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PERCEIVED STRESS AND BURNOUT The Mediating Role of Psychological, Professional Self-Care and Job Satisfaction as Preventive Factors in Helping Professions**

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Background: Stress and burnout are among the common causes of absenteeism and fluctuation of staff in European workplaces. Therefore, the demand for understanding the predictors of burnout in high risk professions has been growing. The aim of this study is to explore the link between perceived stress and the three dimensions of burnout (emotional exhaustion, depersonalization, and personal accomplishment) while considering the potential mediating role of self-care and job satisfaction that may prevent the transformation of stress into burnout.

Methods: A randomly selected group of Slovak social service professionals (N = 689; 618 women) from institutions in 8 districts in Slovakia described their levels of perceived stress, burnout, performed self-care and job satisfaction in self-reported questionnaires.

Results: The relationship between stress and emotional exhaustion is solely mediated by certain aspects of job satisfaction: salary, nature of work, and operating procedures. The relationship between stress and depersonalization is mediated by the nature of work, psychological self-care, and professional self-care. However, professional self-care does not prevent but rather facilitates the development of depersonalization in times of high perceived stress. The relationship between stress and personal accomplishment is mediated by psychological and professional self-care as well as by three factors of job satisfaction: co-workers, nature of work and job benefits. When stress increases, satisfaction with co-workers and nature of work prevent the decrease of personal accomplishment. However, job benefits, with increasing stress, may be related to a decrease in personal accomplishment at work.

Conclusion: Satisfaction with salary, nature of work, operating procedures and co-workers as well as psychological self-care may prevent the further development of burnout in times of high stress. Yet, professional self-care and job benefits may, in times of increased stress, potentially lead towards specific aspects of burnout (depersonalization and reduction of personal accomplishment).

Keywords: stress, burnout, job satisfaction, self-care, helping profession, social service, mental health

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1. Introduction

In the past 10 years, numerous studies and self-help books have been published about stress and burnout in the helping professions. These studies have emphasized the importance of personal resources and variability of self-care activities that could be beneficial (FIGLEY et al. 2013; NORCROSS & VANDENBOS 2018; TROTTER-MATHISON & SKOVHOLT 2014). Helping professionals work under demanding job conditions with a high level of responsibility (HAVRDOVÁ & ŠOLCOVÁ 2002), emotional strain (LLOYD et al. 2002), extraordinary emotional control and communication that needs to conform to ethical codex. Other possible stressors could also be poor supervision, conflicts in the workplace, a weak rewarding system, overworking (TILLEY & CHAMBERS 2003) or a discrepancy between ideals and work outcomes (LLOYD et al. 2002). Such job characteristics have been linked to the development of burnout syndrome (MASLACH et al. 2001; OGRESTA et al., 2008; SCHAUFELI & GREENGLASS 2001). However, the conditions in the field of social services are quite specific. Individuals working in this sphere may not be there for the salary or benefits, but rather for the nature of the work – the caring for others that may be experienced as rewarding in itself. While satisfaction with the nature of work is a strong motivator and engaging factor (HARTER et al. 2002), caring for others has also been identified as a risk factor for burnout (KALLIATH & MORRIS 2002).

COHEN and JANICKI-DEVERTS (2012) have assessed the levels of perceived stress across generations, races, and working groups in USA. Their study has revealed a continuing significant increase of perceived stress in the years from 1983 to 2006 to 2009. The current results from Slovakia have revealed that professionals working in social services experience higher levels of perceived stress on average (HRICOVÁ et al. 2017), especially when compared to the online accessible norms stated by Mind Garden (COHEN 1994), the publisher of the Perceived stress questionnaire. However, it seems that the publisher Mind Garden still offers non-updated norms closely related to COHEN and JANICKI-DEVERTS's (2012) results from 1983. On the other hand, the levels of burnout in helping professionals in Slovakia are not above average levels (KÖVEROVÁ & RÁCZOVÁ 2017). The result of combined high perceived stress, yet not too high levels of burnout, could be related to the excessive turnover rate of helping professionals in social services that may leave this occupation before burnout symptoms fully develop. Therefore, there is an emerging quest for psychologists to identify the potential factors that could protect an individual from developing burnout in an environment that is already stressful. The aim of this study is to explore the possible role of job satisfaction and self-care in the stress-burnout relationship.

1.1. Stress and Burnout

Burnout can be defined as the state of physical, emotional, and mental exhaustion caused by long-term subsistence in extremely emotionally demanding work situations (SCHAUFELI & GREENGLASS 2001; KRISTENSEN et al. 2005). Burnout syndrome has been

described from the perspective of the tripartite component system that consists of emotional exhaustion, depersonalization, and reduced personal accomplishment. It can be understood as both a state with actual symptoms of physical and mental exhaustion or as a dynamic process (MASLACH & GOLDBERG 1998; SCHAUFELI & BUUNK, 2003). In the procedural approach, burnout syndrome develops in stages gradually due to increasing stress and the inability of a person to cope with their excessive workload (MASLACH et al. 2001; SCHAUFELI & BUUNK 2003). The relationship between chronic stress and burnout is positive but not straightforward. In other words, stress alone does not cause burnout (ROTHMANN et al. 2003; IACOVIDES et al. 2003). The environmental and personal triggers as well as inhibitors of burnout have been studied rigorously in previous studies. The Job Demands-Resources model (BAKKER & DEMEROUTI 2007; SCHAUFELI et al., 2009) and further Job Demands-Resources theory (BAKKER & DEMEROUTI 2014; 2017) assume that job demands may lead to energy depletion, exhaustion, and other health-related problems. Similarly, the Conservation of Resources (COR) theory (HOBFOLL 1989; HOBFOLL et al. 2018) suggests that the decrease of personal or job resources is connected to a steep increase of stress and could potentially lead to exhaustion. On the other hand, it has been found that satisfaction with personal or job resources might have a stress-reducing effect (HAKANEN et al. 2008; HOBFOLL 2018).

1.2. Job satisfaction

Job satisfaction represents the affective and cognitive response of an individual towards one's job situation (LOCKE 1976; SMITH et al. 1969). Two traditional approaches are used to assess job satisfaction – the global (overall, general) and the facet-type (sum of components or aspects). While facet-type job satisfaction may be beneficial for the assessment of specific areas of job satisfaction, the sum of these facets would not reflect overall job satisfaction. This is mostly due to the fact that each individual may perceive different facets as relevant or important.

1.3. Self-care

Self-care is a complex mix of physical, psychological, mental and spiritual activities that are performed by an individual with the aim of maintaining or improving health (CARROL et al. 1999), physical and psychological well-being and personal growth (GODFREY et al. 2011; LOVAŠ 2014). It is a self-regulated, deliberate, and aim-oriented activity (SEGALL & GOLDSTEIN 1989; LOVAŠ 2014). Self-care has been studied as a potential factor in preventing the development of negative outcomes in helping others such as burnout and compassion fatigue (ALKEMA et al. 2008; BARNETT et al. 2007; CARROL et al. 1999; GRINER 2013). Self-care activities are often encouraged due to their close link with compassion satisfaction and well-being (ALKEMA et al. 2008; RICHARDS et al. 2010). Therefore, self-care represents a natural starting point for the prevention of burnout syndrome or other negative consequences of helping professions (JONES 2005; MASLACH & GOLDBERG 1998).

1.4. The Present Study

The aim of this study is to analyze and identify the possible mediators between stress and the three factors of burnout in a specific sample of helping professionals. Three models have been created in order to examine the relationship between stress and these three aspects of burnout. This study attempts to explore the possible role of job satisfaction and self-care in the stress-burnout relationship. Although the relationship between stress and burnout has been previously studied, the possible mediating role of job satisfaction and performing self-care activities has not been empirically explored.

2. Materials and methods

2.1. Participants

The research sample comprised of 698 respondents from helping professions in the area of social services. Institutions that offer psychological support and social welfare services were randomly selected from a list on the Ministry of Labour, Social Affairs, and Family's website (Ministerstvo práce, sociálnych vecí a rodiny SR; <https://www.employment.gov.sk/en/>). The selection was done using a random number generator. There were 14 institutions from all 8 districts in Slovakia which were selected and recruited via e-mail and telephon communication. The contacted institutions that formally agreed to co-operate and were able to provide anonymity to the respondents, were sent the test batteries (pen-and-paper format). Research coordinators were present at the research locations and further explained the instructions. The response rate of the individuals from the institutions was 83.5%. All subjects participated voluntarily. The data collection was done from September 2015 to December 2016. The research was conducted as part of a large national study and received ethical approval. From the original sample (N = 709), 11 outliers were identified by the Mahalanobis' distances method and were subsequently excluded from further analysis. The final sample (N = 698) consisted of 618 women (88.5%), 74 men (10.6%) and 6 with no reported gender. The sample comprised of social workers N = 188; residential care providers N = 191; ergo, therapists N = 97 and providers of physical care N = 222 (nurses, physiotherapists, orderlies). The average age of the participants was 43.9 years (SD = 10.4). The participants received psychosocial support on a regular basis in the form of compulsory courses the state offered to these institutions.

2.2. Measures

Maslach Burnout Inventory – Human Services Survey (MBI-HSS; MASLACH et al. 1996). The inventory was translated in line with the purchased translation agreement (TA-673). The instrument consists of 22 items that measure three aspects of burnout syndrome; i.e. the level of emotional exhaustion (e.g. *I feel emotionally drained from*

my work'), depersonalization (e.g. *'I don't really care what happens to some recipients'*) and personal accomplishment (e.g. *'I feel I'm positively influencing other people's lives through my work'*). Respondents indicate the frequency of experiencing work-related feelings using a 7-point scale (0 = never; 6 = every day). The authors used positive scoring for personal accomplishment. Similarly, some meta-analyses (e.g. POGHOSYAN et al. 2009) have reported personal accomplishment as a positive criterion that decreases burnout. McDonald's omega reliability estimates were 0.89 for emotional exhaustion, 0.72 for depersonalization and 0.78 for personal accomplishment. The omega reliability has been preferred over alpha reliability indicator by several authors (CHO & KIM 2015; DUNN et al. 2014; TRIZANO-HERMOSILLA & ALVARADO 2016).

Perceived Stress Scale (PSS; COHEN et al. 1983). A Slovak translation (RÁCZOVÁ et al. 2018) of this 10-item measure was used to assess the level of perceived stress among helping professionals. Respondents are asked to indicate the frequency of their feelings and thoughts during the last month, on a 5-point scale (1 = never; 5 = very often); e.g. *'In the last month, how often have you felt nervous and "stressed"?'*. A higher score indicates a higher level of perceived stress. In the current study, the reliability (McDonald's omega) of the perceived stress scale was 0.79.

The Performed Self-Care Activities questionnaire (VSS; LICHNER 2017; LICHNER et al. 2018) is a 31-item questionnaire which measures performed activities in the sphere of self-care among helping professionals. Respondents are asked to answer how often they perform activities on a 5-point scale (1 = never; 5 = always). The questionnaire is comprised of four factors: psychological self-care (F1): maintaining a good atmosphere and relationships, positive thinking, control of emotions (e.g. *'I think positively'*), professional self-care (F2): education, professional growth, and self-development (e.g. *'To cope with the workload I use professional growth'*), health self-care (F3) (e.g. *'In the case of health problems, I visit a doctor'*), physical self-care (F4) (e.g. *'I play sports'*).

Previous research has revealed that activities in the sphere of professional and psychological self-care have the strongest relationship with burnout and other negative consequences from the helping professions (KÖVEROVÁ & RÁCZOVÁ 2017). Therefore, only these two selected factors were used in the current analysis. In this study, McDonald's omega reliability estimate for psychological self-care was 0.87 and 0.75 for professional self-care.

The Job Satisfaction Survey (JSS; SPECTOR 1985; 1997) is a 36-item multidimensional questionnaire. It consists of nine components: pay, promotion, supervision, fringe benefits (monetary and non-monetary benefits), contingent rewards (appreciation, recognition and rewards for good work), operating procedures (operating policies and procedures, administrative work), co-workers (their competence, sympathy), nature of work (job tasks themselves, perceived meaningfulness, joy from work) and communication within the organization (goals, assignments being well explained). The response format of the JSS is a 6-point scale (1 = highly disagree; 6 = highly agree). The reliability and validity of the translated scale has been tested on a large sample of

Table 1
Descriptive statistics and two-tailed Pearson correlation between used variables

	JSS									Self-care		MBI		Stress	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<i>JSS</i>															
<i>1 Pay</i>	–	0.61***	0.67***	0.69***	0.22***	0.22***	0.32***	0.25***	0.43***	0.004	0.15***	–0.29***	–0.08*	0.07	–0.14***
<i>2 Promotion</i>	0.61***	–	0.58***	0.52***	0.19***	0.18***	0.25***	0.21***	0.34***	–0.01	0.13**	–0.18***	0.01	0.03	–0.05
<i>3 Benefits</i>	0.67***	0.58***	–	0.60***	0.27***	0.28***	0.34***	0.27***	0.43***	–0.01	0.07	–0.26***	–0.13**	0.03	–0.16***
<i>4 Rewards</i>	0.69***	0.52***	0.60***	–	0.32***	0.24***	0.36***	0.25***	0.45**	–0.003	0.11**	–0.28***	–0.06	0.05	–0.15***
<i>5 Supervision</i>	0.22***	0.19***	0.27***	0.32***	–	0.42***	0.46***	0.35***	0.20***	0.16***	0.09*	–0.27***	–0.17***	0.19***	–0.21***
<i>6 Coworkers</i>	0.22***	0.18***	0.28***	0.24***	0.42***	–	0.60***	0.37***	0.24***	0.15***	0.11**	–0.32***	–0.22***	0.25***	–0.37***
<i>7 Communication</i>	0.32***	0.25***	0.34***	0.36***	0.46***	0.60***	–	0.38***	0.34***	0.15***	0.14***	–0.38***	–0.25***	0.21***	–0.39***
<i>8 Nature Of Work</i>	0.25***	0.21***	0.27***	0.25***	0.35***	0.37***	0.38***	–	0.20***	0.41***	0.31***	–0.52***	–0.37***	0.45***	–0.44***
<i>9 Operating Procedures</i>	0.43***	0.34***	0.43***	0.45***	0.20***	0.24***	0.34***	0.20***	–	0.02	0.011	–0.32***	–0.13***	0.01	–0.21***
<i>Self-care</i>															
<i>10 Self-care F1</i>	0.004	–0.01	–0.01	–0.003	0.16***	0.15***	0.15***	0.41***	0.02	–	0.52***	–0.20***	–0.26***	0.44***	–0.36***
<i>11 Self-care F2</i>	0.15***	0.13***	0.07	0.11**	0.09*	0.11**	0.14***	0.31***	0.011	0.52***	–	–0.19***	–0.10**	0.39***	–0.28***
<i>MBI</i>															
<i>12 Exhaustion</i>	–0.29***	–0.18***	–0.26***	–0.28***	–0.27***	–0.32***	–0.38***	–0.52***	–0.32***	–0.20***	–0.19***	–	0.39***	–0.22***	0.51***
<i>13 Depersonalisation</i>	–0.08*	0.01	–0.13**	–0.06	–0.17***	–0.22***	–0.25***	–0.37***	–0.13***	–0.26***	–0.09**	0.39***	–	–0.24***	0.31***
<i>14 Personal Accomplishment</i>	0.07	0.03	0.03	0.05	0.19***	0.25***	0.21***	0.45***	0.01	0.44***	0.39***	–0.22***	–0.24***	–	–0.37***
<i>15 Perceived Stress</i>	–0.14***	–0.05	–0.16***	–0.15***	–0.21***	–0.35***	–0.39***	–0.44***	–0.21***	–0.36***	–0.28***	0.51***	0.31***	–0.37***	–
<i>Mean</i>	10.57	11.76	13.13	12.30	19.16	17.93	16.89	19.12	12.19	59.28	20.72	18.88	4.29	34.97	25.89
<i>Median</i>	10.00	12.00	13.00	12.00	20.00	18.00	17.00	19.00	12.00	60.00	21.00	17.00	3.00	36.00	26.00
<i>SD</i>	4.30	3.75	4.04	3.88	3.72	3.28	3.89	3.12	3.57	6.76	4.52	10.85	4.52	7.68	4.85

professionals in helping occupations (MESÁROŠOVÁ 2016). The McDonald's omega reliability of the individual subscales in the current sample were: pay 0.77, promotion 0.73, supervision 0.75, fringe benefits 0.70, contingent rewards 0.70, operating procedures 0.71, coworkers 0.76, nature of work 0.72 and communication 0.72.

2.3. Data Preparation and Analytical procedures

The ordinary least squares regression analysis was used to compute the results of the three multiple mediation models. The models were tested in Process Macro 3.1 in SPSS (PREACHER & HAYES 2004) while the standardized effects were computed in Amos 21. The assumptions were tested in view of a 95% bias-corrected confidence interval based on 100,000 bootstrap samples. The correlation coefficients and alpha reliability were computed in SPSS 21.

3. Results

The correlation matrix (*Table 1*) shows that psychological and professional self-care are related to perceived stress in the helping professions. The factors of job satisfaction, with the exception of satisfaction with promotion ($r = -0.05$; $p = 0.19$), are also related to stress. As a result of satisfaction with promotion not being related to perceived stress, it has been excluded from the further path analysis. All factors of job satisfaction, as well as psychological and professional self-care, are related to the burnout factor of emotional exhaustion. With regard to the factors of burnout, the situation is different for depersonalization and personal accomplishment. Although psychological and professional self-care are related to emotional exhaustion and depersonalization (aspects of burnout), only some factors of job satisfaction are significantly related to these two aspects of burnout (*Table 1*). The descriptive statistics have revealed that the professional helpers in the sample seem to be satisfied with their supervision and management (89% were satisfied), co-workers (85.2%), communication at the workplace (73.6%) and nature of work (92.1%). However, it is important to mention that these professional helpers were often less satisfied in the dimensions of pay (only 17.3% were satisfied), promotion (21.2%), benefits (36.8%), rewards (26.6%) and operating procedures (25.2%).

3.1. Mediation model linking perceived stress and emotional exhaustion

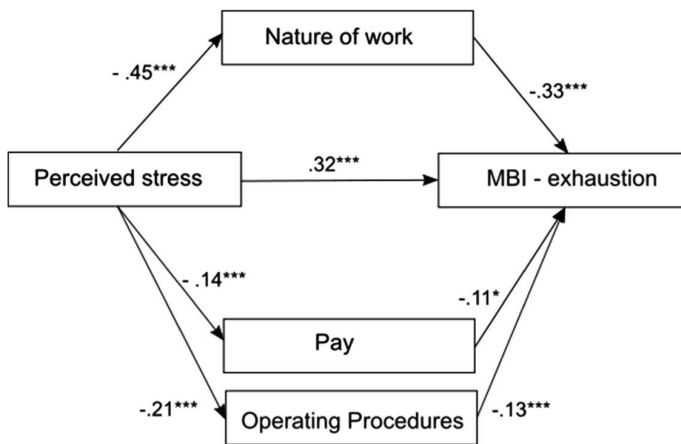
Perceived stress predicted 25.85% of the variability of MBI-emotional exhaustion. The total effect of the parallel multiple mediation analysis indicates that the model was significant $R^2 = 0.26$, $F(1.696) = 294.42$, $p < 0.001$. The direct effect (*Table 2*) of stress on emotional exhaustion was significant ($\beta = 0.317$; $p < 0.001$; 95% CI = 0.247, 0.384). The indirect effect of stress on emotional exhaustion was also significant ($\beta = 0.191$; $p < 0.001$; 95% CI = 0.145, 0.241). The relationship between stress and emotional exhaustion is partially mediated by factors of the JSS: satisfaction with

Table 2
Standardized Estimates of Direct and Total Indirect Effect of Stress in the Model
of Perceived Stress and MBI – Emotional Exhaustion (N=698)

<i>Effect</i>	<i>Standardized effects</i>	<i>95 % bias corrected CI for Bootstrapped Standard regression Weights</i>		<i>Bootstrap p</i>
<i>Total effect of stress on MBI-EE</i>	0.508	0.450	0.560	< 0.001
<i>Indirect effect</i>				
Stress → MBI-EE	0.191	0.145	0.241	< 0.001
<i>Direct effects</i>				
Stress → MBI-EE	0.317	0.247	0.384	< 0.001
PSS → Pay	-0.141	-0.214	-0.068	< 0.001
PSS → Benefits	-0.163	-0.237	-0.088	< 0.001
PSS → Rewards	-0.147	-0.224	-0.072	< 0.001
PSS → Supervision	-0.215	-0.291	-0.137	< 0.001
PSS → co-workers	-0.346	-0.413	-0.276	< 0.001
PSS → communication	-0.399	-0.468	-0.326	< 0.001
PSS → nature of work	-0.446	-0.502	-0.388	< 0.001
PSS → operating procedures	-0.213	-0.292	-0.132	< 0.001
PSS → psychological SC (F1)	-0.355	-0.415	-0.290	< 0.001
PSS → professional SC (F2)	-0.280	-0.349	-0.207	< 0.001
Pay → MBI-EE	-0.106	-0.195	-0.016	0.022
Benefits → MBI-EE	0.047	-0.042	0.134	0.307
Rewards → MBI-EE	-0.016	-0.106	0.078	0.752
Supervision → MBI-EE	-0.024	-0.105	0.056	0.551
co-workers → MBI-EE	-0.004	-0.077	0.070	0.936
communication → MBI-EE	-0.054	-0.131	0.026	0.176
nature of work → MBI-EE	-0.330	-0.405	-0.253	< 0.001
operating procedures → MBI-EE	-0.131	-0.199	-0.065	< 0.001
psychological SC (F1) → MBI-EE	0.067	-0.009	0.141	0.089
professional self-care (F2) → MBI-EE	-0.007	-0.080	0.066	0.842

Note: Bootstrap (10 000) 95% bias-corrected confidence intervals and Significance Levels. Confidence interval is significant when 0 is not included.

pay, nature of work and operating procedures (Table 2 and Figure 1). It was also found that increased stress is related to an increase in emotional exhaustion both directly and indirectly – through reduced satisfaction with pay, nature of work and operating procedures. The increase of perceived stress was related to a decline of satisfaction in the nature of the work, as well as satisfaction with pay, and operating procedures. However, satisfaction with the nature of work, pay, and operating procedures may buffer the development of emotional exhaustion (Table 2, Figure 1). The other factors of job satisfaction were not found to be significant mediators. Self-care activities were also not significant mediators. The assumptions were tested in view of a 95% bias-corrected confidence interval based on 100.000 bootstrap samples. All the direct and indirect effects are recorded in Table 2.



*p < 0.05; **p < 0.01; ***p < 0.001

Figure 1

Standardized effects in the Multiple mediation model predicting MBI – emotional exhaustion. Only significant mediators are defined.

The ratio of total indirect to direct effect: $R_M = 0.60$ (SE = 0.13; 95%CI = 0.40; 0.93) reveals that the indirect effect of stress on emotional exhaustion is 60% the size of the direct effect. From the total effect of stress on emotional exhaustion, in the presented model, the direct effect of stress determines emotional exhaustion more than the total indirect effect .

3.2. Mediation model linking perceived stress and depersonalization

The parallel multiple mediation analysis indicates that perceived stress predicts 9.72% of the variability of MBI-depersonalization. The total effect of the parallel multiple mediation analysis model was significant $R^2 = 0.10$, $F(10.696) = 80.43$,

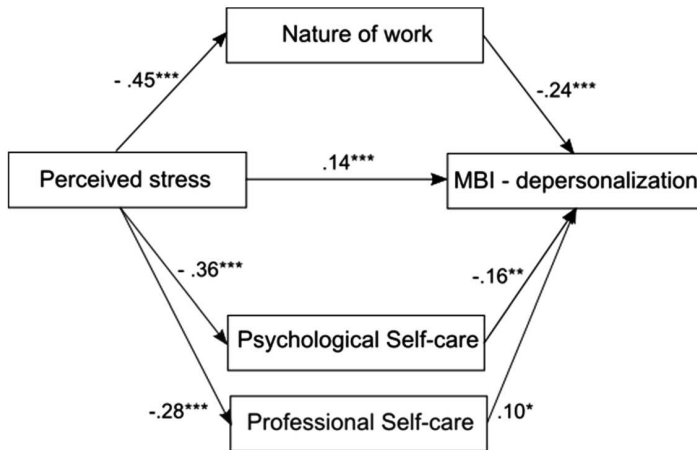
Table 3
Standardized estimates of total, direct, and indirect effects of stress in the Model
of Perceived stress and MBI – depersonalization (N=698)

<i>Effect</i>	<i>Standardized effects</i>	<i>95 % bias corrected CI for Bootstrapped Standard regression Weights</i>		<i>Bootstrap p</i>
<i>Total effect of stress on MBI-DP</i>	0.314	0.251	0.373	< 0.001
<i>Indirect effect</i>				
Stress → MBI-DP	0.179	0.131	0.232	< 0.001
<i>Direct effects</i>				
Stress → MBI-DP	0.135	0.056	0.212	< 0.001
PSS → Pay	-0.141	-0.214	-0.068	< 0.001
PSS → Benefits	-0.163	-0.237	-0.088	< 0.001
PSS → Rewards	-0.147	-0.224	-0.072	< 0.001
PSS → Supervision	-0.215	-0.291	-0.137	< 0.001
PSS → co-workers	-0.346	-0.413	-0.276	< 0.001
PSS → communication	-0.399	-0.468	-0.326	< 0.001
PSS → nature of work	-0.446	-0.502	-0.388	< 0.001
PSS → operating procedures	-0.213	-0.292	-0.132	< 0.001
PSS → psychological SC (F1)	-0.355	-0.415	-0.290	< 0.001
PSS → professional SC (F2)	-0.280	-0.349	-0.207	< 0.001
Pay → MBI-DP	0.022	-0.074	0.117	0.634
Benefits → MBI-DP	-0.068	-0.160	0.027	0.161
Rewards → MBI-DP	0.085	-0.015	0.181	0.089
Supervision → MBI-DP	0.002	-0.073	0.076	0.956
co-workers → MBI-DP	-0.017	-0.107	0.075	0.709
communication → MBI-DP	-0.087	-0.189	0.014	0.093
nature of work → MBI-DP	-0.243	-0.325	-0.154	< 0.001
operating procedures → MBI-DP	-0.039	-0.111	0.031	0.272
psychological SC (F1) → MBI-DP	-0.157	-0.245	-0.073	0.001
professional self-care (F2) → MBI-DP	0.104	0.025	0.180	0.010

Note: Bootstrap (10 000) 95% bias-corrected confidence intervals and Significance Levels.

$p < 0.001$. The results (Table 3, Figure 2) suggest that stress affects depersonalization both directly ($\beta = 0.135$; $p < 0.001$; 95%CI = 0.056, 0.212) and indirectly ($\beta = 0.179$; $p < 0.001$; 95%CI = 0.131, 0.232). The relationship between stress and depersonalization was partially mediated through one factor of the JSS: satisfaction with nature of work as well as both factors of self-care. The other factors of job satisfaction were not significant mediators in view of the 95% bias-corrected confidence interval based on 100.000 bootstrap samples. All direct and indirect effects are detailed in Table 3.

The indirect effect of stress on depersonalization is through decreased satisfaction with the nature of work and decreased psychological self-care. The satisfaction with the nature of work and performing psychological self-care are potential preventive factors in the development of depersonalization in times of high stress. On the other hand, professional self-care was negatively related to stress but positively related to depersonalization. Such results may suggest that with increased stress, performing professional self-care could potentially contribute towards depersonalization ($\beta = 0.104$; 95%CI = 0.025, 0.180; $p = 0.010$; Table 3, Figure 2)



* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Figure 2

Standardized effects in the Multiple mediation model predicting MBI – depersonalization. Only significant mediators are described. The model reveals the non-standardized effects.

3.3. Mediation model linking perceived stress and personal accomplishment

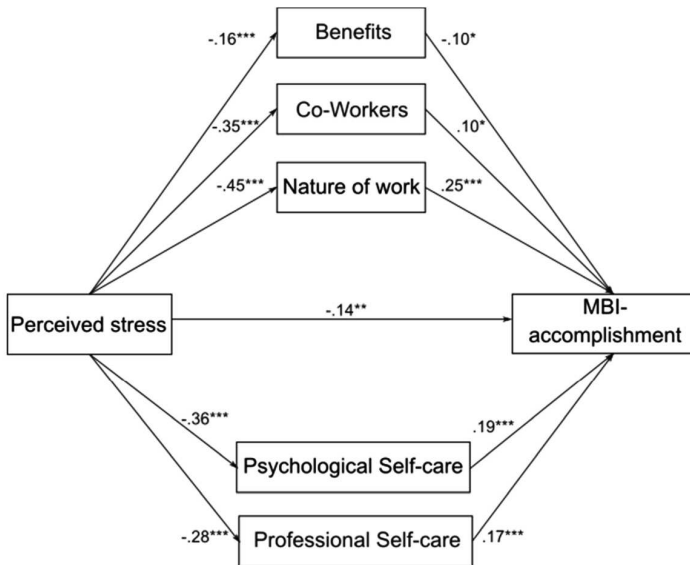
The results from the model indicate that stress predicts 13.4% of the variability of MBI-personal accomplishment. The total effect of the parallel multiple mediation analysis was significant $R^2 = 0.13$, $F(10.696) = 89.72$, $p < 0.001$. The direct effect of stress on personal accomplishment was significant and negative ($\beta = -0.135$; $p < 0.001$, CI = $-0.212, -0.056$). Thus, when perceived stress increases, an individual’s personal

Table 4
Standardized estimates of direct and total indirect effect of stress in the Model
of Perceived stress and MBI – personal accomplishment (N=698)

<i>Effect</i>	<i>Standardized effects</i>	<i>95 % bias corrected CI for Bootstrapped Standard regression Weights</i>		<i>Bootstrap p</i>
<i>Total effect</i>	-0.374	-0.443	-0.297	< 0.001
<i>Indirect effect</i>				
Stress → MBI-PA	-0.239	-0.296	-0.184	0.001
<i>Direct effects</i>				
Stress → MBI-PA	-0.136	-0.213	-0.056	0.001
PSS → Pay	-0.141	-0.213	-0.068	< 0.001
PSS → Benefits	-0.163	-0.237	-0.088	< 0.001
PSS → Rewards	-0.146	-0.222	-0.071	< 0.001
PSS → Supervision	-0.212	-0.287	-0.135	< 0.001
PSS → co-workers	-0.346	-0.413	-0.276	< 0.001
PSS → communication	-0.394	-0.463	-0.321	< 0.001
PSS → nature of work	-0.447	-0.504	-0.390	< 0.001
PSS → operating procedures	-0.219	-0.301	-0.136	< 0.001
PSS → psychological SC (F1)	-0.355	-0.415	-0.290	< 0.001
PSS → professional SC (F2)	-0.280	-0.349	-0.207	< 0.001
Pay → MBI-PA	0.044	-0.076	0.158	0.459
Benefits → MBI-PA	-0.098	-0.193	-0.001	0.047
Rewards → MBI-PA	-0.017	-0.121	0.089	0.784
Supervision → MBI-PA	0.027	-0.046	0.099	0.469
co-workers → MBI-PA	0.102	0.017	0.188	0.020
Communication → MBI-PA	-0.013	-0.109	0.088	0.800
nature of work → MBI-PA	0.252	0.159	0.341	< 0.001
operating procedures → MBI-PA	-0.065	-0.141	0.012	0.101
psychological SC (F1) → MBI-PA	0.190	0.101	0.275	< 0.001
professional self-care (F2) → MBI-PA	0.174	0.084	0.265	< 0.001

Note: Bootstrap (10 000) 95% bias-corrected confidence intervals and Significance Levels. Confidence interval is significant when 0 is not included.

accomplishment decreases. The indirect effect of stress on personal accomplishment was also significant ($\beta = -0.239$; $p < 0.001$, $CI = -0.212, -0.056$). The relationship between stress and MBI-personal accomplishment was partially mediated through the JSS factor of one’s satisfaction with co-workers, nature of work and benefits, as well as psychological and professional self-care (Table 4, Figure 3). The direct effects, as shown in Table 4, reveal that when perceived stress increases, an individual’s personal accomplishment decreases through the decrease of satisfaction with their co-workers, satisfaction with the nature of work, and the decline in both personal (F1) and professional self-care (F2). However, the effect of job benefits is different. Job benefits are negatively linked to stress ($\beta = -0.163$; 95% $CI = -0.237, -0.088$; $p < 0.001$) as well as being negatively related to personal accomplishment ($\beta = -0.098$; 95% $CI = -0.193, -0.001$; $p = 0.047$). The indirect effect of stress on personal accomplishment through satisfaction with job benefits (non-standardized) is significant and positive ($B = 0.03$, $SE = 0.01$, 95% $CI = 0.002; 0.06$). This result could indicate that with increasing stress, multiple job fringe benefits may contribute towards the decline of personal accomplishment. When stress levels rise, various fringe benefits offered by an organization could function as a hindrance to one’s personal accomplishment (MBI-PA). However, this effect may be specific for the sample of helping professionals in social services and will be discussed further.



* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Figure 3
Standardized effects in the Multiple mediation model predicting MBI – personal accomplishment. Only significant mediators are defined.

4. Discussion

The research into stress and burnout, as broad and diverse as it is, requires the development and testing of models that further explore the stress-burnout relationship. While it may not be possible to completely reduce stress in helping occupations, it may be possible to support self-care and areas of job satisfaction that prevent the development of emotional exhaustion, depersonalization, or support personal accomplishment in times of stress. The three described models explain which aspects of job satisfaction and self-care may mediate the effect of stress on particular aspects of burnout.

Stress, as a predictor in the development of emotional exhaustion, was solely mediated by the three factors of job satisfaction – satisfaction with pay, the nature of work and operating conditions. The work conditions in social services are characterized by low salaries and excessive administrative demands combined with a large number of clients and lack of time (LOVAŠOVÁ 2014; BALLY & ŠIŇANSKÁ 2014). The current study has supported these results – satisfaction with pay and satisfaction with operating conditions in the institution (administrative work, policies, and procedures) may in fact be protective factors in the development of emotional exhaustion. The nature of work was the strongest mediator between stress and emotional exhaustion. Satisfaction with the nature of work is related to perceived meaningfulness, pride or joy from job tasks. This corresponds to the findings from other studies (SHANAFELT 2009; ZAMMUNER et al. 2003) that have confirmed that people are able and willing to work under demanding conditions and high levels of stress if they feel that their work is meaningful and satisfying. The present results show that perceived meaningfulness and pleasure from one's work activities do not only decrease the risk of developing emotional exhaustion, but also decrease depersonalization and increase personal accomplishment in times of stress.

The relationship between stress and depersonalization was mediated by the nature of work as well as by both factors of self-care: psychological and professional. In times of increasing stress, those working in professional helping positions could decrease depersonalization by performing psychological self-care activities in the form of positive thinking, control of emotions or maintaining good relationships. On the other hand, in times of increasing stress levels, professional self-care (educational events, courses or congresses as forms of self-development, and self-education) may be perceived as too demanding and may contribute towards depersonalization.

The relationship between stress and personal accomplishment was significantly mediated by the factors of job satisfaction (fringe benefits, co-workers, nature of work) as well as the two factors of self-care: psychological and professional. Satisfaction with co-workers and the nature of work as well as performing psychological and professional self-care supports personal accomplishment in times of stress. However, the fringe benefits negatively relate to personal accomplishment with increasing perceived stress. The job benefits could potentially decrease feelings of personal accomplishment in times of high stress. One of the potential explanations

of this phenomenon could be that the fringe benefits in social service professions, as well as professional self-care, involve various educational and self-developmental events, courses or congresses that often require traveling and are time consuming. In addition, these job benefits often occur beyond working hours, during weekends and in some cases even during holidays. Although multiple studies have revealed that self-development in various forms could be beneficial for stress reduction, there may be cases when such job benefits are perceived as a hindrance – especially during times of an increase in perceived stress. In Slovakia, there are regular training sessions and professional development courses that have been mandatory for every professional helper since 2008. However, in practice, not all employers in helping professions offer the same quality of education for their employees and the sessions are often performed inside the organization with all co-workers. This may prevent employees from revealing certain problems which can further develop feelings of cynicism and alienation. Job benefits and professional self-care may be valuable in preventing stress, although in times of already increased stress, or when educational events are not performed well, it may contribute towards cynicism or reduced personal accomplishment. The results from this study support the findings of other studies (NIELSEN et al. 2006; AUST et al. 2010). These studies highlight the importance of screening for specific needs of individuals working for the organization as well as customizing and enhancing programs of intervention. The authors suggest that unfulfilled expectations about the usefulness of an intervention (or any educational or self-developmental event) may play a role in even worsening symptoms. The effect could be even more prominent in helping professionals who are constantly urged to self-develop and educate themselves, as suggested by the ethical code of conduct (American Counseling Association 2014). Such self-developmental and educational activities are time consuming. Scientists, as well as lawmakers in Slovakia, nowadays turn their interest to the protection of employees from dangers of changes in working environment (DOLOBÁČ & SEILEROVÁ 2018; SEILEROVÁ 2019), such as shifting working time and its relationship with stress. However, legislative authorities and internal policies have not yet developed mechanisms for protecting employees from institutional benefits happening beyond working hours. The results of this study suggest that it could be important to map the widely trending intervention and prevention courses, analyze the results, and identify possible clusters of individuals that may not benefit from such interventions. In addition, the results of this study may contribute to plausible explanations as to why stress-reducing interventions often have doubtful results or weak effect sizes of positive outcomes.

One of the limitations of this study could be the relatively simplified view of burnout as predicted by stress and only mediated by some self-care activities and areas of job satisfaction. This mechanism is most probably much more complex and not as straightforward and unidirectional as has been assumed. Moreover, from the two-factor theory of stress, it is known that not all stress contributes towards negative outcomes. Stress could also lead to personal growth and increased performance (CAVANAUGH et al. 2000; PODSAKOFF et al. 2005). This was partially supported by the

results of this study in the model of stress which predicted personal accomplishment, in which one of the indirect effects (through reducing job benefits) revealed a positive prediction of personal accomplishment. It can be hypothesized that when there are not too many time-consuming hindrances, stress could potentially lead towards personal accomplishment. However, it has to be noted that the study was cross-sectional and any causal relationships would have to be tested by a study with an experimental design. In future research, it will be possible to add also more specific demographical, socio-economical, and job specification variables into the analysis.

5. Practical application

The prolonged impact of the negative effects of burnout can threaten the physical and mental health of helping professionals. This study was conducted with the aim of exploring the role of psychological and professional self-care activities and job satisfaction variables as possible preventive mediators between stress and burnout.

The results indicate that organizations should support satisfaction with the nature of work as it could buffer the development of all three areas of burnout – emotional exhaustion, depersonalization and personal accomplishment. The nature of work in all the studied occupations is caring for others, which may not only be perceived as meaningful, but also as engaging and may prevent burnout from developing. In addition, burnout could be prevented by improving working conditions – by increasing salaries or decreasing the administrative workload and improving co-worker relationships. However, some of these issues may need to be negotiated at the level of government policy.

Psychological self-care, in the form of maintaining both a good atmosphere and good relationships at work, improving positive thinking, and enhancing emotional control, was significant in preventing emotional exhaustion and depersonalization and increasing personal accomplishment. Professional self-care, in the form of pursuing education and self-development, can prevent the development of depersonalization and support personal accomplishment. Specific self-care activities are in many forms very similar to coping strategies. However, coping is an individual's response solely to a stressor (FOLKMAN 2009), and self-care may or may not necessarily be conditioned by stress (GODFREY et al. 2010).

These promising results for the institutions may be achieved by offering effective prevention programs aimed at individuals before they have already perceived overly high levels of stress. The study has revealed that institutions and employees should respect the specific needs of professional helpers, the variability of their personal resources or family situations in order not to further increase their current levels of perceived stress. Various educational events and self-development benefits should be offered, rather than imposed on helping professionals, as they may potentially worsen some aspects of burnout in cases of already high levels of stress.

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FEATURES OF INTELLECTUAL FUNCTIONS INHIBITION AMONG UKRAINIAN BOXERS

A Sociocultural Study

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The effects of boxing's extreme aggressive conditions in training and competitive activity in sportsmen's mental working capacity still remains under-explored. While the neurophysiological effects caused by micro traumas to the brain have been extensively studied, less attention has been paid to the psychological consequences. This article reports on our study of the features of mental operations efficiency in Ukrainian boxers. The study involved athletes ($n = 168$, gender: men, average age: 25.5 ± 6.2 years), who were engaged in boxing and kickboxing in the Ukraine's eastern region. A 'Classification' method was used: a set of 70 cards with the images of various objects, plants, and living beings was given with instructions to arrange the items into groups in such a way that the objects in each concrete group possess common properties. Athletes were divided into groups, depending on the level of their sport qualification. Adopting the Vygotskian perspective, this study shows correlations between the productivity of boxers' thinking processes and the level of their sport skills: highly qualified sportsmen have many more well-marked thinking process defects than the sportsmen of the 2nd and 3rd categories. We observed a decrease in the generalization level, reduction in speed, deterioration of neurodynamic characteristics and criticality processes nearly in all participants. Exhaustibility and decrease in mental working capacity, impulsiveness of thinking, and its unproductive transformation were marked more often among the highly skilled boxers. A discussion on the cultural redefinition of this sport and on the necessary rehabilitative treatments is then presented.

Keywords: Vygotskian perspective, aggressive sport, boxing, intellectual functions impairments, mental exhaustibility, psychological deterioration

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1. Introduction

The Vygotskian perspective (VYGOTSKY 1987; 1994) lays out the basic principles on the productivity of higher human mental functions, and puts forward the idea of regarding social mediation of a person's mental activity, the interrelation of different personal values both with each other and with the social, ethical, biopsychological factors of a person's vital activity, and thus allows us to predict his self-development. This interdependency does not only stimulate a person's self-realization and approach to his own *acme*, but also allows the enhancement of his creative life-orientation, gradually transforming into a dynamically growing deterministic process, the outcome of which is completely predetermined by personal fundamentals, the importance of life variables, and the algorithm of their interaction (IVANCHENKO 2017). Sport is a cultural space where the motivational-axiological factor is shaped by social instances, orienting goals and needs of people, as well as their self-development on the basis of moral values (TSEKHMISTER & LYSENKO 2018). It means that sports are practiced differently in different countries according to their history and the processes of education resulting from the socio-political condition. In Ukraine, young people have always been involved in sports activities (the success of Ukrainian boxers in recent years is indisputable and recognized all over the world). But the realities of life make their own adjustments to the minds of people, first of all, in the case of youths that now, by the way, are even more active in different kinds of sports. Ukrainian youth are experiencing great stress associated with various life and educational problems (decline in living standards, difficulties in finding employment for graduates, a sharp decrease in financial family income, etc.) that lead to an impaired life perception; considering all these, they do not use socioculturally acceptable and effective health stress protection means in due measure and in as required (IVANCHENKO et al. 2018). In this cultural context, sports require the search for new tools and methods of the athletes' psychological training, especially those that involve aggressive activities.

With regard to boxing, similar to other combat sports, literature has already emphasized the potentiality for acute neurologic concussions, brain injuries, and neuropsychological consequences as serious symptomatics after various injuries (HEILBRONNER et al. 2009; ORRISON et al. 2009; ZAZRYN et al. 2009). Amateur boxers perform better than professional boxers at psychometric tests, evidencing fewer cases of chronic traumatic brain injury and neuropsychological deterioration, with a better preservation of some neuropsychological skills (LOOSEMORE et al. 2008; PORTER 2003; ZAZRYN 2006).

Given the evident violence in boxing, researchers have proposed a study question on how boxers' brain damage and its long-term consequences affect the sportsman's health during his life (CRITCHLEY 1937; CRITCHLEY 1949; HARRISON & MARTLAND 1928). The first scientific studies had already confirmed various types of injuries, traumata, brain damages – ill effects on the health of boxers with special emphasis on neuropsychiatric deterioration, so the term 'chronic traumatic encephalopathy (CTE)' was introduced (CORSELLIS et al. 1973; CRITCHLEY 1957; MCCOWN 1959). Since then,

after having ascertained that the boxers receive a lot of repetitive head trauma, whose effects need to be studied in order to stabilize the boxers' brain functions (BERNICK & BANRS 2013; JORDAN 2009; UNTERHARNSCHEIDT & TAYLOR-UNTERHARNSCHEIDT 2003), it was confirmed that the CTE diseases led to the accumulation of different harmful aggregated proteins, appearance of abnormalities inside the nervous system, and diffused axonal brain injury (MCKEE et al. 2013; ZHANG et al. 2006; ZHANG et al. 2003). Furthermore, it has been found that the chronic traumatic brain injury in boxers might gradually become a progressive disease that manifests after the active boxing career (BAILEY et al. 2013; JORDAN & CAMPBELL 1988; LAMPERT & HARDMAN 1984), and it has also been confirmed that severe traumatic brain injury in boxers led to a grave decline in health, with cognitive deficits (that is, poorer performance in spatial, logic, visual, mathematics testing and impaired verbal fluency), mental deterioration (that has subsequently been linked to increased tau proteins in the brain), dementia syndrome due to the punch drunkenness effect, and a variety of neurodegenerative diseases, such as Parkinson's and Alzheimer's diseases (BUTLER 1994; CORSELLIS 1989; MENDEZ 1995). Further studies described the syndrome of 'chronic traumatic encephalopathy' (SOLOMON 2018; SOLOMON & ZUCKERMAN 2015). Indeed, the sport-medical surveys confirm that the number of serious injuries, suicides, depressions, and cognitive deficits among aggressive sports athletes is mind-boggling. In particular, a high percentage of serious injuries were recorded for boxing and a more pronounced risk of chronic brain pathologies (that is, Alzheimer disease and dementia) exists compared to other contact and non-contact sports (MCCRORY 2007; PORTER 2003; NESELIUS et al. 2012).

At present, the study of adaptive processes and coordinating methods in the individual's activity is of particular interest to scientists, since the correct adaptation allows disclosing and putting into action the natural resources of the person, inherent in him from birth – his natural potential. Recently, studies have evidenced the availability of adaptive resources, based on preparatory complex-coordination exercises for boxers during their training prebout period (KIPRICH & BERINCHIK 2015; PODRIGALO et al. 2017; QIANG 2015).

Unfortunately, there is a serious dearth of research that takes into account the intellectual functions of boxers, features of their cognitive processes and cognitive-logical impairments. Our previous research analyses showed that 99% of the boxers exhibit different impairments of the voluntary attention – which manifest in the following: a narrowing of attention capacity, concentration process disorders, and a redistribution of the attention functions and attention switching (MALYK 2017; MALYK 2018). Other studies showed that their performance is characterized by the dysfunction of the modal-nonspecific type, in the form of selectivity defects, an increased negative effect of the interference, as well as a narrow and decreased memorization strength (ANTIPOVA & KHARITONOVA 2014; GANT & MALYK 2015; MALYK 2016). Also, their voluntary motor activities and their perceptual operations are spoiled, and disorders of spatial, dynamic and posed praxis (according to the perceptual pattern) have been noted (GANT 2014; GAVETT et al. 2011).

Nowadays, in the science of sport psychology, no systematized ideas exist concerning boxers' intellectual deficit at different stages of their sport career. The problem of influencing the extreme conditions of training-competitive activity in the athletes' mental working capacity (during boxing) remains virtually unexplored. In order to consider how this complex problem should be managed, there is a need to carry out specific psychodiagnostic studies aimed at analyzing the mechanisms of the boxers' mental working capacity.

2. The research hypothesis

The fundamental aim of this research was associated with studying the effects of boxing on the productivity in the mental sphere of athletes (namely, the productivity of their mental operations), in order to see what type of cognitive dysfunctions could be detected and provide the guarantee of the athletes' health safety. In this paper, the main attention focuses for the first time on impairments of mental functions and changes in cognitive performance in boxers of various qualifications, studied by methods of psychological diagnostics in order to identify the precise psychological and social indicators involving the unproductive transformation of thinking in boxers. From the literature, the hypothetical assumption was that the mental operations' productivity of the boxers practicing the sport is characterized by a specific dynamic and depends on the level of the boxers' athletic skill. The hypothesis was that the productivity features of boxers' thinking operations change depending on the different level of sport qualification: the higher the qualification level, the lower the cognitive performance.

3. Participants

The study involved athletes ($n = 168$, gender: men, average age: 25.5 ± 6.2 years), who were engaged in boxing and kickboxing in Ukraine's eastern region: 70 athletes of the 2nd and 3rd categories, 58 athletes of the 1st category and 40 Candidates for the Master of Sports (CMS). The participants' socio-demographic data of theirs are given in *Table 1*; herewith, there were no Masters of Sports aged 19 to 21 years old in our study. All athletes were informed about the goals and objectives of this study, and they all gave a written permission to participate in it. The inclusion criteria were: men involved in boxing; active athletes; aged from 19 to 32 years; that is, the category of 'adults' in this sport, which according to the age classification of the World Health Organization, constitutes a young age. This age category of sportsmen does not imply the presence of age-related declines in cognitive functions; therefore, this sample is homogeneous by age. Any diseases of the psycho-neurological spectrum constituted the study's exclusion criteria. At this research stage, it was not necessary to use the traditionally employed ANOVA or ANCOVA methods for a statistical analysis of the data obtained: this study has a pathopsychological focus and according to the objective of the research, our sample is completely sufficient. Besides, this

work is a preliminary search study that does not aim for global theoretical constructions and detailed statistical generalizations. For a similar purpose, we used χ^2 to compare the empirical distribution with the theoretical (uniform) one. Due to the problem of different sample sizes, we did not analyze absolute values, but the percentages that were rounded, were rounded to the nearest whole number. To calculate the effect size (ES), we used the Cramer V test.

Table 1
 Characteristics of socio-demographic data of study participants

<i>Specifications</i>	<i>Boxers (n = 168)</i>					
	<i>2nd-3rd categories (n = 70)</i>		<i>1st category, CMS (n = 58)</i>		<i>MS (n = 40)</i>	
	<i>Absolute value</i>	<i>%</i>	<i>Absolute value</i>	<i>%</i>	<i>Absolute value</i>	<i>%</i>
<i>Age</i>						
<i>From 19 to 21 years old</i>	20	28.57	12	20.69	0	0
<i>From 22 to 25 years old</i>	31	44.29	26	44.83	25	62.5
<i>From 26 to 32 years old</i>	19	27.24	20	34.48	15	37.5
<i>Family status</i>						
<i>Not married</i>	9	12.86	7	12.07	0	0
<i>Married</i>	53	75.71	46	79.31	38	95
<i>Divorced</i>	8	11.43	5	8.62	2	5

5. Method

For studying the basic thinking processes (that is, for estimating the generalization processes, abstraction processes, and the sequence of judgments), the ‘Classification’ method – first developed by K. Goldstein in 1920 and later modified by L.S. Vygotsky and B.V. Zeigarnik – was used (SHUVALOV 2013). The procedure for carrying out the experiment was a standard one. First, we offered to the sportsmen-respondents a set of 70 cards with the images of various objects, plants, and living beings. Thereafter, they were given certain instructions to arrange the items into groups in such a way that the objects in each concrete group would have common properties (that is, to distribute them into groups of ‘clothes’, ‘furniture’, ‘animals’, ‘measuring instrument’, ‘people’). At each subsequent stage, the respondents had to enlarge these groups; that is combine, integrate, and unite the objects within the groups they had already created. We also estimated the number of attempts/efforts (that were required for the final classification of objects) and the classification principles needed. When

analyzing the research results, we divided the athletes into groups, depending on their sport qualification level. Within the framework of our research, we analyzed such mental activity features as: 1) weak criticality regarding their own actions and decisions, 2) low level of generalizing operations, 3) propensity to a concrete or situational thinking, 4) diversity of intellection and its elements, 5) reliance on unimportant/inessential attributes, 6) 'slipping' on the bright, impressive, unusual signs and attributes, 7) tendency to excessive detailing, 8) inertness of thinking, 9) irrationality judgments while laying out the items and explaining the reasons for uniting objects in one group, 10) features when choosing a generalizing word, 11) contrast between the ability to assemble a group and inability to designate it. While using this investigation method, we took particular attention in giving the athletes an exact explanation of the method, as well as to the corrections they made when the psychologist prompted them to.

5.1. Statistical analysis

For each of the indicators studied, the mean values and the standard deviation were calculated. The estimation of the authenticity of differences in the average values of indicators was carried out in accordance with the t-test of Student at 1% and 5% significance levels. Data processing occurred on a personal computer IBM-PC / XT, using the software package Statistica for Windows 4.3B, StatSoft Inc.

6. Results

The observation of the boxers' working style during their test and the application of the conversation method have shown that 30.95% of respondents had adequate motivation regarding the research (by adequate motivation for research, it is customary to understand a sufficient level of maximum psychological readiness, orientation, and willingness of respondents to participate in the study). Moreover, they considered it important and estimated it to be an intellectual examination, showing an informative-cognitive interest in the assignments; they easily started work with the tasks, did not pay much attention to errors or unsuccessful attempts, and characterized their mistakes with a sense of humor. The rest of the surveyed boxers (69.05%) had an egotropic motivation towards the research: the interest that such athletes had shown in their work with a psychologist was determined by self-centered fixations and self-affirmation motives (so called 'business interest' as to the methods, the aspiration to pay attention to oneself and to merit praise, sympathy, or empathy). Therefore, the psychodiagnostic examination of the boxers with egotropic motivation required some additional efforts, both from the psychologist and from the athletes themselves.

According to the results received from the 'Classification' method, the exhaustibility of the mental working capacity and a steady decrease of the latter was observed in the results of 88.69% of athletes (*Table 2*).

While classifying the subjects at the first stages of testing, the sportsmen-respondents achieved a sufficiently high level of generalization, highlighting the subjects correctly by the common characteristics. Furthermore, at the groups' enlargement stage, the boxers 'were straying' on the path of random combinations; they were also trying to finish the task sooner or were losing total interest in the quality of their work.

For the impairment of the operational side of thinking (in the form of a reduction as to the generalization level), we recorded the results of 58.33% of boxers. While performing the task, in the judgments of this athletes' group, the direct image of the objects/phenomena dominated, the establishment of strictly specific connections between the objects replaced the usage of common characteristics. Moreover, having all these available attributes of objects, the boxers still found it difficult to select those of them that most fully revealed and determined the subject; they created a large number of small groups on the basis, by the way, of an extremely detailed substantive connection between them.

Table 2
 Characteristics of productivity of the boxers' mental functions

<i>Impairments of intellectual functions</i>	<i>Boxers (n = 168)</i>	
	<i>Absolute value</i>	<i>%</i>
<i>Criticality violation</i>	14	8.33
<i>Reducing the generalization level</i>	98	58.33
<i>Exhaustibility</i>	149	88.69
<i>Impulsiveness</i>	119	70.83
<i>Slowing down the speed characteristics</i>	35	20.83

For the impairment of thinking dynamics in the form of a debilitation of the speed characteristics of intellection processes, we noted 20.83% of the respondents in the result, and 70.83% of athletes were noted in the result in the form of impulsiveness. They also changed the methods of fulfilling the tasks. While performing the classification of items, the athletes, in some cases, achieved a sufficiently high level of generalization, but often created incorrect and unrequited combinations, replacing the logical connections by a set of random combinations, or (combining the items correctly according to their common characteristic) immediately began to form a similar group by its meaning. In this latter case, the impairments of criticality were observed only in the results of 8.33% of the boxers.

The study of the boxers' mental operations' efficiency, depending on the level of their sport skills, was the next stage of our research.

The study showed that 88.57% of the boxers of the 2nd and 3rd categories, 88.76% of the athletes of the 1st category and CMS, and 97.50% of the MS boxers, had an evident exhaustibility of the mental working capacity and a constant decrease of the latter. Exhaustibility is a progressive weakening of the intensity of attention in the process of working with a sufficiently high level of work involvement, but the depth, absorption, concentration suffer and the productivity drops (ZEIGARNIK 1962).

Exhaustibility is observed in organic diseases and asthenic conditions. . . as exhaustion increases, the responses (of respondents) become less productive.

(Our trans., STOJMENOV et al. 2003, 391)

Mental working capacity is defined as the ability of a person to carry out mental activity. It highly depends on mental health. And under normal conditions, mental working capacity is often a fluctuating quantity. It largely depends on the emotional state, on rest or fatigue, on the attitude to the work being done, and on many other factors.¹

(Our trans., STOJMENOV et al. 2003, 752)

Dysfunctions of the operating side of intellection (in the form of reducing the generalization level) were observed in the indicators of 34.28% athletes of the 2nd and 3rd categories, in 74.13% of the boxers of the 1st category and CMS, as well as in 77.50% of the MS boxers. Impairment of thinking dynamics (in the form of impulsivity) was noted in 10.00% of the athletes of the 2nd and 3rd categories, in 17.24% of the boxers of the 1st category and CMS, as well as in 80.00% of the MS boxers. Impairment of thinking dynamics (in the form a debilitation of the intellection processes' speed characteristics) was diagnosed in 17.14% of the athletes of the 2nd and 3rd categories, in 25.86% of the 1st category boxers and CMS, as well as in 20.00% of the MS boxers. The criticality process deterioration took place in 8.57% of the athletes of the 2nd and 3rd categories, in 8.62% of the 1st category boxers and CMS, as well as in 7.50% of the MS boxers.

As exhibited in the results of our study (*Table 3*), the dominant dysfunctions among the impairments of boxers' thinking processes are a depletion of the mental working capacity and a continuous decrease of the latter, defects in the intellection dynamics (impulsiveness), and defects in the operational side of thinking (reducing the generalization level).

1 Original text: „Istoshhaemost' nabljudajetsja pri organicheskih zabojevanijah i astenicheskih sostojanijah. ... po mere uvelichenija utomlenija otvety [respondentov] stanovjatsja menee produktivnymi” (391).

„Psihicheskaja rabotosposobnost' opredeljaetsja kak sposobnost' lichnosti osushhestvljat' psihicheskiju dejatel'nost'. Ona sil'no zavisit ot psihicheskogo zdorov'ja. I v normal'nyh uslovijah psihicheskaja rabotosposobnost' chasto kolebljushhajasja velichina. Ona v znachitel'noj stepeni zavisit ot jemocional'nogo sostojanija, otydha ili ustalosti, otnoshenija k provodimoj rabote i mnogih drugih faktorov” (752).

Table 3
Productivity characteristics of boxers' intellectual functions in various sports qualifications (according to the results of the 'Classification' method)

<i>Impairments of intellectual functions</i>	<i>Boxers (n = 168)</i>						χ^2	<i>p</i>	<i>ES*</i>
	<i>2nd-3rd categories (n = 70)</i>		<i>1st category, CMS (n = 58)</i>		<i>MS (n = 40)</i>				
	<i>Absolute value</i>	<i>%</i>	<i>Absolute value</i>	<i>%</i>	<i>Absolute value</i>	<i>%</i>			
<i>Criticality violation</i>	6	8.57	5	8.62	3	7.50	0.077	0.962	0.054
<i>Reducing the generalization level</i>	24	34.28	43	74.13	31	77.50	19.097	0.000	0.320
<i>Exhaustibility</i>	62	88.57	48	82.76	39	97.50	1.267	0.531	0.069
<i>Impulsiveness</i>	7	10.00	10	17.24	32	80.00	83.346	0.000	0.883
<i>Slowing down the speed characteristics</i>	12	17.14	15	25.86	8	20.00	2.000	0.368	0.178

Note: *ES is the effect size

It should be noted that the exhaustibility of the mental working capacity and a constant decrease of the latter act as markers of the athlete's emerging cognitive deficit. In general, it takes place at the earliest period of boxing practice, wherein it is more often fixed on the results of highly qualified MS boxers. Impairments of the operational side of the intellection process (reducing the generalization level) prevailed in the indicators of highly qualified athletes compared to those sportsmen in a lower sport category. Mainly, the MS boxers' results pointed to the impairments of thinking dynamics (impulsivity). At the same time, a debilitation of intellection processes' speed characteristics and criticality defects (namely, the errors while controlling one's own actions and the correction of errors already made, or a complete incapacity/impossibility to correct them) had approximately the same distribution in all groups of boxers, regardless of their sport qualification level.

7. Discussion

The hypothesis of our research was confirmed. Depending on the level of the athletes' sport skills, a polymorphism of various defects and a certain (regular) dynamic characterizes the boxers' thinking process productivity. In order to analyze the dynamic characteristics of mental processes and to study the regularity of the boxers' growing cognitive deficit, we divided the sportsmen-respondents into three groups, depending on the level of their athletic skills. Highly qualified boxers (1st category, CMS and MS)

demonstrated a more serious shortage of mental working capacity than the boxers of the 2nd and 3rd categories. The MS boxers exhibited more evident disorders of the intellection processes than the boxers of the 1st category and the CMS boxers.

Asthenic syndrome is a health status that manifests in the form of increased fatigue, exhaustion, loss of ability to resist prolonged mental and physical stress. It ranks very high in the clinical picture of craniocerebral trauma (CCT) in all severity levels. Among the characteristics of the boxers' individual traits, it is possible to distinguish a set of common features that do not depend on the level of athletes' qualifications, but which are generic and overall for the sportsmen of all qualifications in this kind of sport, namely: mood instability, behavior impulsiveness, impairments in the areas of attention, memory and response speed (BELCARO et al. 2014; WILDE et al. 2016). The results of our study confirmed all this, demonstrating the reduction of their generalization level ability and their exhausted mental working capacity. We have shown that the majority of athletes-respondents had the impairments (that is, unproductive transformation) of the thinking dynamics in the form of impulsivity; namely: the boxers' impulsiveness manifested itself as an instability in the process of choosing the means/ways by which they fulfill their mental operations. In ordinary life, this characteristic is expressed by the tendency to act in three different ways: without clear conscious control, under the influence of external circumstances, or due to emotional anxiety. The aforementioned variations of boxers' behavior can be characterized and defined as a frontal syndrome; that is, a syndrome of the impaired function of programming, regulating, and controlling the mental activity. When the frontal syndrome is evidently manifest, the following behavioral and cognitive characteristics are retained, namely: the fulfillment of specific operations, the ability to perform mental acts, the storage and use of the available knowledge base; however, it becomes impossible to adequately apply one's knowledge base in accordance with a consciously stated intent.

According to our results, the impairments of intellection processes were more obvious and serious among highly qualified boxers: these showed a marked decrease in the productivity of mental operations and intellectual activity in general, as well as a criticality decline. The criticality deterioration (being a consequence of defeating the brain frontal lobes) can lead to the formation of such boxer behavior as an exaggeration or disparagement/belittling of real details and facts, jealousy, and a tendency to lie. In this regard, it should be noted that this dissimulation has been registered in the results of 42.86% of the boxers we surveyed: they demonstrated a conscious concealing of the symptoms for various personal physical/mental disorders and dysfunctions.

Furthermore, it should be clarified that during the testing-conversation with the boxers-respondents, they made no complaint about their own health problems; most of the sportsmen denied having not only the CCT, but even the suffering of minimal cognitive disorders. In addition, the athletes asserted that the people (they meet) often misunderstood their behavior.

We often noticed boxers' unusual behavior during our research. It consisted of the following: (a) the participants begin to fulfill the task only after additional

stimulating motivation; (b) they themselves behave aggressively during the test; (c) they seek some excuse for themselves and do not aim to achieve a better result at any unsuccessful attempt in the course of testing; (d) or after making mistakes, they often refuse to accomplish the task at all. It should be noted that while carrying out the psychodiagnostic examination of such 'problematic' boxers, additional efforts were required from both the psychologist and the athletes themselves.

In addition, our study made it possible to identify slight, nonspecific (pre-clinical) defects in the intellection processes of boxers; this fact is in agreement with such points of view that declare the psychopathological manifestations occurring as a result of CCT are often very subtle and peculiar (NESELIUS et al. 2012; FÖRSTL et al. 2010).

8. Conclusions

The results of our investigations reveal a fairly wide range of impairments and changes in the boxers' mental functions; namely: a reduction of the generalization level, a deterioration of speed characteristics, exhaustion of mental activity, as well as impairment of criticality, and impulsiveness. By analyzing the intellection disorders thus revealed, we can say that the degree of their severity was not the same in the different groups of athletes. The impairments of intellection processes and thinking functions of the highly qualified boxers (of the 1st category, CMS and MS) stood out as more evident and explicit than the same symptomatic manifestations of the athletes in the 2nd and 3rd categories. The thinking defectiveness of boxer-respondents (who were at the stage of achieving the best sport results) appeared even more severe: we have fixed on a marked decrease in the productivity of athletes' thinking operations and intellectual activity in general, as well as some great criticality violations. However, it should be noted in this case that in the early stages of sport activity, the boxers manifested a mild or moderate exhaustibility in mental working capacity, a slight decrease in generalization, and small disorders of intellection dynamics.

The results of our study showed that professional boxing impacts significantly on athletes' productivity of cognitive functions. Minimal cognitive dysfunctions (namely: reducing the level of generalization, a debilitation of speed characteristics, an exhaustion of mental activity, and a worsening of criticality, impulsiveness of mental operations) already occurred in the early years of boxing, which affected not only the sports career of the athletes, but other spheres of their activities as well.

The differences in the productivity of cognitive functions, identified as a result of the study, indicate a directly proportional relationship between sport qualifications and the intellectual effectiveness of boxers (the sample of participants by age was uniform). Our study's results clearly state the factual presence of intellectual impairments during a boxing career. The potential risks to the physical and mental health of athletes should be taken into account before this sport is chosen. Therefore, these results can be useful and interesting for parents of children when choosing a sport for them, for the athletes themselves, as well as for doctors.

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OPPORTUNITIES AND SPECIFICS UNDERLYING DAY CARE FOR OLDER ADULTS IN HUNGARY WITH CONSIDERATION OF ACTIVE AGEING

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In the past few decades, ageing has become a serious global issue. The concept of active aging and its incorporation into different type of social services (e.g. day care for elderly people) is one of the possible solutions. The main goal of this research was to evaluate the status of clients in Hungarian day care institutions. Another important goal is to explore which domains of the concept of active and independent ageing were already considered and applied in Hungarian day care service and where they should be strengthened. The questionnaire was based on the Active Ageing Index questionnaire (ZAIDI et al. 2013). 14% of the observed sample was 64 years old or younger, 38% was 65–74 years old, 36% was 75–84 years old, 12% was 85 years old or older. Most of the participants (74%) were women. More than half of the sample were widowed. One third of the sample received some kind of ICT (Information and Communication Technology) device. There was a strong connection between the frequency of ICT usage and education variables. Accessibility, which was also a facilitator of active and independent ageing, came up only in 25% of the sample. Mental well-being – as a new variable – was analyzed with principle component analysis from five former variables with the highest rate in the Central Hungarian region. Satisfying physical security was reported by only 56% of the sample, more often among men ($p = 0.03$). Reinforcing the preventive aspect of the service, propagating it amongst freshly retired people, and including not only widows, but other potential clients as well could be the key points of service development. To intensify the potential points in the service connected to active ageing (accessibility, volunteering in late-life, use of ICT devices etc.) could be a key factor in the improvement of day care services.

Keywords: demographic change, ageing, community based social services, active ageing, day care for elderly people

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1. Background of the topic

During the last couple of decades, ageing has become a global question. Statistics related to ageing are far from being unified. While the United Nations and the WHO (World Health Organization 2018) are currently issuing statistics about the population over 60, several EU countries, including Hungary, report age-related issues for people over 65 years of age (SPÉDER 2019). According to the United Nations (2017) 962 million people lived in the world aged 60 or over, which represented 13% of the global population. Based on the most relevant statistical data, the number of people aged 60 or above in a society is expected to rise from 12% to 22% around the globe (World Health Organization 2017). In the EU, where societies are typically considered as ageing ones, the proportion of people aged 65 or above will increase from 19.2% to 29.1% between 2016 and 2080 (Eurostat 2017). It is also remarkable that the oldest age group (80 or older) will grow from 5.4% to 12.7% during the same period. Eurostat estimates that in 2080, 63.8 million citizens aged 80 or older will be living in the European Union¹.

These changes will strongly affect the current economic, social, and health systems, and major transformations will be needed to achieve sustainability and improve the quality of care.

2. Active Ageing as a possible answer for changing demographic trends – definition and measurement

Countries that recognized societal aging as a social problem tried to find solutions individually for the increasingly intensive, multi-sectoral changes. They made efforts to deal with ageing as a multi-dimensional problem, which cannot be solved by simple actions and one-dimensional solutions, such as raising the retirement age. According to the WHO: ‘Active ageing is the process of optimizing opportunities for health, participation, and security in order to enhance the quality of life as people age’ (World Health Organization 2014, 12). This definition also shows the multidisciplinary approach of active ageing. Definitions, and even the notions used in the definitions are not unified, while the term ‘active ageing’ is the most widespread in Europe, ‘successful ageing’ is more commonly used in the United States (CONSTANÇA et al. 2012). Active ageing generated the appearance of new concepts, such as the ‘silver economy’ (KLIMCZUK 2016, ZSARNÓCZKY 2016). There have been slow changes occurring in the past two decades, where every key actor in social policy: citizens, governments, economic actors and also NGOs have been increasingly recognizing the importance of active ageing, considering it, and rethinking the development of the services (WALKER & MALTBY 2012). Integrating the active ageing concept into social policy and trying to find the parallel lines between the active ageing concept and the actual social services could be a good answer for the problem of ageing in modern

1 http://www.publicpolicyexchange.co.uk/media/events/flyers/IK08-PPE2_flyer.pdf.

societies. Besides pressure reduction, promoting active ageing through community-based social services could be efficient as a preventive approach postponing the need for long-term care.

Connected to the measurement of ageing, it is obvious, that traditional demographic indicators are not capable to calculate and demonstrate the acceleration of ageing and the economical, health, and social consequences of that process (VARGHA 2017). As active ageing became an accepted concept, the need to make it measurable gained traction. Active Ageing Index (AAI) (ZAIDI et al. 2013) is a complex indicator that shows a more accurate picture, and calculates with ageing as a process, although it has been criticized several times since its creation (DE SÃO JOSÉ et al. 2017, KARPINSKA & DYKSTRA 2015).

3. Empowering community-based social services, basic social services, and the importance of prevention

Considering active aging concepts seems like a logical choice to empower and support community-based social services (including basic social services for older adults from Hungarian Social Act 1993: *1993. évi III. törvény a szociális igazgatásról és szociális ellátásokról*). The basic idea behind empowering community-based social services is that older adults who are still living in their own homes receive social services from community-based social services. Consequently, they would only have to move from their usual environment when it is inevitable, for instance, if the need for high care arose (VAN EENOO et al. 2016).

Receiving community-based social services can be useful from various aspects. First of all, for older adults, adaptation to a new environment is a difficult task. Moving to an unknown location (such as nursing homes) is considered as a significant life event, which is difficult to tolerate by the elderly (JOHNSON et al. 2010; LEE et al. 2013). Furthermore, the quality of life can even change when the ‘new’ home makes efforts to make the social and physical environment resemble the previous one, or the so-called ‘home’ (FALK et al. 2013).

Research has shown that depression, dementia, and anxiety disorders are more common among clients appearing in long-term care (especially in institutionalized long-term care), and these symptoms frequently lead to other illnesses (SEITZ et al. 2010). It also confirms, that ageing in place (like home care or day care service) is probably a good solution for elderly care. It is also essential to mention that long-term care is more expensive (CHAPPEL et al. 2004).

As a result of the economic crisis, European social care systems began to empower community-based social services. Some sort of ‘shift’ has been experienced in welfare services. This included the partial privatization of certain benefits, some kind of vertical subordination, where the responsibility of the care has moved between governmental actors, e.g., tasks have been transferred from the central to municipal governments or directly to the caregivers in informal care. In order to

control the impact of these changes, a group called COST Action IS1 102² has been formed. The aim of this group is to make impact assessments as a result of the transition system (DEUSDAD et al. 2016). Further to its controlling function, this can also serve as an independent feedback system for service providers.

There are several good practices to promote active ageing according to community based services and the literature (JAWOR-JONIEWICZ et al. 2013; FRERICHS et al. 2012). In many cases, they have been developed and used in the framework of a temporary project, unfortunately, a significant part of them was not tested or was stopped shortly after the project was closed. Many excellent ideas have been implemented in the form of a project with the support of the Active Assisted Living Programme, co-financed by the European Commission. One example is the ACCESS project (2013)³, which makes elderly home care more flexible with the help of ICT. ALICE project (2010)⁴ also uses ICT to keep social connections alive for older adults who remained in their homes, and who are capable of maintaining their quality of life with the help of the project. ActGo-Gate (2014)⁵ connects older adults in need of voluntary help and host organizations or older adults who are willing to volunteer through a direct web interface.

The new ideas are increasingly considering not only the elderly, but also the other generations surrounding them. a good example of this is the CAS project (CAS – Centrum Aktywności Seniora alternatywą na samotność) introduced in a disadvantaged region of Poland. In addition to the so-called ‘usual’ activities and connections, the project put a strong emphasis on addressing the younger generations and getting them involved in programs, e.g. by creating a TV programme about the elderly generation, aimed directly at the younger generation. As a result of the joint programs, the attitudes towards the elderly people and ageing have changed, and the elderly have also been involved in the everyday life of the community (RYNKOWSKA & BŁASZCZUK 2014).

Overall, it can provide positive results if the clients can stay in their own homes until they can manage their daily activities independently or with occasional support. If it will be possible with the help and implementation of active ageing into social services, then providers will have to build in new approaches and good practices into their operation. Local or international good practices, new programs, and technical solutions can help to this age group to live independently for as long as possible. Implementation of good practices and new solutions are in the interest of all participants. Active ageing and social care would be more effective if policy makers paid more attention to prevention and started to prepare younger generations to ageing by changing their attitude.

2 Retrieved 1 May 2020 http://www.cost.eu/COST_Actions/isch/IS1102.

3 Retrieved 25 Jan 2019 from <http://www.aal-europe.eu/projects/access/>.

4 Retrieved 1 March 2019 from <http://www.aal-europe.eu/projects/alice/>.

5 Retrieved 1 March 2019 from: <http://www.aal-europe.eu/projects/acto-gate/>.

4. Research, results

4.1. Aim of the research

The main goal of the research was assessing the situation of day care for older adults (also known as elderly clubs) and care recipients in Hungary. The research focused on the strengths and weaknesses of day care to create an accurate picture of the analyzed elderly group and observe its characteristics involving a wide spectrum of variables partly connected to active ageing. Another area to be explored was the proportion of active ageing domains in the service recipients' life? It is also important to analyze the points where it is possible to improve day care for elderly people. It is essential to know what specific fields need to improve to keep on participating in society and maintain social connections for the elderly, and what fields need to be developed in the future to support active and independent ageing (VAJDA 2017).

4.2. Methodology, measurement tool

The Active Ageing Index (AAI) questionnaire (ZAIDI et al. 2013) gives the basis for the measurement tool used in this research. The AAI questionnaire was compiled using questionnaires of previous European Union surveys, including questions from the European Social Survey (2008; 2010; 2012), the European Labour Force Survey (2008–2012), the European Quality Of Life Survey (2011/2012), the European Statistics of Income and Living Conditions (2008–2012), and the Eurostat ICT Survey (2008–2012). The European Health and Life Expectancy Information System (2008–2012) was also used to calculate the final index numbers for countries. Besides the strong methodological background and the effective comparison numbers between countries, there are different types of weaknesses of the index, which will be discussed later. Selecting the AAI questions, the 4 domains that involve the indicators/questions were crucial. These 4 domains were the following: employment; social participation; independent healthy and secure living; capacity to maintain an environment for active ageing. With this determination of active ageing, a hardly defined concept became more understandable and tangible. After its development, the methodology of AAI has been used by several researches with varying results (FANTA 2018; BARYSHEVA et al. 2018; GUNTUPALLI & CHAKRABORTY 2018). There are critical points and arguments against the complete adaptation of AAI:

- Comparing smaller territorial units, e.g. regions, counties, there is a difficulty of using some variables due to the lack of necessary territorial statistical data (PEREK-BIALAS & MYSINSKA 2013).
- The validity of using the same weight for every country was also questioned, knowing they have completely different historical, economic, and service systems. The aggregation of the results and statistics of completely different surveys for index calculation has raised further questions about the reliability of the results (ATKINSON & MARLIER 2012).

- The importance of spirituality and religiosity has also been highlighted by earlier AAI researches (AMADO et al. 2016). These questions were not part of the original AAI questionnaire.
- Observation of accessibility was extremely important, as this option makes it easier for an older adult to stay in their own home. This contributes significantly to active, independent ageing.

A good example for a different point of methodology was a diversity research made in a Spanish region (Galicia). They obtained data for the 4 domains from interviews, not from statistical datasets or questionnaires like the AAI did. They called it 'individual adaptation to active ageing index'. Based on the comparison of the active ageing index and the individual adaptation to active ageing index, the results calculated from the interviews in 2 (employment, social participation) out of the 4 domains was almost the same as in the original index, in the other 2 domains, data showed striking resemblance. All of this suggests that qualitative methods can be used to calculate the active ageing index, it can be a tool used quickly by individuals, and can be efficiently used on a personal level (PIÑEIRO VÁZQUEZ et al. 2018).

Despite the criticism, the questionnaire applied in this research was chosen because it offered a new viewpoint, and with a slight addition, it contained all important fields that had robust impact on active ageing. During designing the measurement tool for data collection, a lot of emphasis was put on creating a revised, useful questionnaire, with retaining the main domains of the index. However, it was inevitable to implement changes. The original version of the index applied to age groups of 55 years or older, the Hungarian research mostly involved 65 people aged 65 or above. Certain questions were thus less adequate due to the typically higher age of the sample or the special nature of the Hungarian group observed, e.g. economic activation in the group of retired people, which number was particularly low in Hungary (in 65–74-years-olds the proportion of economically active people was as low as 4.2%) (Eurostat 2016). The aim was not to create a single index number; the existing questionnaire was rather used as a well-established thematic framework, which was adapted to the characteristics of the Hungarian sample. In this research, a questionnaire consisting of 35 questions and based on the original AAI questionnaire was created and applied.

Instead of questions about the proportion of economic activity in this age group, two other questions were involved, which were not part of the original AAI questionnaire. These two questions were also part of the EU-Labour Force Survey (EU-LFS), but the organizers of the index did not include them. The selected questions concerned with the respondents' income-generating activities and non-income generating activities (e.g., domestic work) and provided more valuable information about the target group.

In addition, two more question groups were included in the questionnaire, because of their relation to active, stable and independent ageing:

- accessibility in residential property
- religiosity

4.3. Sample

Out of the six community-based social services⁶ currently available for older people in Hungary, day care was selected for the study. As residents of day care institutions, clients take part in programs focusing on socialization, and in different cultural and leisure programs. This service provides daytime activity for older people, usually supplemented with social catering (1 hot meal/day). Providing health monitoring programs and mental well-being guidance are also primary aims of day care. Professionals are capable of monitoring clients and are able to follow occurrent changes in their physical and mental status. Care needs are mostly not essential for clients in day care, although it is part of the service elements that the Social and Family Affairs Regulation⁷ mentioned. If care needs increasing, clients can take domestic care instead of the day care service. The primary reason why this service was selected over other community-based social services is that the characteristics of active ageing are most likely to appear in those elderly groups that are more or less able to take care for themselves, living in their own, well-known places. They are the ones who need daily or occasional service in day care, so they already appear in the social system, yet they live their days actively and independently without increased care need. According to the relevant data of the Hungarian Central Statistical Office (STADAT, Social Statistical Yearbook), the service of day care for older adults was used by 31,249 people who were 65 or older in 2017 (Központi Statisztikai Hivatal 2018). As per the statistics, the geographical distribution of service users shows an uneven pattern.

Data collection for this research was made between the end of 2016 and the first half of 2017. Following the well-run pilot survey, the questionnaire sent to regional centers (institutions) providing day care for older adults as a self-completed, anonymous questionnaire for clients. Convenience sampling was used as a sampling method, every day care service user in the regional centers' institutions had a chance to become part of the sample. 397 people participated in this survey and filled the questionnaire.

4.3.1. Regional affiliation

According to national statistics, the larger the region, the more elderly adults live there (Központi Statisztikai Hivatal 2013), except for Southern Transdanubia and Central Hungary. The highest response rate in the research was found in Northern Hungary, while the lowest was found in Western Transdanubia (*Figure 1*). Although Central Hungary has a remarkable number of elderly population, with 10% of the participants, they were only the fifth in the line in terms of the number of regional participants. 31% of respondents live in the Western, and 59% live in Eastern regions, complemented by 10% in Central Hungary.

⁶ Social catering, domestic care, day care, alarm system based home assistant, family support service, village and home stead caretaker service

⁷ I/2000 Social and Family Affairs Regulation about the professional responsibilities of the social care institutions providing personal care and the conditions under they operate

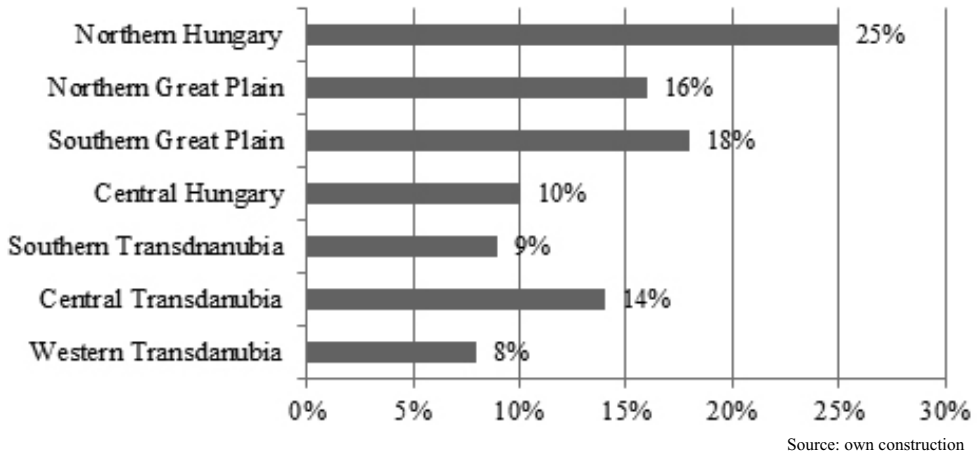


Figure 1
Percentage of respondents in the regions (N = 397)

4.3.2. Distribution by gender

Three-quarters of the respondents were women, while only 26% were men. This ratio corresponds to the gender distribution of the national sample for elderly day care recipients (38 551 people, 72% women and 28% men, Központi Statisztikai Hivatal 2017). In most community-based social services, women are so overrepresented that it cannot be explained only by higher life expectancy. It is more likely that they are more willing to receive benefits and services and more likely to seek help than their male counterparts.

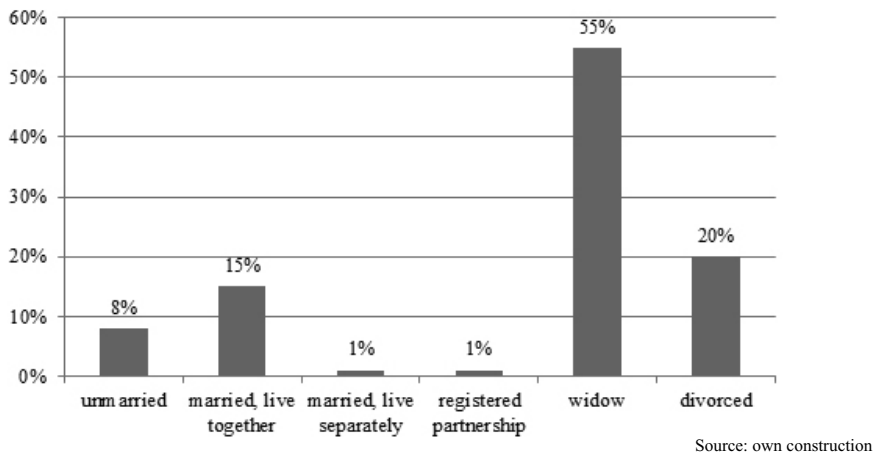


Figure 2
Respondents' marital status (N = 394)

In the sample, widowed participants appear in the highest proportion (55%), while divorced ones follow them with 20%. This shows that day care service reaches mostly the group of people who live alone or who lost their spouse.

4.3.3. Distribution by age

In the sample, the respondents were divided into 4 larger groups according to their age for easier transparency (*Table 1*).

Table 1
Distribution of respondents by age group (N=390)

<i>Age groups</i>	<i>Percentage</i>
<i>64 or younger</i>	14%
<i>65–74 years old</i>	38%
<i>75–84 years old</i>	36%
<i>85 or older</i>	12%

Source: own construction

The so-called ‘early old age’ (65–74 years) and ‘late old age’ (75–84 years) showed up in the highest proportion. People aged 85 or over made up 12% of the sample.

4.3.4. Education

The majority of the sample (25%) graduated from civil schools (today’s equivalent would be primary school certification). They were followed by those who graduated from vocational schools (21%) and secondary schools (20%). Only 15% of the respondents have a degree from higher education. Education is one of the most powerful explanatory variables in researches, mainly because of its permanence.

4.4. Results

4.4.1. Accessibility

Only 25% of the respondents made some kind of accessibility transformation in one or more rooms. Where this transformation happened, it concerned mainly the household’s bathroom/restroom; and after that, they focused on the living room or bedroom, then the participants made accessibility changes in their kitchen. Most of the respondents who made their apartments accessible belong to age group 65–74. Regional affiliation did not correlate with accessibility; there is no connection

between them. Before the analysis, it was assumed that due to the impact of the capital and its technical development, accessibility is more common in the Central Hungarian region (where the capital is located), but it has not been proved. Accessibility does not correlate with the income situation of the respondents' households ($r = 0.091$) (based on their own subjective judgment) and we only found a weak positive relationship between accessibility and health hindrance ($r = 0.134$).

4.4.2. Physical security in the living environment

The existence of physical security strongly contributes to the activity and mobility of the elderly. Beyond physical mobility, a sense of security is also essential for older people when leaving their home environment for an outdoor program or gathering in the evening. It affects and helps to stay mobile, active, and take part in different meetings no matter how long they last. The safety of the residential area showed a 50–50 distribution. 56% of the respondents felt that they are not or not at all safe in their neighborhood after dark, whereas 46% of them said that their living environment was safe or rather safe. In terms of genders, there was a significant difference ($p = 0.03$) whether someone considered their living environment safe after dark. Women reported a lower sense of security. There was no correlation between age and physical security, but there was a link between health hindrance (disease, mental problem, disability in everyday life) and the sense of physical security in the examined sample.

4.4.3. Dispose of physical goods, especially with ICT (info communication) devices

Physical goods and objects can influence and facilitate everyday life, and thus affect the quality of life, too. By physical goods, we do not only mean luxury items, but also vehicles (that facilitating mobility) or ICT tools that strongly support communication, e.g. computer, internet, telephone, or tablet. The vehicle helps maintain relationships with people where public transportation is less feasible due to their physical conditions. It can also facilitate other activities that have an impact on long-term independence, such as access to shopping, administration duties, medical visits, etc. 18% of the sample had a car in their household, while 35% did not have this option due to financial reasons, and 47% had no car for other reasons, such as the poor health of the respondent. Older people are extremely vulnerable to loneliness and social isolation; an entire range of studies deal with the concept and the negative effects of loneliness in older life (SINGH & MISRA 2009; WONG et al. 2017).

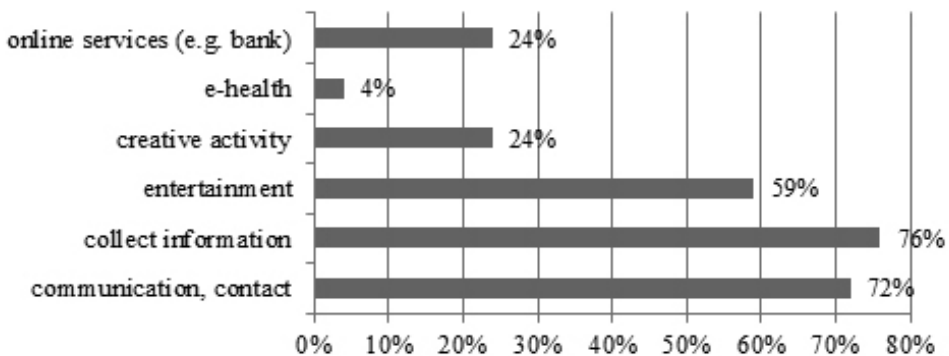
A strong connection between loneliness, depression, and other health problems was shown. Some researchers believe that they find the antidote of loneliness in elderly life with the support of religion, spirituality, and creative activities (KUMARI 2015). Probably all these suppositions offer solutions for older adults against loneliness, and what they choose only depends on their nature and needs. Nevertheless, it

is surely a fact that the different type of ICT tools and learning their use makes it easier for older adults to stay connected with their relatives, friends, and service providers. a significant amount of good practices is available, which can even bridge the gap between generations (SZÉMAN 2012).

64% of the sample still did not have access to a computer or any other ICT device in their household. The result was the same for the internet access question with a 1% difference. Almost every households with a computer had internet connection. There was no significant correlation between gender and computer or gender and internet access. The financial situation of the household was not a significant factor in this question.

The availability of a computer or internet access variables both had a strong connection with the education variable ($p = 0.01$, $p = 0.09$). The higher your education, the more likely your household has a computer or/and internet access. These two variables also correlate with mental well-being (computer $r = 0.18$, internet $r = 0.2$).

Someone having a computer and internet access in their household did not necessarily mean that the person was using the device. For this reason, another question focused on how often they used the computer and/or the internet? 36% of the sample reported using a computer, with 23% using it every day, 7% switched on the computer at least once a week, and only 6% said that they were using it less than once a month, 64% reported not using it at all. The results of the internet usage questions were nearly the same: 35% had internet connection, 22% used it daily, 7% went online at least once a week, 2% once a month, and 4% less than once per month. I found it appealing that those who had it are also used these technologies regularly. Another critical question was what the users used the Internet for, and how did it help them? They were asked a multiple-choice question, and for each activity, they could choose yes/no. The top three activities were: collecting information, communication over the internet, and entertainment (*Figure 3*).



Source: own construction

Figure 3

Activities on the internet among those who has internet connection (multiple choice)

4.4.4. The financial conditions of the household

In the sample, the answers to the question about satisfaction with one's financial conditions were moving in a more neutral direction. Nearly half of the sample, 49% of the respondents felt that they could manage their household spending; however only 10% responded that they were satisfied regarding their financial conditions. 23% said it caused difficulties for them to deal with their financial situation every month, and for 13%, it caused extreme difficulties. Due to the sensitive nature of the question, 6% did not want to answer. There was a connection between households' financial situation and the level of education ($p = 0.004$), and between financial situation and subjective happiness ($p = 0.00$). This variable correlated with regional affiliation ($r = 0.097$, $p = 0.019$) and education ($r = -0.128$, $p = 0.02$). In the Western regions of the country, the respondents were more satisfied with the income of their households, the higher someone's education level was, the more satisfaction was reported due to their household's financial conditions.

4.4.5. Communication as a solution against loneliness

The number and frequency of confidential relationships have a significant impact on the quality of life not only for older adults, but for all of us. Many types of research highlighted the problem of loneliness and its connection to a range of illnesses in older age. These researches found important relations with variables like health, mental illness, and cognitive abilities (ZHONG et al. 2017; SIN et al. 2018; SMITH & VICTOR 2018). To avoid reaching an undesired status and to foster active ageing, it is essential to nurture and maintain confidential relationships.

The number of confidential relationships is an accepted concept in social science research, and denotes the number of relationships in which the respondent has the opportunity to share in-depth, private affairs. Those with a strong, stable network of relationships produce more favorable results in terms of physical and psychological variables than their peers (HORVÁTH-SZABÓ 2011, DÁVID & LUKÁCS 2015). According to Hungarian studies, the number of those who do not have confidential relationships is smaller than the international average (ALBERT & DÁVID 2015). In the 2000s, typically family/relative ties meant confidential relationships, besides them, friendships became increasingly important in the group of confidential relationships (UTASI 2002). According to the recent data, the number of so-called 'chosen confidential relationships', i.e. not with family members or relatives, shows a strong increase, and from 2011, people less frequently reported having confidential relationships with their family members (ALBERT-DÁVID 2015).

In this research, our aim was to investigate the number of confidential relationships based on self-declaration, the personal and other relationships of the respondents with their children (if any), their other relatives, and their neighbors. In the sample, 10% of the respondents had no confidential relationships at all. This was a low number compared to other groups, but it meant that 10% of the respondents probably

could not share their private affairs with anyone, although it could be an important part of independent, active ageing. 21% of the sample had at least one confidential relationship, 23% of them had two, 18% had three and 29% of them were so lucky that they had 4 confidential relationships. The results showed a positive picture, and community-based social services could be an answer for the 10% who had no confidential relationships. No differences were found in the number of these relationships according to gender.

4.4.6. Subjective happiness

For measuring subjective happiness, a simple but well-functioning question was used. Participants had to provide their answers for the following question: ‘Taking all things together, how happy would you say you are?’ in a simplified four-point scale. The correlations between the single item (ten-point scale) and both the Oxford Happiness Inventory (OHI; ARGYLE et al. 1995; HILLS & ARGYLE 1998) and the Satisfaction with Life Scale (DIENER et al. 1985; PAVOT & DIENER 1993) were significant (ABDEL-KHALEK 2006). This single question about happiness was part of the European Social Survey 2012 questionnaire, too. Using of a single-item question about happiness provides reliable and valid data both in cross-cultural and national studies (ABDEL-KHALEK 2006). 68% of the respondents identified themselves as ‘very happy’ or ‘more or less happy’. Subjective happiness is one of the most correlating variables. It had a strong connection to the subjective general health status ($r = 0.332$), the number of confidential relationships ($r = 0.254$), the financial conditions of the household ($r = 0.210$) and health hindrance ($r = -0.209$). From this sample, it seemed that age, gender, marital status, or education had no significant correlation with happiness.

4.4.7. Mental well-being as a new variable

Due to the close movement of the 5 well-being variables included in the active aging index and the questionnaire for this research (variables initially used by the European Quality of Life Survey 2011–2012=EQLS), a new variable was developed with principal component analysis: mental well-being.

The five former variables from the European Quality of Life Survey (EQLS) 2011–2012:

Please indicate for each of the five statements which are closest to how you have been feeling over the last two weeks:

- I have felt cheerful and in good spirits
- I have felt calm and relaxed
- I have felt active and vigorous
- I woke up feeling fresh and rested
- My daily life has been filled with things that interest me

(EQLS 2012)

While developing the new mental well-being variable, the explained variance was 60%, which meant that the new variable explained the previous 5 variables well. Analyzing the relationship between regional affiliation and mental well-being, it could be said that respondents in Central Hungary, Western Transdanubia, and the Southern Great Plain reached the best results. In contrast, the results of the respondents living in Northern Hungary were the lowest. The new variable had a connection with the subjective happiness variable ($p = 0.00$) and the household's financial condition ($p = 0.045$). The built-in subjective happiness variable and the financial conditions of the respondents' households for fixed factors general linear model worked well, especially when age was involved in the model as a covariant. It meant that the two fixed factors with the covariant explained the change of mental well-being at a high level. Age did not affect mental well-being in this sample.

5. Conclusions

Statistical data and forecasts predict the unsustainability of social and day care services for older adults in the near future. The rapid increase in the number of elderly people, especially in the oldest group, is an acute problem. Demographic changes and the ageing represent a pivotal problem requiring instant solutions. Due to the increasing inequalities between the needs and the available resources, such as increasing demand, increasing service fees and the lack of human resources, a serious strategic re-planning of the system is needed. It would be necessary to consider the opinions of experts and professionals: to support the improvement of community-based social services for the elderly and recommend the adaptation of the concept of active aging into these services. Preserving the familiar environment and aiding social services in providing help in the clients' own homes are crucial factors of this process. Finding solutions for older adults with special needs, i.e. dementia or other types of disabilities, could be a key factor besides redefining the system of social care, also in respect of improving financial and fringe social benefits for the clients and their informal caregivers. Day care centers could be a good starting point for these changes.

The care for the elderly should be based on the co-operation of the government/conservators/relatives trio, as it cannot be solved by the partners individually. The observation of the sample clearly showed that there are points requiring urgent interventions. Providing information to the generation about to retire is essential for a preventive approach. Community-based social services, and day care in particular have to be extended not only to women, but also to senior men. In the context of the transformation of the elderly care system, it will be useful to consider that, after changing opportunities and finding new ways, more men can be involved in the system. Besides widows and those living alone, in the future, it will be important to try involving clients with different family statuses. If more people get into social services, different problems and illnesses possibly turn out earlier and can be followed up by professionals. More emphasis should be placed on the involvement of elderly couples into day care services. Improving the use of ICT device skill of the elderly

seems to be one of the safest, most reliable, and most cost-effective solution that could help older adults in their everyday life. Promoting and supporting accessibility is also essential because, with this, helping older people will be possible in their well-known environment for a prolonged period. Staying in their well-known place supports staying active and independent longer, while on the other hand, it helps preserve older people's mental health.

While analyzing the data, other observations have been made requiring further studies with different qualitative techniques in the near future:

Utilizing participants' ideas (regardless of their family status) about the possible methods of involving potential clients still living with their spouses. Retired people living with their spouses could also enjoy the benefits of day care services: Active programs, new acquaintances, professional help, and attention can also contribute to the prevention of diseases like dementia.

The goal of using the qualitative interview technique is to get an insight and understanding of the clients' ability to contribute to their own active ageing, helping them to maintain an independent life at their own homes.

In the case of 75–84 years old and 85+ years old people, it seems to be necessary to examine what kind of support could help them best in finding adequate help in day care despite their higher age.

Understanding the differences in preventive methods according to the needs of the different age groups. What do clients and professionals think about the increasing emphasis on prevention in social policies and the appearance of active ageing? Are these concepts suitable to maintain active life during the process of ageing?

My further plan is to complement the results of the quantitative research with the answers for the above-mentioned thoughts using qualitative method. These sets of information could enable us to open new perspectives and find new focus areas for both policy makers and stakeholders regarding the improvement of community-based, and basic social services for older adults.

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TSZ WAH MA*

EVERYDAY LIFE EMOTIONS DURING ANTI-FUGITIVE OFFENDERS ORDINANCE PROTESTS IN HONG KONG

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This experience sampling study investigated the impact of political movement (i.e. Anti-Fugitive Offenders Ordinance Protests) on everyday emotional reactivity and dynamics. Participants who finished our experience sampling during Movement (18–70 years; $n = 100$) and matched sample (18–70 years; $n = 100$) reported positive and negative emotions seven times a week for five weeks. Hierarchical linear modeling revealed that during the Movement, participants reported lower positive emotions and higher negative emotions, and lower positive emotional inertia and higher negative emotional inertia. This study is the first of its kind to investigate different aspects of everyday emotional experiences during political movements. Participants perceived significant changes in their everyday events although the Movement was not long and not severely violent. This study highlights the importance of investigating everyday emotions of people in other more serious conflict and post-conflict settings.

Keywords: Fugitive Offenders Ordinance; emotion; everyday life; political movement; Hong Kong

1. Introduction

There is a deficit of knowledge about whether people have different emotional experiences in everyday life during a social movement compared with people during a period without a major social movement. Moreover, one important limitation of the previous studies was that it used cross-sectional designs to examine the relationships between political movement and emotional well-being. Social movement is not static but incubates, develops, and changes over time (DUPONT & PASSY 2011; KURZMAN 2015; LAGI et al. 2011). This study aims to (1) investigate everyday emotional experience during a political movement in Hong Kong, and (2) to examine the variability,

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instability, and inertia of emotional experience between a political movement group and a comparison group. A thorough investigation was conducted on emotional reactivity and variations in it, namely, variability, instability, and persistence. The Anti-Fugitive Offenders Ordinance Protests in Hong Kong would be introduced. Then conceptual and empirical literature on these emotional variables and the associations of them with psychological distress and well-being among clinical and healthy populations were reviewed.

2. Fugitive Offenders Ordinance

The Fugitive Offenders Ordinance has become the public attention since the case of a young Hong Kong woman who disappeared in Taiwan in February 2018. Taiwanese authorities suspected her boyfriend as having killed her and sought his return to Taiwan to face murder charges. But there are no general provisions for the transfer of criminal suspects between Hong Kong and Taiwan. Thus, the government has proposed amendments to the Fugitive Offenders Ordinance, which would apply to all legal jurisdictions that do not at present have a full-scale cooperation agreement with Hong Kong.

However, according to a public opinion poll conducted by the University of Hong Kong (2019), it shows that the largest proportion of citizens is opposed to this amendment. It is also interesting that both the supporters of the pan-democrats, the moderates, and those without any political allegiance, also demonstrated a clear opposition stand on the amendment. Although the government later proposed six extra measures for protection in order to address public concern, the controversy over the Fugitive Offenders Ordinance remains intense.

The Fugitive Offenders Ordinance has finally triggered large-scale protests on 9 June, 2019. Many large-scale protests have also been occurring subsequently in Hong Kong in June. An estimated over one million of the 7.2 million citizens have reportedly participated in the related protests (CHEN 2019). The Anti-Fugitive Offenders Ordinance Protests were the largest-scale social movement in Hong Kong since the Umbrella Movement in 2014 (CHAN 2014). There were originally violent clashes between protesters and the police outside the Central Government Offices and Hong Kong Police Headquarters, some of which involved pepper sprays. Also, other rounds of more severe and massive battles broke out across the different districts and shopping malls. These clashes resulted in a cumulation of at least 1000 injuries that required emergency room visits (HUI 2019).

3. Emotion and Political Movement

Positive emotions are conceptualized as states of feeling pleasant such as joy, pride, contentment, or excitement (FORD et al. 2018). Evidence exists that positive emotions are a crucial component of both mental and physical health (GRUBER et al. 2011). Meanwhile, negative emotions are defined as unpleasant or unhappy emotions,

which are evoked in individuals to express a negative effect towards an event or person (FORD et al. 2018).

Emotion is one of the important elements of social movements (JORDANS et al. 2012). Emotion impacts mobilization, demobilization, and solidarity among protesters in social movements (BENSKI & LANGMAN 2013; JASPER 2014). Understanding the sources of political threat results in feelings of hatred, suspicion, and indignation, which then powerfully mobilize the movements and protest actions (JASPER 2014). Protests could be viewed as a form of collective action and rely heavily on the participants' sense of belonging to the movements and whether the cause of action resonates with the participants' emotions (RASMUSSEN & ANNAN 2009; RASMUSSEN et al. 2010). Meanwhile, immersion within the collective identity brings about positive experiences and positive emotions (ROBERTS et al. 2010). The proposed reason is that the collectivism in social movements originates from the shared meanings and reciprocal emotions toward fellow group members, such as enthusiasm and assertiveness concerning the goals of the movements (ROBERTS et al. 2010).

Existing evidence further suggests that positive and negative emotional experiences are likely highly variable and dependent upon the conditions of social movements. However, there is limited study on the psychological impact of political movements, not to mention the investigation of everyday life events and emotional experience in the midst of wars, conflicts, or political unrests (SABLONNIÈRE et al. 2013). For example, Brazilians expressed more protest-related negative than positive emotions during the summer of 2013, a period of conflicts and riots across more than 100 cities in Brazil (COSTA et al. 2015). Patterns of emotional changes could be highly related to psychological distress and well-being (ROEKEL et al., 2015; WICHERS et al. 2009). Moreover, Egyptian citizens who were injured in political demonstrations reported higher levels of psychiatric symptoms than patients who experienced physical trauma from other causes (PAPANIKOLAOU et al., 2013). Hong Kong Chinese ($n = 1,206$) reported significant levels of anxiety symptoms (33%) and depressive symptoms (10%) during the Anti-Fugitive Offenders Ordinance Protests (MA 2019).

However, one important limitation of the above-mentioned previous studies was that they used cross-sectional designs to examine the relationships between political movements and emotional well-being. Although these correlational designs studies provided a good insight into the association between the political movements and the citizens' mental health, they may have three major issues. First, retrospective self-report measures of emotional experiences may well produce inaccurate results on assessing ongoing emotional experiences due to biases of memory storage and recall. No study to date has investigated everyday life emotional experiences of people in the midst of social and political movements. Second, they were conducted after the movement ended. The lag period might have influenced the emotional states of the general population. Third, none of the previous studies have provided clear definitions on emotional dynamics during political movements.

4. Everyday emotional reactivity

Emotional reactivity refers to the average intensity or magnitude of people's emotional responses to different events. Cognitive theories suggest that people with depression are more likely to demonstrate a negative inferential style, rumination over negative events and emotions, and selective attention to negative information in response to stressors (DAVIDSON 2002). Higher negative emotional reactivity reflects a failure to regulate negative emotions in everyday life, contributing to heightened depressive symptoms (O'NEILL et al. 2004). Less intense responses to negative events and faster recovery from the responses have been underscored by a number of theoretical frameworks as being indicative of human resilience (KASHDAN & ROTTENBERG 2010).

Higher negative emotional reactivity in everyday life reflects a failure to regulate negative emotions and, thus, poorer mental health (COHEN et al. 2005; PARRISH 2011). Higher negative emotions in negative events have also been found to predict higher affective symptoms and to increase the risk of major depressive disorder (MDD) among a community female twin sample (WICHERS et al. 2009). Among women with histories of MDD, higher negative emotional reactivity predicted higher subsequent affective symptoms, controlling for the severity of previous MDD symptoms and trait neuroticism (WICHERS et al. 2010). Patients undergoing weekly cognitive therapy for emotional disorders demonstrated lower levels of anxiety and depressive symptomatology (GUNTHERT et al. 2006).

Positive emotional reactivity has received relatively less attention but some recent evidence suggests its adaptive utility. Among people vulnerable to or affected by major depressive disorder (MDD), higher positive emotional reactivity in everyday life predicted lower affective symptoms and a higher effectiveness of pharmaceutical treatment, especially among women with childhood trauma and recent stressful events (GESCHWIND et al. 2010; 2011).

5. Everyday emotional variability and instability

Emotional variability is defined as the extent to which the intensity of emotional reactions deviates from the average level over time, whereas emotional instability takes into account variability as well as temporal progressions of changes in emotional reactivity over time (JAHNG 2008). Variations in emotional reactivity can be assessed by taking into account the frequency of changes in emotions over time on top of average intensity (TRULL et al. 2008).

The variability and/or instability of everyday negative emotions predict poorer mental health. Negative emotional variability in everyday life was associated with higher anxiety and depressive symptoms among 83 women with a major depressive disorder (MDD) (WICHERS et al. 2010). People with social anxiety relative to healthy controls reported lower and unstable positive emotions but higher and stable negative emotions over two weeks of daily diaries (FARMER & KASHDAN 2014). While children and adolescents with MDD reported decreased negative emotions

over an eight-week cognitive-behavioral treatment, everyday instability of negative emotions – especially anger and sadness reported between Friday and Monday – was higher than that of healthy controls (SILK et al. 2011).

Similarly, the variability and instability of positive emotions could have detrimental impact on mental health. Depressive symptoms predicted a higher variability and instability of positive emotions in the everyday life of a sample of early and late adolescents (ROEKEL et al., 2015). Moreover, the variability of positive emotions predicted higher anxiety and depressive symptoms, as well as lower global functioning and life satisfaction, whereas the instability of positive emotions predicted higher depressive symptoms and lower subjective happiness among the samples of American and French adults (GRUBER et al. 2013).

Specifically, negative emotional instability in everyday life predicted higher depressive symptoms, independently of the effects of average negative emotional reactivity and variability (KOVAL et al. 2013). For example, compared to non-depressed controls, people with a major depressive disorder demonstrated a higher than average positive and negative emotional reactivity and higher negative emotional instability over seven to eight days (PE et al. 2015; THOMPSON et al. 2012). However, people with depression and controls did not differ in positive emotional instability, or in positive and negative emotional variability (THOMPSON et al. 2012).

6. Everyday emotional inertia

Emotional inertia is defined as the extent to which emotional states tend to persist instead of changing over time (HOUBEN et al. 2015; KUPPENS et al. 2010). The emotional context insensitivity hypothesis proposed that negative emotions that persist across the everyday situations contribute to poorer mental health and adjustment (CHIDA & HAMER 2008). Compared to nondepressed people, individuals with depression reported similar levels of sadness following watching a sad movie, but the latter also reported higher levels of sadness following watching neutral and happy movies (ROTTENBERG et al. 2005; ROTTENBERG et al. 2002). The persistence of both positive and negative emotions in everyday life, in aggregate across 14 consecutive days, was inversely associated with self-esteem among college students (KUPPENS et al. 2010). Nevertheless, it should be noted that when considered individually, more persistent positive emotions in everyday life predicted lower subsequent depressive symptoms among a community sample of women, and better responses to treatments among individuals with depressive disorders (HÖHN et al. 2013).

7. The present study

Whereas most previous research has adopted a cross-sectional design, this study adopts the experience sampling method (ESM) to investigate the impact of political movement (i.e., the Anti-Fugitive Offenders Ordinance Protests) on everyday emotions. ESM is a research method focused on real-time data capture and is characterized

by capturing events at the moment of occurrence (STONE et al. 2007). Retrospective self-report measures of emotional experiences from previous studies may well produce different results compared to the ESM of assessing ongoing emotional experiences, due to biases of memory storage and recall. Relatively much less evidence has been obtained using ESM. A sample of Hong Kong Chinese during the Anti-Fugitive Offenders Ordinance Protests was recruited and assessed. An age-matched and sex-matched comparison group was used before the Anti-Fugitive Offenders Ordinance Protests occurred, which is a period without major political conflicts and movements. This study hypothesizes the following:

Hypothesis 1: During the political movement, people experience lower positive emotions but higher negative emotions (i.e., emotional reactivity).

Hypothesis 2: During the political movement, people experience more variable and unstable positive and negative emotions, and less inert positive emotions but more inert negative emotions (i.e., emotional dynamics).

8. Method

8.1. Participants and procedure

An experience sampling survey was conducted between July and October, 2019 (the major protest started on 9 June 2019 and still continues) by stratified probability sampling from a database representative of the population (Census and Statistics Department 2011), upon obtaining the written consent from respondents. Inclusion criteria were (1) Chinese ethnicity, (2) Cantonese fluency (the most commonly spoken Chinese language and the mother tongue of 90% of the population in Hong Kong), and (3) an elementary education level or above. Individuals with a history of psychiatric conditions and a presence of cognitive impairments were excluded from the study.

Participants were instructed to report everyday positive and negative emotions over five weeks (i.e. 35 days). The assessment period covered twenty-five weekdays and ten weekend days. Items were presented in black ink on a white background. Each participant received extensive individual instructions and trainings on the ESM tasks. On each sampling day, participants were required to report their everyday positive and negative emotions from 6–12 PM in case they were available to fill in the questionnaires. If a participant responded to fewer than six sampling moments on a given week, the EMA period would be extended for one week. The compliance rate was 89.8%.

8.2. Measures

8.2.1. Sociodemographic characteristics

A standardized proforma was used to obtain demographic information including age in years, sex, marital status, education level, employment status, monthly household income, and years of residence in Hong Kong.

8.2.2. Everyday life emotions

At each sampling moment, positive emotions and negative emotions were first assessed using 12 items (HAMID & CHENG 1996). Six items assessed positive emotions and negative emotions, respectively. The six items for positive emotions are: alertness, attentiveness, determination, enthusiasm, excitement, and pride; while the six items for negative emotions are: distress irritableness, jitteriness, nervousness, being scared and being upset. Participants used a five-point scale (0 = *very slightly or not at all*, 2 = *moderately*, 4 = *very much*) to indicate the extent to which they experience each emotional state at the moment. Separate summation scores were calculated for positive and negative emotions (range = 0–24). In the current administration, alphas were 0.95 and 0.93 for positive and negative emotion subscales, respectively.

8.2.3. Positive and negative emotional dynamics

First, variability of positive and negative emotions was calculated using standard deviation at each occasion. Second, instability was indicated by square successive differences (SSD) between assessment points. We preprocessed the data by calculating the time series of squared successive differences, referred to as SSD_{ij}, in which ‘i’ referred to person and ‘j’ referred to session. The series of SSD_{ij} were calculated separately for positive and negative emotions, with variability in the timing of assessment taken into account (JAHNG et al. 2008). SSD_{ij} was log-transformed to adjust for skewness of the distribution, and the zero values of SSD_{ij} were replaced with half of the smallest nonzero value to allow for log transformation. Third, positive and negative emotional inertia was indicated by autocorrelations between assessment points.

8.3. Analytic plan

Mann Whitney *U* tests were used to identify any differences in sociodemographic characteristics between the Anti-Fugitive Offenders Ordinance Protests group and the matched group. No significant group differences were identified in all demographic characteristics. Hierarchical linear modeling (HLM) was conducted using HLM 7.0 (RAUDENBUSH 2011).

HLM used all available data, the data consisting of a maximum of 35 sets for each participant. All models consisted of two levels, sessions (Level 1) and individuals (Level 2). To address the study hypotheses, eight models were constructed to test the associations of social movement and emotional well-being. The dependent variables comprised the following eight Level 1 variables, which included (1) positive and negative emotions, (2) positive and negative emotional variability, instability, and inertia. Level 2 consisted of group membership (0 = Matched Group, 1 = Group during Anti-Fugitive Offenders Ordinance Protests) as the predictor. Separate models were constructed to test group differences in emotional reactivity and dynamics (i.e., variability, instability, and inertia).

9. Results

9.1. Emotional reactivity and dynamics during the protests

Among the 200 participants, 100 finished the ESM during the Anti-Fugitive Offenders Ordinance Protests (mean days since the start of the Anti-Fugitive Offenders Ordinance Protests = 46.15, $SD = 6.26$, range = 27-65). The detailed sample characteristics are summarized in *Table 1*. Hierarchical linear modeling revealed that during the Anti-Fugitive Offenders Ordinance Protests, participants reported lower positive emotions (Estimate = -3.03 , $SE = 0.96$, $t = -3.16$, $CI = -4.91, -1.15$, $p < 0.001$), and higher negative emotions (Estimate = 2.43 , $SE = 0.77$, $t = 3.16$, $CI = 0.92, 3.93$, $p < 0.001$), relative to the matched sample during a period without major social/political movements. Significant group differences were also identified in positive and negative

Table 1
Demographics of the participants

	<i>Social Movement Group</i>	<i>Comparison group</i>
<i>Mean age (SD)</i>	44.39 (17.76)	44.01 (17.63)
<i>Range</i>	18–70	18–70
<i>Sex (female)</i>	50	50
<i>Marital status</i>		
<i>Married</i>	54	52
<i>Single/divorced/widowed</i>	46	48
<i>Education level</i>		
<i>Primary education or below</i>	0	0
<i>Secondary education</i>	60	58
<i>Tertiary education or above</i>	40	42
<i>Employment status</i>		
<i>Employed</i>	90	88
<i>Unemployed</i>	2	3
<i>Retired</i>	8	9
<i>Monthly household income</i>		
\leq HKD10000	10	9
HKD10001–20000	12	13
HKD20001–30000	18	19
HKD30001–40000	33	31
\geq HKD40001	27	28

*EUR\$1 \approx HK\$8.5

emotional inertia, in general (Estimate = -3.04 , 2.44 , $SE = 0.96$, 0.77 , $t = -3.18$, 3.17 , $CI = -4.93$, -1.17 and 0.93 , 3.95 , $p < 0.001$). Lower positive emotional inertia and higher negative emotional inertia were observed among the group during the Anti-Fugitive Offenders Ordinance Protests, controlling for demographic covariates. No group difference was identified in positive and negative emotional variability and instability (Estimate = -0.91 to 1.54 , $SE = 0.15$ to 1.88 , $t = -1.70$ to 1.35 , $p = 0.10$ to 0.85). The results are summarized in *Table 2*.

Table 2
Hierarchical linear modeling of group differences in emotional reactivity and dynamics.

	<i>Group difference</i>	
	<i>Estimate (SE)</i>	<i>p</i>
<i>Average PA</i>	$-3.03 (0.96)$	<0.01
<i>Average NA</i>	$2.43 (0.77)$	<0.01
<i>PA variability</i>	$-0.06 (0.25)$	0.80
<i>NA variability</i>	$0.21 (0.32)$	0.52
<i>PA instability</i>	$-0.08 (0.15)$	0.59
<i>NA instability</i>	$0.15 (0.17)$	0.38
<i>PA inertia</i>	$-3.05 (0.83)$	< 0.01
<i>NA inertia</i>	$2.44 (0.77)$	< 0.01
	<i>Random Effects</i>	
<i>Level 1 Variance</i>		
<i>Average PA</i>	$9.94 (3.15)$	
<i>Average NA</i>	$9.54 (2.94)$	
<i>PA variability</i>	$3.53 (1.88)$	
<i>NA variability</i>	$2.92 (1.71)$	
<i>PA instability</i>	$1.75 (1.32)$	
<i>NA instability</i>	$1.27 (1.13)$	
<i>PA inertia</i>	$8.70 (2.95)$	
<i>NA inertia</i>	$6.79 (2.61)$	
<i>Level 2 Variance</i>		
<i>Average PA</i>	$21.93 (4.68)$	< 0.01
<i>Average NA</i>	$13.97 (7.94)$	< 0.01
<i>PA variability</i>	$1.37 (1.17)$	< 0.01
<i>NA variability</i>	$2.36 (1.54)$	< 0.01
<i>PA instability</i>	$0.47 (0.68)$	< 0.01
<i>NA instability</i>	$0.61 (0.78)$	< 0.01
<i>PA inertia</i>	$22.37 (4.73)$	< 0.01
<i>NA inertia</i>	$13.80 (3.71)$	< 0.01

10. Discussion

The current findings are partially consistent with the previous literature on emotion. Hierarchical linear modeling found that people during the protests did not experience more positive and negative emotional variability and instability, but they did report lower positive emotions and higher negative emotions, in general. Lower positive emotional inertia and higher negative emotional inertia were also reported during the protests. The findings on negative emotional dynamics were consistent with previous evidence (GRUBER et al. 2013; HOUBEN et al. 2015; PE et al. 2015).

This study is the first of its kind to collect ESM data on emotions in the everyday life of people during a political movement. Previous studies have found a questionable correspondence between cognitions and emotions reported in ESM and retrospective self-report, possibly due to biases of memory storage and recall (MOSKOWITZ et al. 2009). Contributing to previous literature, we found that people reported lower positive emotions and higher negative emotions, and less positivity of favorable events, notwithstanding that they experienced a similar number of positive and negative events during the Anti-Fugitive Offenders Ordinance Protests. Analyses of emotional dynamics revealed that their lower positive emotions were more variable, whereas their higher negative emotions were more stable during the Movement. Even though the Anti-Fugitive Offenders Ordinance Protests was not long and not severely violent, participants perceived significant changes in their everyday emotions. Our findings highlight the importance of investigating people's everyday emotions in other, more serious conflict and post-conflict settings. For example, civil war has been waged in Syria since 2011. Over 220,000 Syrians have been killed and 800,000 have been injured; 75% of the people are still living in poverty (United Nations 2015). In countries undergoing prolonged pro-democracy movements and armed conflicts, as in Syria, people are likely to experience negative rather than positive events every day, with occasional positive emotions at lower levels and stably higher negative emotions compared with people in countries without major conflicts.

Our findings indicated that a significant association exists between political movements and both positive and negative emotional reactivity. Theoretical and empirical literature has suggested that emotional context insensitivity is maladaptive, and associated with increased psychiatric symptoms (ROTTENBERG et al. 2005). Previous studies have demonstrated reduced flexibility in positive and negative emotional reactivity among individuals having major depressive disorder (KOVAL et al. 2015; ROTTENBERG et al. 2002; 2005). Regulatory flexibility is evaluated in accordance with three sequential processes to capture the person-situation dynamics in adaptation to stress: sensitivity to context, availability of a diverse repertoire of regulatory strategies, and responsiveness to feedback (BONANNO & BURTON 2013). Sensitivity to context refers to the degree to which individuals could accurately perceive and understand situational demands and opportunities. Based on BONANNO and BURTON's (2013) regulatory flexibility perspective, participants undergoing the Anti-Fugitive Offenders Ordinance Protests could be less sensitive to positive cues, and find it

more difficult to produce or upregulate context-congruent positive emotions. Despite perceiving similar positive and negative events during political movements, individuals might be more likely to perceive lower positivity, and experience lower and variable positive emotions and stably higher negative emotions, during positive events. The results were similar to those that were obtained in the everyday life of individuals with social anxiety disorder (FARMER & KASHDAN 2014).

In the heat of pessimism toward Hong Kong's future and dissatisfaction with the government, savoring daily positive events and emotions during a social movement could be an important first step for safeguarding future subjective well-being, especially when positive events are possibly devalued and positive emotions are lower. The perceived capability of savoring positive events predicted higher daily positive emotional reactivity to positive events among college students in the United States (CARL et al. 2014). New Zealand college students reporting a higher savoring of positive events in their everyday life also demonstrated higher positive emotional reactivity to those events (JOSE et al. 2012). An important point to note is that these findings were obtained mainly from Caucasian college students and thus might not be readily generalizable to the current Chinese sample, although the perceived capability of savoring has been found to be adaptive among Chinese people (LIVINGSTONE & SRIVASTAVA 2012; WERNER-SEIDLER et al. 2013). Therefore, it is important, both theoretically and empirically, to study how savoring during social movements contributes to physical and mental health across diverse populations.

11. Limitations and conclusion

Several limitations warrant cautions. First, this study was conducted in a relatively small sample of Hong Kong Chinese ($n = 100$) during the Anti-Fugitive Offenders Ordinance Protests. Sociocultural characteristics could limit the generalizability of the findings to people facing political movement in other socio-cultural contexts. Second, potential confounders such as preexisting mental and physical health issues and concurrent predictors – like exposure to the Anti-Fugitive Offenders Ordinance Protests – were not assessed. Unmeasured confounders could dilute the associations between predictors and outcomes, whereas concurrent predictors like exposure to the Movement could systematically impact emotional experiences. Third, the Anti-Fugitive Offenders Ordinance Protests group was defined as those who completed the study within the Movement (July-October, 2019). The protests still continue in Hong Kong and seem to become more violent and severe. Therefore, we cannot rule out the possibility that there will be more significant difference between the protest group and the control group in case the ESM is done in the later period.

Notwithstanding these limitations, the present study is one of the first to investigate everyday emotional reactivity and dynamics during political movement, and the extent to which these emotional variables predict psychiatric symptoms and subjective well-being post-movement. Social/political movements undoubtedly impact people's everyday emotions. This study provides an important evidence base for

investigating emotions as one of the major domains in everyday life of people during the Anti-Fugitive Offenders Ordinance Protests. In recent years, protests and pro-democracy movements have been on-going, although in many parts of the world, they have yet to be politically successful. An increased number of people undergo a long-term adaptation following political movements, such as occasional armed conflicts, interpersonal violence, and leaving home countries as refugees. There is a body of literature recognizing daily stressors as a missing, yet essential, component for investigating the links of political conflicts and social unrest with mental health in the long-run. In addition to everyday emotions, systematic investigations are needed to explicate which, when, and how other everyday life processes contribute to both positive and negative health outcomes, over and beyond the immediate and usually traumatic exposure to political movement.

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