Changes in emotional intelligence of university students participating in psychological workshops and their predictors

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Abstract

The aim of this study was to determine changes in the emotional intelligence of university students who participated in psychological workshops and their predictors. The examinations were organized within a quasi-experimental design that evaluated pretest-posttest values of emotional intelligence. The intervention, which adopted the form of psychological workshops, was aimed to improve the ability to control emotional states, modify cognitive patterns and expand the array of communicational behaviours. The study examined 30 university students of a physical education course aged 19 to 24 years. The study used *the Popular Questionnaire of Emotional Intelligence*, *the Social Competence Questionnaire*, *the General Health Questionnaire* and *the Courtauld Emotional Scale*. Significant increases in emotional intelligence were observed in students participating in the psychological workshops, although varied depending on its dimensions. The highest differentiation between the measurements was found for understanding of emotions, whereas the lowest - for empathy. Greater increases in emotional intelligence can be expected in young students, who are more willing to suppress depression and reveal lower social competencies and greater intensification of depression symptoms. Psychological workshops can be an effective method to improve emotional intelligence of university students who prepare to the profession of a physical education teacher or a coach.

Keywords Emotional intelligence · Psychological workshops · Polish university students · Physical education · Predictors

"Abba Poemen said: 'Teach your lips to say what is in your heart'" (*Apoftegmaty Ojców Pustyni* 2007, p. 388).

Introduction

In times of postmodernism, with increased autonomy of individual people, growing competition and disappearance of emotional ties, problems of emotional intelligence seem to be especially topical (Goleman 1995).

The term emotional intelligence emerged in psychology in the early 90s of the last century (Salovey and Mayer 1990). It is mainly understood to mean abilities that determine the

efficiency of processing emotional information (Mayer and Cobb 2000). Emotional intelligence is composed of e.g. ability to perceive and express emotions, ability to support thinking, ability to understand and analyse emotions, and to control and regulate emotions (Mayer and Salovey 1997). Goleman (1995) defined emotional intelligence as an ability of self-control, persistence, zeal and self-motivation. It manifests itself in personal and social competencies, such as self-awareness, impulse control, motivation for taking actions, empathy and social deftness (Goleman 1998).

Studies have found the relationships between emotional intelligence viewed as a set of interpersonal and intrapersonal competencies (Bar-On 1997) and job performance (O'Boyle et al. 2011; Asrar-ul-Haq et al. 2017; Turi et al. 2017). Emotional intelligence plays a pivotal role in jobs which require frequent social contacts, understanding others and acting to meet their needs, such as health professionals (Frajo-Apor et al. 2015; Gorgas et al. 2015; Hen and Goroshit 2011; McCarthy et al. 2014;) or teachers at various levels of education (Dolev and Leshem 2016; Omid et al. 2016; Fall et al. 2013; Hen and Sharabi-Nov 2014; Kassim et al. 2016; Mouton et al. 2013; Yin et al. 2013).

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Emotional intelligence has been found to increase with age (Mayer et al. 2000; Bar-On 1997). It can be also developed through purposive actions oriented at the development of intrapersonal and interpersonal abilities, often in the form of psychological workshops (Vopel 2000). This seems to be especially justified in university students preparing for the jobs in social services. The studies have shown the effectiveness of using this form of interactive acquisition of competencies in the development of communication skills in nursing students (McCarthy et al. 2014) and future doctors (Bachmann et al. 2013) or empathy in students from university majors of social work (Hen and Goroshit 2011). Moreover, the studies also have shown the effectiveness of using psychological workshops in the development of emotional intelligence among teachers (Karimzadeh et al. 2012; Hen and Sharabi-Nov 2014; Dolev and Leshem 2016; Dolev and Leshem 2017). Dolev and Leshem (2016, 2017) found reinforcement in emotional intelligence abilities of the entrants. Authors also emphasized that teachers can practise emotional intelligence skills during trainings. Furthermore, the research pointed out the validity of developing emotional intelligence programs among teachers (Dolev and Leshem 2017). Positive impact of emotional intelligence training can be noticed in teacher's practice, efficiency, performance (Dolev and Leshem 2017; Turi et al. 2017).

Our previous study (Kuk et al. 2015) also demonstrated increased emotional intelligence and social competences in Polish students of physical education following a 32-h psychological workshop.

Therefore, the findings of previous studies allow for expectation of increases in emotional intelligence in students participating in psychological workshops aimed to improve intra- and interpersonal competencies. However, the question arises whether these changes occur similarly in all participants. One of the potentially critical factors is sex, as women tend to be characterized by higher emotional intelligence (Ciarrochi et al. 2000; Mayer et al. 1999; Mayer and Geher 1996; Schutte et al. 1998). Age also seems to be important. For example, Hen and Goroshit (2011) found improvements in emotional intelligence only in university students in the last years of the university courses in social work. An important learning factor in psychological workshops is interactions between participants (Vopel, 2000). Therefore, it can be expected that the level of social competencies and abilities to control emotions somehow determines the effects of participation in workshops on mental properties of individuals. The importance of current psychological well-being of the participants also cannot be excluded.

The aim of this study was to determine changes in the emotional intelligence of university students who participated in psychological workshops “Communication - Forgiveness - Love” and their predictors. The changes were expected to be found in personal factors (age, sex, university course level),

social competencies, emotional control and mental status of the participants.

Method

Participants

The study examined 30 university students (including 12 men and 18 women) of the first-cycle ($n = 18$) and second cycle ($n = 12$) studies in physical education from the Józef Piłsudski University of Physical Education in Warsaw aged 19 to 24 years ($M = 21,00$; $SD = 1838$). The participants volunteered to take part in psychological workshops on problems of interpersonal communication, forgiveness and love that were not included in academic curricula. The workshops were organized as extracurricular activities.

Procedure

The study was planned within a quasi-experimental design that evaluated pretest-posttest values of emotional intelligence (the dependent variable). SPSS Statistics Version 24 were used. The intervention was aimed to improve the ability to control emotional states, modify cognitive patterns and expand the array of communicational behaviours in students who are expected to become physical education teachers and coaches. It was organized in the form of workshops prepared by psychologists who are employees of the Józef Piłsudski University of Physical Education in Warsaw.

The first aim of the workshops “Communication in light of experienced feelings and emotions” was to identify intrapsychic processes, such as emotions, feelings and cognitive patterns which underlie the interpersonal communication. The students learnt e.g. active listening skills, using the Me messages, replacement of You messages into Me messages, and overcoming barriers to communication. They also learnt to read non-verbal messages, distinguish between assertive and submissive or aggressive behaviours while assertive behaviours were instilled.

During the Forgiveness part of the workshops, a model used to identify and solve conflict situations was presented. Students recognized their own coping strategies and familiarized with the method of six steps in problem solving. The phases of the forgiveness process were analysed with respect to their own experiences and using the examples from literature and films.

The third workshop, The Need for Love, was devoted to the process of love development into mature love. The participants learnt different types of love and various languages to express feelings. They made self-assessment of their attitudes towards love and love language. The problems of emotional

codependency and building a constructive self-image and self-esteem were also discussed.

The workshops were organized into three-weekend blocks from November 2016 to May 2017, with each workshop held on Saturdays and Sundays for 12 h and total duration of the workshops of 36 hours.

Tools

The Popular Questionnaire of Emotional Intelligence (*Popularny Kwestionariusz Inteligencji Emocjonalnej, PKIE*) designed by Jaworowska, Matczak, Ciechanowicz, Stańczak & Zalewska (Jaworowska and Matczak 2005) was used to examine emotional intelligence. The PKIE consists of 94 items of self-descriptive nature. Using a scale of one to five points, the participants assess the degree to which each statement relates to them. The score in the questionnaire can be computed using four factor scales: (1) acceptance, expressing and using the person's own emotions in action, (2) empathy, (3) control (also cognitive) over the person's own emotions, and (4) understanding and awareness of emotions, and the total score. Reliability of the total score is very high (Cronbach's $\alpha = 0.90$), whereas reliability of individual scales ranges from 0.70 to 0.80. Validity was confirmed through analyses of factors and correlations with the *Emotional Intelligence Questionnaire (INTE)*. Examinations of emotional intelligence were performed during recruitment of volunteers and directly after the first, second and third workshops.

Furthermore, other inventories were used: *the Social Competence Questionnaire (Kwestionariusz Kompetencji Społecznych, KKS)* by Matczak (2001), *the General Health Questionnaire (GHQ-28)* by Goldberg and Williams (2001) and *the Courtauld Emotional Scale* (Juczyński 2009).

The questionnaire developed by Matczak (2001) is composed of 90 statements, including 60 diagnostic and 30 non-diagnostic items. The respondents evaluate the effectiveness of each activity on a scale from 1 to 4. Three dimensions are used: competencies that determine the effectiveness of behaviours in intimate situations, during social exposure and those that require being assertive. A total index of social competencies is also computed. The tool is characterized by satisfactory reliability and validity. Cronbach's α in the group of university students ranges from 0.76 to 0.89, whereas internal stability indices range from 0.71 to 0.85.

The General Health Questionnaire GHQ-28 by Goldberg and Williams (2001) is used to evaluate mental status. It is composed of 28 items in 4 subscales: somatic symptoms, anxiety and insomnia, social dysfunction and depression symptoms. A total score can also be computed. The tool is characterized by high internal consistency and satisfactory absolute stability. Cronbach's α obtained from various studies ranged from 0.82 to 0.93. Test validity was confirmed using

the intergroup comparison method and factor analyses of the GHQ-28 version.

The Courtauld Emotional Scale (CECS) designed by Watson and Greer (1983) is composed of 21 statements that allow for obtaining a general score referring to emotion control and three subscales relating to control (suppression) of anger, depression and anxiety. Reliability of the scale was evaluated by estimation of its internal consistency and absolute stability. The internal consistency index (Cronbach's α) was 0.80 for anger control, 0.77 for depression control, 0.78 for anxiety control and 0.87 for total emotion control index. Stability indices of the subscales ranged from 0.36 to 0.49 (Juczyński 2009).

All participants gave their written consent to participate in the research. The research project was approved by the Senate's Research Bioethics Commission in the Józef Piłsudski University of Physical Education in Warsaw. The research was conducted in accordance with the Helsinki Declaration on human research.

We used the non-parametric Friedman test for multiple dependent samples and the non-parametric Wilcoxon signed-rank test (the each with each comparison) to establish the differences between the measurements of emotional intelligence. Furthermore, the stepwise regression analysis was employed. The statistical significance of the results was set at $p = .05$.

Results

Table 1 presents the results for all measurements of emotional intelligence. The results of the Friedman test reflect a significant differentiation of two dimensions: acceptance and understanding of emotions and total score. Differences in the emotional control dimension reached the level of a tendency.

More detailed information is provided by comparison of the measurements using the "each with each" method. It suggests that the dynamics of changes differs depending on the emotional intelligence dimension. The highest differences were found for understanding emotions. In this aspect, no changes were observed after the first workshop, whereas after the second and the third, students demonstrated improved understanding emotions compared to the situation before the workshops. Understanding emotions after the second and the third workshops was also better than after the first one. No significant changes were observed between the second and the third workshops.

Furthermore, no significant differences in acceptance of emotions were found between the measurement before all the workshops and after the second and next workshops. The analysis of means demonstrated an insignificant decline of the results on a scale of acceptance of emotions after the first workshop. This decline was followed by an insignificant

Table 1 Changes in emotional intelligence in workshop participants ($n = 30$)

	Before the workshop (1) <i>M</i> ± <i>SD</i>	After the first workshop (2) <i>M</i> ± <i>SD</i>	After the second workshop (3) <i>M</i> ± <i>SD</i>	After the third workshop (4) <i>M</i> ± <i>SD</i>	Friedman test (<i>p</i>)	Wilcoxon test (<i>p</i>)					
						1–2	1–3	1–4	2–3	2–4	3–4
Accepting emotions	55.43 ± 8.08	54.43 ± 6.98	55.87 ± 10.03	57.93 ± 6.32	8.758 .033	.471	.595	.298	.062	.002	.567
Empathy	70.30 ± 7.17	71.10 ± 9.11	69.60 ± 11.65	73.00 ± 7.23	3.313 .346	.269	.351	<.001	.770	.118	.130
Emotional control	32.23 ± 7.33	33.10 ± 6.28	34.80 ± 6.87	34.30 ± 6.53	7.078 .069	.508	.043	.086	.060	.147	.492
Understanding emotions	31.50 ± 4.70	32.70 ± 6.20	35.63 ± 7.91	35.10 ± 6.58	22.388 <.0001	.165	.001	<.001	.003	.008	.839
Emotional intelligence – sum	340.33 ± 27.34	343.33 ± 26.12	348.97 ± 39.29	356.80 ± 30.23	12.522 .006	.496	.042	.022	.018	.001	.585

M - arithmetic average, SD - standard deviation, *p* - level of significance, *italics* indicates the level of the trend

increase in the readiness to accept emotions. The scores obtained after the last workshop were significantly higher than after the second session. However, the difference in the measurement after the second and the third workshops is not statistically significant.

On a scale of emotional control, the difference between the first and the third measurements is significant, with improved emotional control observed in students following the second workshop. The differences between the first and the fourth and between the second and the third measurements revealed a pattern of a tendency, with slightly greater ability to control emotions found in students in subsequent measurements. The scores recorded in the last measurement did not differ significantly from the two previous results.

The smallest differences were observed on the empathy scale. Insignificant fluctuations were found, with the only significant difference observed between the first and the last measurement (greater empathy found after the last workshop).

Changes in total score were more unequivocal. It gradually increased in subsequent measurements. However, the differences between the first and the second and between the third and the last measurement were not statistically significant.

Table 2 presents the results of the last step of the stepwise regression analysis. The dependent variables were indices of change in each dimension of emotional intelligence computed

by subtracting of the first from the last measurement results. The factors were personal variables (sex, age, level of university studies), indices of social competencies (*KKS*: competencies during social exposure, intimate situations and those that require being assertive), psychological difficulties (*GHQ-28*: somatic symptoms, anxiety and insomnia, social dysfunction, depression symptoms) and ability to control (suppress) emotional states (*CECS*: control of depression, anger and anxiety) before the workshops.

The most important predictor of changes in emotional intelligence was ability to control depression. It allows for predicting the increase in acceptance of emotions and emotional control, with greater changes expected in people who are more willing to suppress manifestations of depression. On the other hand, the level of depression symptoms represented a predictor of the increase in emotional control. Greater increase in emotional intelligence should be expected in students who show more depression symptoms.

The increase in empathy can be predicted at the level of 35% based on the age, with greater changes expected in younger participants of workshops. A negative predictor of the total index of emotional intelligence was the level of competencies in situations of social exposure: greater changes can be expected in students who showed lower competencies in the first measurement in such situations.

Table 2 Predictors of changes in emotional intelligence in workshop participants

Dependent variable	Predictor	Beta	Model (R^2 , F, <i>p</i>)
Increased acceptance of emotions	Depression suppression (<i>CECS</i>)	.423	.150; 6.103; .020
Enhanced empathy	Age	-.606	.345; 16.251; <.001
Greater emotional control	Depression symptoms (<i>GHQ-28</i>)	.269	.245; 5.713; .009
	Depression suppression (<i>CECS</i>)	.282	
Improved understanding emotions	–	–	–
Increased emotional intelligence	Competencies in situations of social exposure (<i>KKS</i>)	-.492	.215; 8.931; .006

Beta – vector of regression coefficient, R^2 - coefficient of determination, F- result of the analysis of variance, *p*- level of significance

Interestingly, no predictors of understanding emotions were identified although the most regular changes were observed for this component of emotional intelligence.

Discussion and Implications

Our findings demonstrate significant changes in emotional intelligence in university students who participated in psychological workshops devoted to the problems of interpersonal communication, forgiveness and love. They were most noticeable in the total emotional intelligence index, which gradually increased in consecutive measurements. These results are consistent with those obtained in the previous study of Polish university students of physical education course, which found improved emotional intelligence in participants of psychological workshops. The increases were maintained for half a year from completion of the workshops (Kuk et al. 2015). Hen and Goroshit (2011) also documented increased emotional intelligence in university students in social work participating in the course named *Being Therapist*.

Because our examinations were performed using a single-group design without a control group, it cannot be excluded that the changes resulted from the developmental processes which were independent of the intervention. However, it seems to be unlikely that spontaneous and significant changes in emotional intelligence would have occurred over such a short and relatively uniform (in terms of social experiences) period of time. This presumption is confirmed by the fact that in our previous study, university students of physical education from similar age group in a similar period of time showed no significant spontaneous changes in emotional intelligence (Kuk et al. 2015). A multi-layer “investment model” of the development of emotional competencies assumes that emotional development depends on various processes of biologically programmed modulation and behavioural strategies of self-control, based on cognitive and associative learning and planned conscious self-control (Zeider 2008; Zeider et al. 2003).

The changes observed in the participants of psychological workshops also varied depending on an emotional intelligence dimension. The biggest differences between the measurements were observed in understanding emotions, which significantly improved, especially after the second workshops. Interestingly, the problems of identification of emotions and feelings were the topic of the first workshop. However, no statistically significant increase in the ability of understanding emotions was found after this workshop. It is likely that some time is required for the assimilation of new experiences to occur. Furthermore, it cannot be excluded that

changes occur through accumulation of experiences of the participants during subsequent workshops.

Another dimension of emotional intelligence where statistically significant differentiation in measurement results was found was acceptance of emotions. In this case, the second workshop, devoted to problem solving, coping in difficult situation and forgiveness with respect to internal experiences, seems to be critical. It remains unclear to which degree the differences in the dynamics of changes result from the contents of subsequent workshops and to which degree they result from the differences in psychological importance of the components of emotional intelligence. These problems require further research in which the effect of workshops with different contents would be compared.

No significant changes in empathy were found in workshop participants. It seems that this was caused by the contents of the workshops, focused more on the improvement of emotional self-awareness and ability to communicate than on the development of the ability to understand other people and feel empathy. It can be expected that introduction into the workshop exercises oriented at the development of empathy would also lead to changes in this component of emotional intelligence. Results of previous research in this field are inconsistent and have shown both the increase (e.g. Grant et al. 2014; Hen and Sharabi-Nov 2014; McCarthy et al. 2014) and no changes in empathy (e.g. Hen and Goroshit 2011) in workshop participants.

The results of regression analysis reveal that greater increase in emotional intelligence in the dimension of emotional control and acceptance of emotions can be expected in students characterized by stronger tendencies for suppressing depression in situations of emotional load. In the first case, the dependent variable (control of emotions) and predictor (tendency for suppressing depression) seem to be relatively synonymous. Tendency for suppressing the feelings of depression can be approached as one of the manifestations of emotional self-control. Participation in workshops devoted to recognition of emotions and coping with them substantially increased the ability to control emotions in those students who were more willing to suppress the feelings of bad mood and depression before the workshop, thus intensifying the previous individual dispositions.

The dimension of acceptance of emotions is related to acceptance, expressing and using person's own emotions, that is, taking actions which are somehow contrary to suppression of external manifestations of emotions. Our findings suggest that students participating in workshops who are more willing to suppress feelings of depression increased their ability to accept their own emotional experiences and express them. Therefore, they overcame the tendencies for suppressing external manifestations of emotions. This change seems to improve psychological adaptation.

The increase in emotional control in students participating in workshops can be predicted based on the level of depression symptoms. Greater improvements in ability to control emotions should be expected in people who are in worse psychological state and in such cases training is more effective. Obviously, the linkages between emotional intelligence and depression are more complex. On the one hand, training of emotional intelligence can be beneficial to people who experience depression. On the other hand, it can be the tool to promote mental health and reduce the intensification of depression symptoms (Chow et al. 2011). In a prospective study, Gomez-Baya et al. (2016) analysed the relationships between the perceived emotional intelligence and depression symptoms in youth. Following a year of observation, greater emotional intelligence was found to be linked to lower intensification of depression symptoms. The authors pointed to the need for the development of programmes to prevent depression in the period of adolescence through promotion of emotional intelligence.

Another factor that allows for prediction of the degree of changes in emotional intelligence was age, which represented a negative predictor of enhanced empathy. Greater increases can be expected in younger students. Opposite findings were obtained by Hen and Goroshit (2011) in a study of university students of a social work course. These researchers documented progressive changes in indices of emotional intelligence only in students from higher years of studies. It remains unclear what may have caused such discrepancies. The university major can be a factor, as can be the individual traits of students that are one of the determinants of choosing the major, or differences in the contents of psychological workshops. The results of comparative studies of adults at different age are also contradictory. Age was not a differentiating factor in emotional intelligence measured by means of the INTE questionnaire (Jaworowska and Matczak 2001). Furthermore, Bar-On (1997) found a gradual increase in emotional intelligence indices in age groups of 16–19, 20–29, 30–39 and 40–49 years.

Greater increases in the total emotional intelligence score can be expected in university students with poorer competencies in the situation of social exposure. The way the relations between emotional intelligence and social intelligence (or social competencies) are approached depend substantially on the definition of these terms. Part of abilities included in competencies of emotional intelligence is approached as components of social intelligence (for example, ability to recognize others' feelings, empathy, emotional control) (Sadowska and Steuden 2005). Results of examinations in the Polish population (Jaworowska & Matczak 2001) indicate that the higher the level of emotional intelligence the better abilities that determine functioning in social situations. The relationship between these variables is probably bilateral. On the one hand, social contacts impact on the development of human emotional sphere (Greenberg and Snell 1999) while on the other,

emotional intelligence has an effect on interpersonal contacts (Eisenberg et al. 1999).

Although women are usually characterized by higher emotional intelligence (Ciarrochi et al. 2000; Mayer et al. 1999; Mayer and Geher 1996; Schutte et al. 1998), sex was not a factor that allowed for prediction of changes in emotional intelligence.

The findings of our study suggest that emotional intelligence can be developed through participation in psychological workshops. According to Por et al. (2011), the reversely proportional correlation between emotional intelligence and level of stress justifies measures taken to develop emotional intelligence in university students. Usefulness of such measures to develop emotional intelligence in adolescents was also emphasized by Vancu (2014). The researcher argued that deficiencies in this field may lead to intensification of stress reactions caused by the lack of adequate coping strategies.

According to Baracsi (2016), teacher education programmes should incorporate the problems of emotional intelligence and stress. Result of examinations of Hungarian teachers demonstrated that their weakest link is awareness of emotions and controlling them. Polish teachers, who showed greater emotional intelligence, were perceived by students more positively and had better relations with them (Barłózek 2013). Importance of doctor's empathy in working with patients was analysed by Qayyum (2016). This scholar found a decline in this component of emotional intelligence in medical students. He also observed the need for developing abilities of future doctors to cope with their own feelings and understanding patients' feelings.

Emotional intelligence is related to stronger self-esteem (Guszkowska et al. 2016) and more effective coping with stress (Wang 2016), and it represents an important predictor of mental toughness (Cowden 2016). A positive correlation between emotional intelligence and mental toughness suggests that it can become a potential objective of the education oriented at the development of mental health potential (Frajo-Apor et al. 2015). Our study suggests that psychological workshops, included as an option in the university course curricula, can offer an efficient tool to develop emotional intelligence. Unfortunately, it remains unclear how long such changes can be maintained. Further research is needed, with changes in longer time perspective monitored in addition to documentation of the direct effects. If they turn out to be established, it can be expected based on the results of previous studies (Kassim et al. 2016; Wahyuddin 2016) that emotionally intelligent students in university courses of physical education would not only cope better with stress during the period of studies but would become better and more satisfied teachers in the future.

Conclusion

Psychological workshops can be an effective method to improve emotional intelligence of university students who prepare to the profession of a physical education teacher or a coach. The benefits of the workshops are likely to vary depending on psychological traits of the participants (for example, mental conditions, tendencies for suppressing emotions and social competencies) and their age. Further examinations to monitor long-term effects of psychological workshops are needed.

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Compliance with Ethical Standards

Declaration of Conflicting Interests The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication on this article.

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