was developed by Goldberg and Blackwell (1970). There are also versions of the instrument with 30, 28 and 20 questions (Goldberg, 1992).

Type of institution: determinant of mental health or not?:

According to some researchers, the mental health of teachers differs across different types of institutions, with Paksi and Schmidt (2006) claiming that teachers employed in secondary public education institutions have more favourable mental health indicators. In selecting the sample, an important consideration was to attempt to distribute the written questionnaire to a range of institution types, so that a wider range of responses could be obtained and analysed, including pre-school teachers, nursery school teachers, teachers in higher education, teachers in primary art education and teachers in vocational secondary schools, technical colleges, vocational schools, vocational training colleges, specialised pedagogical services, pedagogical professional services, colleges, primary schools, and secondary schools.

The analysis of the sample characteristics revealed the exposure of each type of institution to the pandemic, showing which groups were more affected by the variable. Our results show that, overall, the teachers least affected by the sub-factors of burnout were those who did not require a high level of daily knowledge transfer in the digital curriculum. The risk of burnout was found to be particularly high in primary schools and secondary schools, and significant in the three subscales for employees of educational-professional services, who showed the largest reduction in the factors. Relatively positive values can be reported for primary art schools, higher education institutions, colleges and nursery schools.

The trends in subjective well-being are in many respects the same as the risk of burnout. In our analysis, we found that teachers employed in secondary schools and in institutions providing pedagogical and vocational services have a particularly low average of subjective well-being, while the average of teachers in vocational schools and vocational training institutions is also lower than their average. High scores on the scale were achieved by teachers working in nurseries and by teachers working in kindergartens and colleges. Only these three groups scored above the ten-point average in the analysis of all types of institutions.

Mental health and psychological distress were assessed using the GHQ-12. Based on our data, we conclude that the highest levels of psychological distress are experienced by teachers in institutions providing educational-professional services. They are followed by teachers in teacher training institutions and in secondary schools. The scores of teachers in colleges are relatively high, but teachers in vocational/technical schools and nurseries and kindergartens are more positive about their mental health, with more positive scores.

The type of institution is therefore an influential factor on the outcomes of the burnout risk subscales, subjective well-being and mental health. The data obtained using different

measures for the types of institutions studied are correlated, and working in each type of institution has an impact on mental health indicators.

Demographic indicators in relation to burnout risk and mental health indicators

Szagun, (1991), Holecz, (2006), and Kissné, (2009) also found that there is a significant pattern between the mean scores of the burnout scale and age and time on the field. In order to investigate the relationships, six age categories and five groups categorising time on the field were created in the questionnaire. Similar to the claims of other studies on the subject, the association was confirmed, with an increase in time on track and age as a protective factor against burnout and contributing to higher subjective well-being and better mental health. This may also be due to teachers' life experience of coping, and the fact that those who do not feel a sense of belonging to the profession leave it by this age, as noted by Ms Kiss (2009). Our data confirmed the negative results for younger age groups and for those with a shorter career, but it should be highlighted that the results for those with up to 10 years of career and for those under 40 years of age were more negative for several subscales in terms of burnout risk. However, the risk decreases with age and years in the career. This is partly supported by the correlations between demographic indicators and subjective well-being not presented for the hypotheses.

The WHO-WBI-5 results are positive for the youngest and oldest age groups, with lower average scores for the intermediate age groups. This is correlated with the analysis in terms of time in the career, which may reflect an initial energetic and enthusiastic attitude in younger people with less career experience and a more mature approach associated with a more challenging experience. The most unfavourable trend in terms of years of career and age is also found in the middle-aged group. This is probably the age group who, in addition to trying to meet the challenges of the digital workplace during the pan-academic era, helped their families at home and supported their children in online education, while they were adapting to changes and managing everyday tasks.

By analysing the results obtained, we conclude that there is no age group or category in terms of time spent on the field for which the average subjective well-being score has not decreased. The smallest difference was found for the highest age group, and the most intense decrease was observed when analysing the data for the youngest age group. Data from the GHQ-12 questionnaire were also not presented in terms of demographic indicators in answering the hypotheses, but the results support the correations found for the other two measures. The highest levels of psychological distress, i.e. the poorest mental health, were observed among

those aged under 25. Their scores (13.94 points) are much more favourable than the average of 10.58 points for the oldest age group, which is the most positive score for the age groups. For time spent on the field, mental health shows a more homogeneous picture.

Does the type of settlement of the workplace affect the results of the measurement tools used?

As a number of researchers, including Abel and Sewell (1999), have already made statements on the relationship between settlement status and mental health and stress levels, our research aimed to address this. The intention was also that, knowing that in the case of pandemic measures, each type of municipality could decide for itself on certain issues, the curfew meant different degrees of confinement living in a municipality with urban status and living in a smaller municipality where the majority of residents have their own gardens and green spaces. Researchers found that urban settlements with a larger population were associated with lower mental health and higher distress. During our data collection, we separated four categories, where respondents had to choose whether their workplace was in a municipality, a small town, a city with county status or a capital city.

In the MBI sub-scales, the lowest burnout risk scores were found in municipalities, and the lowest burnout indicators were found in the capital city. The analysis of our data for this measure therefore did not support the research of Abel and Sewell (1999), so that the burnout risk score was inversely correlated with the population size of the municipality. This may be due to the fact that teachers in smaller municipalities are more involved in the lives of their students' families, and thus more sensitive to the challenges that collectively occur in the life of the community.

However, teachers in the capital city scored the lowest on the WHO WBI-5 questionnaire measuring subjective well-being. So despite being less at risk of burnout, they have the lowest subjective well-being of the four groups. Looking at the trends across the four surveys, our analysis found that the most significant decreases were observed for teachers in municipalities and cities with county status, while scores for teachers in small towns and the capital fluctuated less. The most favourable subjective well-being, averaged over the four surveys, was found among teachers employed in cities with county status.

The results of the GHQ-12 measuring the level of psychological distress and mental health reveal a correlation with the trends of the questionnaire measuring subjective well-being. Teachers in the capital city have the worst results, while those in the cities with county status have the best. Our analyses found that there is a relationship between the type of settlement of employment and the risk of burnout, subjective well-being and mental health, although the

relationship does not give the same results for different measures. In terms of burnout, teachers in the capital are more protected, while teachers in lower population municipalities are more at risk, but their subjective well-being and mental health are better than those in the less burnout-prone capital, who have worse scores in other respects.

Correlation between changing circumstances and the relationship between self-efficacy and mental health

In order to explore the relationship between emotional exhaustion, depersonalisation, anxiety and job dissatisfaction and self-efficacy in relation to mental health, we examined the MBI and GHQ-12 questionnaire scores for each category. In terms of correlations, Schwarzer, (1999), Greenglass and Burke, (2000) and Greenglass (2002) found that teachers' self-efficacy was a significant predictor of negative scores on these variables. In our analysis, we examined the associations between gender, age categories, length of career, education, type of institution, and type of locality on the basis of the measures. As a result, we found a correlation, whereby for gender, unfavourable scores for men indicated a correlation between the trend of the two scales. This was also the case when examining the age categories, where a decline in self-efficacy in the youngest age group predicted increasingly unfavourable outcomes for psychological distress. In relation to time in career, the parallel could not be clearly established from the data, although the most intense decline in mental health was recorded here for those with the least time in career. In the case of educational attainment, the groups reporting higher levels of education had worse scores, and this correlation was reflected in the analysis of both measures used. For the type of institution, the claim cannot be supported by the data obtained, and this category does not therefore determine the relationship between emotional exhaustion, depersonalisation, anxiety and job dissatisfaction and self-efficacy in relation to mental health as measured by the two instruments, which correlation cannot be discussed in the context of the type of settlement.

Correlation between digital presence at work and mental health in a longitudinal study

In this phase of exploring the correlations, we started from the finding of Katalin Kollár (2021), according to which the experience of success is inversely related to the energy invested, so the more work the teacher does in a given situation, the less successful he or she feels. In our study, we analysed work performance as a function of hours spent working in online spaces. 2.5 percent of the sample do not use a computer for their work activities, and it is worth pointing our that the value was 0 at the last, i.e. 4th, data collection. By this time, all teachers who

completed the questionnaire had already used digital tools to do their work. However, during the first three data collections, teachers who did not use computers had lower levels of psychological distress and better mental health than their colleagues who used electronic tools to do their work. To examine mental health, we used the results of the GHQ-12 measure, which, when analysed, showed that those who spent the most hours working had the most unfavourable scores. The decline in mental health does not increase uniformly across all data sets in the order of each category, with a correlation between the trends in the 1st and 3rd data sets and the trends in the 2nd and 4th data sets. This correlation can be explained by the coincidence in the timing of the data collections, as data collections 1 and 3 mark the spring period of pandemic waves 1 and 3 with significant increases in psychological distress, and data collections 2 and 4 occurred in the late autumn-winter period of the virus waves 2 and 4, during which three spikes in the results are observed. The most unfavourable mental health indicators are for those who spend less than 1 hour, 6-10 hours and over 21 hours working with digital devices. The results for the other groups paint a more positive picture.

Our analysis has found and supported the claim that digital work is negatively correlated with mental health, i.e. the more time a teacher spends in front of a computer or using smart devices for work, the lower the level of mental health and the higher the psychological distress reported. The results pointed out that, as a consequence of the digital working system, all the teachers in the sample had started to use smart devices in their work, as there were no respondents in the last survey who had not responded that they were working without a computer.

Summarising mental health indicators for teachers in challenging and changing contexts

One of the primary objectives of the research was to explore whether and how the burnout vulnerability, subjective well-being and mental health of teachers working in Hungary in the four waves of the pandemic have changed. Several researchers have reported that prolonged crisis situations can be associated with mental distress (Asmundson & Taylor, 2020), and some international research has found symptoms of post-traumatic stress during quarantine (Brooks et al, Osváth and colleagues (2021) found an increase in psychological distress, anxiety symptoms and depression symptoms, and a Canadian study found that anxiety quadrupled and depression doubled during the pandemic. In the light of these findings, we therefore expected the results of this research to show a negative trend in the data for each of these measures. When examining the MBI scale's vulnerability to burnout, we found significant increases for twosubscales, with only the depersonalisation subscale results not showing a clear negative

trend for the last measure compared to the average of the 1st data collection. Although the depersonalisation was also unfavourable in the 2nd and 3rd survey, the last results show a stabilisation. Nevertheless, emotional depersonalisation and personal performance decline were unfavourable, with teachers scoring medium on these two subscale factors and high on the frequency factor of personal performance decline in several cases. Thus, the risk of burnout among the sampled teachers increased over the longitudinal study.

Our analysis also found a decline in subjective well-being. The results of each data collection do not show a significant decrease, as teachers scored more positively in the 3rd data collection than in the 2nd data collection, but none of the scores in the first data collection reached the subjective well-being score, with the most negative results clearly being those recorded at the end of the pandemic.

Our data show a significant decrease in mental health and an increase in psychological distress, which confirms the findings of Osváth et al. (2021) on the increase in symptoms. Indeed, the results of the GHQ-12 measure show a significant change in the negative trend over the course of the data collection.

The results obtained by using the measurement tools show that during the pandemic, the mental health indicators of the Hungarian teaching population decreased significantly. At the time of the data collection, burnout risk increased and subjective well-being indicators decreased, which correlate with negative mental health outcomes.

Bibliography

Abel, M. H., & Sewell, J. (1999). Stress and burnout in rural and urban secondary school teachers. *The Journal of Educational Research, 92*(5), 287–293. https://doi.org/10.1080/00220679909597608

Állami Egészségügyi Ellátó Központ (2022). Egészségtudományi Fogalomtár. *Egészségmodell. Állami Egészségügyi Ellátó Központ. https://fogalomtar.aeek.hu/index.php/Eg%C3%A9szs%C3%A9gmodell*

Andrejkovics, M., Gasparik, É., Bokor, P., & Frecska, E. (2013). Az orvoslás és a pszichoterápia új paradigmája: a bio-pszicho-szocio-spirituális (BPSS) modell. *Pszichoterápia. 22* (2), 93-99, 2013.

Asmundson, G. J. G., & Taylor, S. (2020). Coronaphobia: Fear and the 2019-nCoV outbreak. *Journal of anxiety disorders, 70,* 102-196. https://doi.org/10.1016/j.janxdis.2020.102196

Awasthi, P. (2011). Spiritualty and health: Apsychological inquiiy. *Journal of Management Ethics and Spirituality, 4*(1). 89-110.

Az Európai Parlament és a Tanács (2016). *Az Európai Parlament és a Tanács (EU) 2016/679 rendelete (2016. április 27.) a természetes személyeknek a személyes adatok kezelése tekintetében történő védelméről és az ilyen adatok szabad áramlásáról, valamint a 95/46/EK rendelet hatályon kívül helyezéséről (általános adatvédelmi rendelet)*. https://net.jogtar.hu/jogszabaly?docid=a1600679.eup

Babbie, E. (2008). *A társadalomtudományi kutatás gyakorlata.* Balassa Kiadó.

Bagdy, E. (2007). Vitalitásgenerátorok. Szubjektív jóllétérzésünk erősítésének és egészséggondozásunk természetes eszközei. In Kállai J., Varga J., & Oláh A. (Eds.), *Egészségpszichológia a gyakorlatban* (pp. 239-278). Medicina Kiadó.

Bagdy, E., & Telkes, J. (1994). *Személyiségfejlesztő módszerek az iskolában*. Nemzeti Tankönyvkiadó.

Belkic, K. L., Landsbergis, P. A., Schnall, P. L., & Baker, D. (2004). Is job strain a major source of cardiovascular disease risk?. Scandinavian journal of work, environment & health, 30(2), 85–128. https://doi.org/10.5271/sjweh.769

Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet (London, England), 395*(10227), 912–920. https://doi.org/10.1016/S0140-6736(20)30460-8

Chally, P. S., & Carlson, J. M. (2004). Spirituality, rehabilitation, and aging: a literature review. *Archives of physical medicine and rehabilitation, 85*(7 Suppl 3), 60–S67. https://doi.org/10.1016/j.apmr.2004.03.013

Engel G. L. (1977). The need for a new medical model: a challenge for biomedicine. *Science (New York, N.Y.), 196*(4286), 129–136. https://doi.org/10.1126/science.847460

Falus, I (2004). *Bevezetés a pedagógiai kutatás módszereibe*. Műszaki Könyvkiadó.

Farber, B. A. (1991). *Crisis in education: Stress and burnout in the American teacher.* Jossey Bass.

Farkas, P. (2011). A pedagógusi szakma mentálhigiénés aspektusai: a pedagógusok lelki egészsége. *Keresztény Szó. 22*(10). http://epa.oszk.hu/00900/00939/00132/

Farkas, P. (2011). A pedagógusi szakma mentálhigiénés aspektusai: a pedagógusok lelki egészsége. *Keresztény Szó. 22*(10). http://epa.oszk.hu/00900/00939/00132/

Fejes, É. (2021). *A munkaképesség csökkenés két tényezőjének: a fejfájás és az egészségügyi dolgozók kiégésének komplex vizsgálata*. Doktori (PhD) értekezés. Pécsi Tudományegyetem Általános Orvostudományi Kar.

Fekete, S. (1991). Segítő foglalkozások kockázatai - Helfer szindróma és Burnout jelenség. *Psychiatria Hungarica, 6*(1), 17-29.

Füzesi, Zs., & Lampek, K. (2012). Az egészség fogalmának alakulása. In Oláh A. (Ed.) *Az ápolástudomány Tankönyve (pp105-110)*. Medicina Könyvkiadó Zrt.

Galicza, J., & Schődl, L. (1994). *Pedagógusok gubancai: a lelki egészség megőrzésének lehetőségei a pedagóguspályán*. Veszprém Megyei Pedagógiai Intézet.

Gáspár, M., & Holecz, A. (2005). Pályaszocializáció és személyiségvonások a pedagóguspálya szempontjából. *Pedagógusképzés, 3*(2), 23–40.

Gáspár, M., Holecz, A., Kiss, J., Kovács, J., Örkényi, Á., & Simon, K. (2006). *A személyiség belső feltételeinek és stabilitásának alakulása a pályaszocializáció függvényében*. Budapest: OTKA Kutatási Jelentés.

Goldberg, D. (1992). *General Health Questionnaire (GHQ-12)*. NFER-Nelson.

Goldberg, D. P., & Blackwell, B. (1970). Psychiatric illness in general practice. A detailed study using a new method of case identification. British medical journal, 1(5707), 439–443. https://doi.org/10.1136/bmj.2.5707.439

Greenglass E.R. & Burke R.J. (2000) Hospital downsizing, individual resources, and occupational stressors in nurses. *Anxiety, Stress & Coping: An International Journal, 13*(4), 371–390. https://doi.org/10.1080/10615800008248342

Greenglass, E. R. (2002). Work stress, coping, and social support: Implications for women's occupational well-being. In D. L. Nelson & R. J. Burke (Eds.), *Gender, work stress, and health (pp. 85–96)*. American Psychological Association. https://doi.org/10.1037/10467-006

Haberman, M. (2004). Teacher Burnout In Black & White. *The New Educator, 1*(3), 153-175. DOI: 10.1080/15476880590966303

Haberman, M. (2005). Teacher Burnout in Black and White. *The New Educator, 1,* 153 - 175.

Heun, R., Burkart, M., Maier, W., & Bech, P. (1999). Internal and external validity of the WHO Well-Being Scale in the elderly general population. *Acta Psychiatrica Scandinavica, 99*(3), 171–178. DOI: 10.1111/j.1600-0447.1999.tb00973.x

Hézser, G. (2001). *Miért? Rendszerszemlélet a lelki gondozói gyakorlatban*. Kálvin Kiadó.

Holecz, A. (2006). Pedagógusjelöltek és pedagógusok személyiség- és megküzdési jellemzői. *Alkalmazott Pszichológia, 8*(4), 22–40.

Horváth-Szabó, K. (1990). A tanári stressz és következményei. *Új Pedagógia Szemle, 40. (1990/1),* 14-19.

Jakab, E., Neculai, K., Komáromi, J., & Lázár, I. (2006). Munkahelyi stresszdiagnózis a munkahelyi stresszmenedzsmentben. *Alkalmazott pszichológia. 8*(1). 101-126.

Jarvis, M. (2002). Teacher stress: A Critical Review of Recent Findings and Suggestions for Future Research Directions. *Stress News, 14.(2002/1),* 12-16.

Kissné Geosits, B. (2009). *Sport, pályaválasztás és a lelki egészség a nevelés, oktatás területén dolgozó szakembereknél.* Doktori (PhD) értekezés, Semmelweis Egyetem Nevelési- és Sporttudományi Doktori Iskola.

Knauder, H. (1996). Burnout and Schulklima. *Erziehung & Unterricht, 146 (9),* 682-688.

Kocsis, M. (2003). *A tanárképzés megítélése. Iskolakultúra-könyvek, 18. Iskolakultúra.* Molnár Nyomda és Kiadó Kft.

Kopp, M., Skrabski Á., Szántó, Zs., & Siegrist, J. (2006). Psychosocial determinants of premature cardiovascular mortality differences within Hungary. *Journal Epidemiology and Community Health, 60*(9). 782-8. doi: 10.1136/jech.2005.042960.

Kovács, M. (2006). A kiégés jelensége a kutatási eredmények tükrében. *Lege Artis Medicinæ, 16*(11), 981-987.

Kristensen, T.S. (1996). Job stress and cardiovascular disease: a theoretic critical review. *Journal of Occupational Health Psychology, 1* (3). 246-260. DOI: 10.1037//1076-8998.1.3.246

Kulcsár, Zs. (2009). *Trauma-feldolgozás és vallás*. Trefort.

Landsbergis, P. A., Schnall, P. L., Belkić, K. L., Baker, D., Schwartz, J., & Pickering, T. G. (2001). Work stressors and cardiovascular disease. *Work (Reading, Mass.), 17*(3), 191–208.

Lelesz, K. (2001). A tanári kiégesről mint „tünetről". *Új Pedagógiai Szemle, 51*(12), 98–102.

Maslach, C., & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Occupational Behaviour, 2*(2), 99-113. DOI: 10.1002/job.4030020205

Maslach, C., & Leiter, M. P. (2008). Early predictors of job burnout and engagement. *Journal of Applied Psychology*, 93(3), 498–512. https://doi.org/10.1037/0021-9010.93.3.498

Moreno, J. D. (1994). Psychodramatic moral philosophy and ethics. In P. Holmes; M. Karp & M. Watson, (Eds). *Psychodrama since Moreno: Innovations in theory and practice*. Routledge.

Ónody, S. (2001). Kiégési tünetek (burnout szindróma) keletkezése és megoldási lehetőségei. *Új Pedagógiai Szemle, 51* (5), 80–85.

Organisation for Economic Cooperation and Development (2009). *Creating Effective Teaching and Learning Environments: First Results from TALIS.* Organisation for Economic Cooperation and Development . ISBN-13: 978-9264056053
http://www.oecd.org/dataoecd/17/51/43023606.pdf ISBN-13: 978-9264056053

Osváth P., Bálint L., Németh A. és szerzőtársai (2021). A magyarországi öngyilkossági halálozás változásai a COVID–19-járvány első évében. *Orvosi Hetilap 162*(41), 1631-1636. doi: 10.1556/650.2021.32346

Paksi, B., & Schmidt, A. (2006). Pedagógusok mentálhigiénés állapota. *Új Pedagógiai Szemle, 56* (6), 48–64.

Petróczi, E. (1999). A kiégés jelensége pedagógusoknál. *Magyar Pszichológiai Szemle, 54* (3), 429-441.

Petróczi, E. (2007). Ki*égés – elkerülhetetlen?.* Eötvös József Könyvkiadó.

Petróczi, E., Fazekas, M., Tombácz, Zs., & Zimányi, M. (1999). Akiégés jelensége pedagógusoknál. *Magyar Pszichológiai Szemle, 54*(3), 429–441

Salavecz, Gy., Neculai, K., & Jakab, E. (2006). A munkahelyi stressz és az énhatékonyság szerepe a pedagógusok mentális egészségének alakulásában. *Mentálhigiéné és Pszichoszomatika 7*(2), 95-109. DOI: 10.1556/Mentál.7.2006.2.2. 1419-8126

Schmidbauer, W. (1977). Di*e hilflosen Helfer.* Rohwolt, Reinbek.

Schnall, P. L., Landsbergis, P. A., & Baker, D. (1994). Job strain and cardiovascular disease. *Annual review of public health, 15*, 381–411. https://doi.org/10.1146/annurev.pu.15.050194.002121

Schwarzer R. (1999). Self-regulatory Processes in the Adoption and Maintenance of Health Behaviors. *Journal of health psychology, 4*(2), 115–127. https://doi.org/10.1177/135910539900400208

Shaw, A., Joseph, S., & Linley P, A. (2005). Religion, spirituality, and posttraumatic growth: A systematic review. *Mental Health, Religion and Culture, 8*(1). 1-11.

Susánszky, É., Konkolÿ 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. *Mentálhigiéné és Pszichoszomatika, 7*(3). 247-255. DOI: 10.1556/Mental.7.2006.3.8

Szagun, A. K. (1991). *Wieder die Symptomkuriererrei an einer Systemkrankheit: Mutmasungen zu Strukturellen Ursachen des Burnout bei LehrKraften. Die Dutsche Schule, 1,* 427–433.

Szitó, I. (2004). *Mentálhigiéné*. Internetes kéziratként megjelent dokumentum. http://www.szitoimre.com/doc/18_mentalhigiene.pdf

Szokolszky, Á. (2006). *Kutatómunka a pszichológiában:gyakorlatok*. Osiris Kiadó.

Temesváry, B. (2010). Direkt és indirekt önpusztítás, avagy hogyan lehet a „szuicidogén klímát" csökkenteni?. *Egészségtudomány, 54(3),* 45-53.

Theorell, T., & Karasek, R. (1996). Current issues relating to psychological job strain and cardiovascular disease research. *Journal of Occupational Health Psychology, 1* (1), 9–26. DOI: 10.1037//1076-8998.1.1.9

Travers, C. J., & Cooper, C. L. (1993). Mental health, job satisfaction and occupational stress among UK teachers. *Work and Stress, 7*, 203-219. doi:10.1080/02678379308257062

Tsutsumi, A., & Kawakami, N. (2004). A review of empirical studies on the model of effort-reward imbalance at work: reducing occupational stress by implementing a new theory. *Social science & medicine (1982), 59*(11), 2335–2359. https://doi.org/10.1016/j.socscimed.2004.03.030

Urbán, R.1995). Boldogság, személyiség és egészség. *Magyar Pszichológiai Szemle, 51*(5-6). 379-404.

Van der Doaf, M., & Maes, S. (1999). The job demand-control (-support) model and psychological well-being: a review of 20 years of empirical research. *Work and Stress, 13*(2), 87-114. DOI:10.1080/026783799296084

Van Vegchel, N., De Jonge, J., & Schaufeli, W. (2005). Reviewing the effort-reward imbalance model: drawing up the balance of 45 empirical studies. *Social science & medicine (1982), 60*(5), 1117–1131. DOI: 10.1016/j.socscimed.2004.06.043

Wilson, V.A. (2002). *Feeling the Strain: An Overview of the Literature on Teachers' Stress*. Affiliation: University of Glasgow

World Health Organization (2001). *The world health report 2001 - Mental Health: New Understanding, New Hope*. World Health Organization.