ASSOCIATION OF THE FIVE-FACTOR MODEL PERSONALITY TRAITS AND OPIOID ADDICTION TREATMENT OUTCOME

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SUMMARY

Many patients with opioid addiction continue to use opioids during and after treatment, and their career of drug taking is usually punctuated by repeated treatment admissions and relapses. Personality traits are considered risk factors for drug use, and, in turn, the psychoactive substances impact individuals' traits. The most widely used system of traits is called the Five-Factor Model (FFM). Studies have shown that persons who use heroin are consistently depicted as high on Neuroticism and higher Extroversion, also they are described as more impulsive and less sociable. Those who maintain abstinence are characterized by a higher Agreeableness and Conscientiousness. Treatment programs for opioid addiction vary substantially in treatment processes, and an early identification of patients traits that address their strengths and weaknesses within specific treatment settings could be useful in decreasing the possibility of relapse.

Key words: *personality traits - opioid addiction - treatment outcome - Five-Factor Model*

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Introduction

Opioid addiction is often characterized as a long-term, chronic condition with periods of remission and relapse. Despite different treatment approaches many patients with opioid addiction continue to use opioids during and after treatment, and their career of drug taking is usually punctuated by repeated treatment admissions and relapses (Stark 1992).

Personality traits reflect people's characteristic patterns of thoughts, feelings, and behaviours. Personality traits imply consistency and stability but critics of the trait concept argue that people do not act consistently from one situation to the next and that people are very influenced by situational forces (Diener 2017). Personality traits are considered risk factors for drug use, and, in turn, the psychoactive substances impact individuals' traits (Terracciano 2008). Personality traits have been correlated with coping styles and may be viewed as facets of personality (Moffett 1996). Cognitive-behavioural approaches have been structured to improve coping skills in many treatments of drug addiction.

Assessing personality traits

The most widely used system of traits is called the Five-Factor Model (FFM) of personality which covers the five major traits that define human personality across cultures included in the acronym OCEAN: Neuroticism (N), the tendency to experience negative emotions such as anxiety and depression; Extraversion (E), the tendency to be sociable, warm, active, assertive, cheerful, and in search of stimulation; Openness to experience (O), the tendency to be imaginative, creative, unconventional, emotionally and artistically sensitive; Agreeableness (A), the dimension of interpersonal rela-

tions, characterised by altruism, trust, modesty, and cooperativeness; and Conscientiousness (C), a tendency to be organised, strong-willed, persistent, reliable, and a follower of rules and ethical principles (McCrae 2005; Terracciano 2006). Systematic research on the FFM has revealed that all five factors have strong genetic bases and are enduring disposition even after decades (Terracciano 2006), but personality traits show modest maturational changes we see it as tendency to decline in N, E, and O, and to increase in A and C (McCrae 2003). Personality traits could be assessed by self-reports or the ratings of informants who know the assessed person (McCrae 2003). It is generally believed that traits directly influence behaviour (Matthews 2009).

Personality traits are predictors of important outcomes (Paunonen 2003) including a variety of health risk behaviour (Terracciano 2004; Trobst 2002), well-being (Costa 1980), emotional experience (Terracciano 2003), academic performance (Chamorro-Premuzic 2003), vocational interests (Gottfredson 1993), job performance (Barrick 1991), marital stability and satisfaction (Kelly 1987), and political preference (Caprara 2004). Some trait theorists argue that there are other traits that cannot be completely captured by the Five-Factor Model. Thus, one major debate in the field concerns the relative power of people's traits versus the situations in which they find themselves as predictors of their behaviour (White 2017). The fact that there are different ways of being, for example, extraverted or conscientious, shows that there is value in considering lower-level units of personality that are more specific than the Big Five traits. Each of five factors is hierarchically defined by specific facets, which can provide a more in-depth description of drug users' personalities. For example, impulsivity is a facet of Neuroticism. Impulsivity related

personality traits such as sensation-seeking, novelty seeking, reward-sensitivity and behavioural disinhibition, are strongly linked to adolescent and adult substance use and misuse. Trait impulsivity predicts behavioural under-control and spontaneity in a variety of settings (White, 2017). The data suggest that personality influences treatment outcomes and yet these individual differences are generally not addressed in treatment (Staiger 2007).

Personality traits and heroine abuse

Heroin users are consistently depicted as high on Neuroticism (Brooner 2002, Kornor 2007). Persons who are high on Neuroticism are described as anxious, vulnerable, self-conscious, moody, depressed, irritable (Srivastava 2015), prone to see situations as stressful (Ebstrup 2011) and more vulnerable to stress (Matthews 1999). Many studies show an association of heroin use with high Extraversion and high Psychoticism, but this association appears to be less robust (Kornor 2007, Tremeau 2003). Inconsistencies in the association of personality and drug use are due to several factors, such as differences in the personality measures used, inadequate sample sizes, and socio-cultural differences. A cross-cultural study of the similarities in the personality dimensions of heroin addicted persons has shown that personality traits among heroin addicted persons were similar across cultures in higher Neuroticism, higher Extroversion, also in higher impulsivity and lower sociability (Patalano 1998). The opiate addicted persons were also similar across cultures as being lower on emotionally stability, lower ego strength, were more insecure, more frustrated and tended to disregard rules (Patalano 1998). A follow-up study has shown that personality traits measured with the Eysenck Personality Inventory did not contribute with the stay in treatment after 12 -months. Opioid addicted persons differed from normal controls mostly in their Neuroticism score. The Neuroticism score of patients included in methadone maintenance program converged towards the score of normal controls (Tremeau 2003).

In study of Betkowska FFM personality traits were compared in patients maintaining abstinence and relapsed patients. After one year follow-up, the group maintaining abstinence is characterized by a higher Agreeableness and Conscientiousness, which is beneficial for cooperation with others as well as undertaking and realizing tasks. Moreover, lower constituent values of Neuroticism were linked to higher adaptability and greater therapy participation than in a relapsed group (Betkowska-Korpala 2012). Possible reason for Neuroticism as a risk factors for relapse is that neurotic individuals usually do not solve problems actively by focusing on problem, but focus on their emotions, which in most of the situation is not the optimal solution to the problem (Matthews 1998). Accumulation of all this negative emotion and lack of

experiences of successfully resolving problems could result in early termination of treatment. Life of abstainer is full of adjusting to changes in life what is problematic for patients with neuroticism (Cox-Fuenzalida 2004).

Extroversion is a personality trait that predicts physiological and emotional responses to rewards (White 2017). Extroverted persons are described as sociable, energetic, adventurous and outgoing (Srivastava 2015). Although these features are mostly socially desired and positive, can be a disadvantage at maintaining abstinence. For example, our patients, when completing hospital treatment, usually have problems with seeking suitable company for them. Before treatment many of them had company of drug users, with who they no longer can socialize without risk of relapse. Their need for socializing is high, but at the same time they do not yet have more suitable company for themselves. That could partially explain they succumb to socializing with "old company", which is most often followed by old behavioural patterns and eventually using drugs. It is known that extraverted individuals more often seek situations in which they feel more positive affect (McCrae 1991). It was reported that abstainers try to establish new social connections often report of feeling of not belonging, feeling of subconsciousness about themselves, they cannot relate to nonusers since they did not achieve as many life goals as people who did not suffer from addiction (McCrae 1991). It could be speculated that since extraverted individuals strive to feel positive emotions, they most likely socialize with somebody who is not demanding, and at the same time offers quick satisfaction of their need to feel good.

Conscious patients usually follow instructions of doctors and therapists, therefore it could be expected they have better treatment outcome. We can expect that heroin users scored lower on Conscientiousness what can be associated negatively with the treatment outcome (Terracciano 2008). Curiosity and tendency to think differently than others could be the main reasons for relapse. Therefore persons who are high on Openness do not prepare themselves for some situations (Srivastava 2015). Since they like challenges they could even expose themselves to risk situations for drug use, just to see, if they are strong enough to overcome this situation (Ackerman 1997).

Conclusions

Studies have shown that persons who use heroin are consistently depicted as high on Neuroticism and higher Extroversion, also they are described as more impulsive and less sociable. Those who maintain abstinence are characterized by a higher Agreeableness and Conscientiousness. Programs for opioid addiction vary substantially in treatment processes, and an early identification of patients traits that address their strengths and weaknesses within specific treatment settings could be useful in decreasing the possibility of relapse.

References

1. *Ackerman PL & Heggestad ED: Intelligence, personality, and interests: Evidence for overlapping traits. Psychol Bull 1997; 121: 219-245.*

2. *Barrick MR & Mount MK: The Big Five Personality Dimensions and job performance: A meta-analysis. Personnel Psychology 1991; 44:1-26.*

3. *Betkowska-Korpala B. Personality in the big five model and maintaining abstinence after one year follow-up. Psychiatr Pol 2012; 46:387-399.*

4. *Brooner RK, Schmidt CW & Herbst JH (Eds.). Personality trait characteristics of opioid abusers with and without comorbid personality disorders (2nd ed.) Wachington DC: American Psychological Association.*

5. *Caprara GV & Zimbardo PG: Personalizing politics: a congruency model of political preference. Am Psychol 2004; 59; 581-594.*

6. *Chamorro-Premuzic T & Furnham A. Personality traits and academic examination performance. European Journal of Personality 2003; 17: 237-250.*

7. *Costa PT & McCrae RR. Influence of Extraversion and Neuroticism on Subjective Well-Being: Happy and Unhappy People. J Pers Soc Psychol 1980; 38: 668-678.*

8. *Cox-Fuenzalida LE, Swickert R & Hittner JB. Effects of neuroticism and workload history on performance. Personality and Individual Differences 2004; 36: 447-456.*

9. *Diener E & Lucas RE. Personality traits. DEF publishers, Champaign, 2017.*

10. *Ebstrup JF, Eplpv LF, Pisinger C & Jorgensen T. Association between the five factor personality traits and perceived stress: Is the effect mediated by general self-efficacy? Anxiety, stress & Coping 2011; 24: 407-419.*

11. *Gottfredson GD, Jones EM & Holland JL. Personality and vocational interests: The relation of Holland's six interest dimensions to five robust dimensions of personality. Journal of Counseling Psychology 1993; 40: 518-524.*

12. *Kelly EL & Conley JJ. Personality and compatibility: a perspective analysis of marital stability and marital satisfaction. J Pers Soc Psychol 1987; 2: 27-40.*

13. *Kornor H & Nordvik H. Five-Factor model personality traits in opioid dependence. BMC Psychiatry 2007; 7: 37.*

14. *Matthews G & Campbell SE. Task-induced stress and individual differences in coping. Proceedings of the Human Factors and Ergonomics Society 1998; 42: 821-825.*

15. *Matthews G, Deary IJ & Whiteman MC. personality traits (3rd ed.). Cambridge University Press, Cambridge, New York: 2009.*

16. *Matthews G, Joyner L, Gilliland K, Campbell S, Falconer S & Huggins J. Validation of a comprehensive stress state questionnaire: Towards a state «big three»? In Mervielde I, Deary IJ, DeFruyt F, Ostendorf F. Personality psychology in Europe 1990; 7: 335–350.*

17. *McCrae RR & Costa TP. Personality in Adulthood: A Five-factor Theory Perspective: Guilford Press, 2003.*

18. *McCrae RR & Terracciano A. Universal features of personality traits from the observer's perspective: data from 50 cultures. J Pers Soc Psychol 2005; 88: 547-561.*

19. *Moffett LA, Steinberg SL & Rohde P. personality assessment of substance-dependent patients in a therapeutic community. J Subst abuse Treat 1996; 13: 127-134.*

20. *Patalano F: Cross-cultural similarities in the personality dimensions of heroin users. J Psychol 1998; 132:671-673.*

21. *Paunonen SV: Big Five factors of personality and replicated predictions of behavior. J Pers Soc Psychol 2003; 84: 411-424.*

22. *Srivastava S: Measuring the Big Five Personality Factors. Retrieved 6. January, 2015, from http://pages.uoregon.edu/sanjay/bigfive.html*

23. *Staiger PK, Kambouropoulos N & Dawe S: Should personality traits be considered when refining substance misuse treatment programs? Drug Alcohol Rev 2007; 26:17-23.*

24. *Stark MJ: Dropping out of substance abuse treatment: A clinically oriented review. Clinical Psychology Review 1992; 12:93-116.*

25. *Terracciano A & Costa PTJr: Smoking and the Five-Factor Model of personality. Addiction 2004; 99:472-481.*

26. *Terracciano A, Lockenhoff CE, Crum RM, Bienvenu OJ & Costa PTJr: Five-Factor Model personality profiles of drug users. BMC Psychiatry 2008; 8: 22.*

27. *Terracciano A & McCrae RR: Cross-cultural studies of personality traits and their relevance to psychiatry. Epidemiol Psichiatr Soc 2006; 15: 176-184.*

28. *Terracciano A, McCrae RR, Hagemann D & Costa PTJr: Individual difference variables, affective differentiation, and the structures of affect. J Pers 2003; 71: 669-703.*

29. *Tremeau F, Darreye A, Leroy B, Renckly V, Ertle S, Weibel H et al.: Personality changes in opioid-dependent subjects in a methadone maintenance treatment program. Encephale 2003; 29(4 Pt 1): 285-292.*

30. *Trobst KK, Herbst JH, Masters HL & Costa PT: Personality Pathways to Unsafe Sex: Personality, Condom Use, and HIV Risk Behaviors. Journal of Research in Personality 2002; 36:117-133.*

31. *White TL: Beyond sensation seeking: a conceptual framework for individual differences in psychostimulant drug effects in healthy humans. Current Opinion in Behavioral Sciences 2017; 13:63-70.*

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