**REVIEW**

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Professional field 3.2. Psychology

for the degree of Doctor of Science in the professional field

3.2. Psychology (General Psychology)

with candidate Elena Hristova Psederska

for her dissertation on "Impulsivity and negative affectivity in opiate-dependent individuals in different stages of remission".

# Significance of the research problem in scientific and applied terms

The neurocognitive and affective functioning of opiate addicts in remission is studied. Control for confounding variables that preclude unambiguous interpretation of previous data in the field, such as type of dependence (mono- and polysubstance dependence), duration of remission, effects of pharmacological treatment, and methodological problems in measurement using behavioral tasks of impulsivity and negative affectivity in addicts. The focus on the core dimensions of Addiction Neuroclinical Assessment (ANA) allows the data from this study to be used to better understand both the factors for developing opiate dependence and to assess the risk of relapse thereafter. This makes the scientific and applied contributions of this thesis undeniable.

# Aims and objectives of the dissertation

This study aims to examine the long-term effects of opiate dependence on two of the neurofunctional domains of psychoactive substance dependence disorders and to assess how the duration of remission (from 30 days to 9 years) alters functioning in these domains, specifically impulsivity and negative affectivity. These were examined in a carefully selected sample of opiate mono-addicts in remission. For this purpose, a number of instruments that are widely used to assess the neurofunctional domains of executive functioning and negative affectivity were adapted in a Bulgarian sample.

# Degree of knowledge of the state of the problem and consistency of the literature used

The mechanisms in the transition from impulsive to compulsive patterns of use of different psychoactive substances are well distinguished. Controversies in existing research are highlighted and the need for strict control of well-defined variables, namely polydependence, pharmacological treatment and duration of remission, is brought out. However, this analysis does not reach an understanding of the controversies that outlines expected outcomes and the research remains largely exploratory. However, this is the approach of most addiction research and this PhD thesis fits well within the field.

**Availability of well developed theoretical model of the study**

The theoretical review substantiates the study goals and the need to investigate the stated hypotheses with mono-dependent substance users. It seeks to assess two of the neurofunctional domains that are impaired in addiction, namely executive functioning and negative performance. It is not clear why motivational salience is neglected, given that the passage through the various stages of addiction is explained in part through the specific representation of the psychoactive substances that addicts construct. The narrowing of executive functions to impulsivity and the exclusion of other correlates of addiction such as WM for example, also remains theoretically unclear. In contrast, a careful analysis of the components of impulsivity and negative affectivity that correlate or could correlate with qualitatively different personality, neurocognitive, and affective profiles in psychoactive substance dependence is presented. Relevant research is presented and the need to measure well-defined components of impulsivity and negative affectivity is outlined.

# Correct citation of a representative number of authors

524 sources were cited in English and 7 in Bulgarian. The majority of them are from the last 20 years. They address a wide range of issues related to factors that lead to the development of addiction, diagnostic criteria, personality, psychiatric and cognitive correlates of addiction, and therapeutic approaches. The referencing is correct and according to the standards. Academic ethics have been followed.

**Consistency of the chosen methodology and research methodology with the stated aims and objectives of the thesis**

The data were processed in two ways in alignment with the two main objectives of the study. The first compares the performance of opiate-dependent participants in “short” and “long” remission with that of participants in the control condition, and the second looks for the effect of duration of remission on the examined components of impulsivity and negative affectivity.

In the first set of analyses, the duration of remission was defined in terms of "short" and "long" categories, recoding the continuous variable "number of days in remission" into a discrete (categorical) variable. This discretization of the variable is not justified theoretically, empirically, pragmatically or statistically, although it is repeatedly discussed that different studies refer to "short" and "long" remission periods of different length[[1]](#footnote-1). Furthermore, neurobiological changes in different neurofunctional areas (executive functions and negative affectivity) may develop differently over the course of remission, and this discretization of periods may reduce sensitivity to possible changes in individual neurofunctional areas. What, then, are the reasons for this split according to the duration of remission? Finally, the control group differed in fluid intelligence and years of education from the groups of opiate addicts in "short" and in "long" remission. Typically, comparing different clinical and norm groups in a between-group design requires equating of the groups or statistical control for important correlates. Fluid intelligence is a predictor for a number of variables that are associated with executive functions. Why, then, were these variables not controlled for in the design or data analysis in the test of hypotheses 1, 2, and 3 ( Aim 1)? What of the reported results would remain after such control?

Regression analyses planned to test Aim 2 showed fewer risky choices and a stronger preference for alternatives that lead to long-term gains in situations with clear and uncertain probabilities, as well as decreases in self-reported personal impulsivity and situational anxiety with increasing duration of remission (in days). Overall, remission length explained a small percentage of the variance in these measures.

**Availability of own input in the collection and analysis of empirical data**

The research data in this thesis were collected over a period of 10 years by Elena Psederska in a team from the Bulgarian Institute of Addictions under the supervision of Assoc. Prof. Dr. Jasmine Vassileva. The research took place in 2 sessions of three and a half hours each. It includes a screening interview and two sessions with self-assessment and cognitive tests. The work that has gone into collecting the empirical data for this PhD is enormous, as well as the analysis of the data. Six independent and 13 dependent variables were examined. Preliminary requirements of different statistical analyses to the variables analyzed have been checked, the results are described comprehensibly.

# Contributions

The study has clear contributions related to sample purity and the adaptation of 7 self-report instruments of components of impulsivity and negative affectivity in samples of psychoactive substance dependent individuals. Two of the major neurofunctional domains of disorder were assessed in a sample of opiat-dependent individuals who had been in remission for 30 days to 9 years. Thus, the research in Elena Psederska's doctoral dissertation goes beyond previous attempts in the field by offering a more complete picture of the dynamics in impulsivity and negative affectivity during remission.

The 43-page abstract accurately reflects the dissertation content. I accept the methodological, empirical[[2]](#footnote-2) and practical-applied contributions formulated by the doctoral candidate.

# Impact

Elena Psederska's publications related to her PhD thesis are mostly in journals indexed in WoS and Scopus (4 out of 6 publications). The number is more than the minimum required. Citations (excluding hidden citations and self-citations) up to June 1, 2022 according to WoS is 9 in total. Given that these are articles published from 2018 to 2021, the number of citations in WoS indexed journals seems impressive for a PhD student. In addition, I counted a total of 24 presentations at international (19) and national (5) scientific forums that are directly related to the research questions in this dissertation. This shows a potential impact of the findings reported in the dissertation.

# Personal qualities of the author

Elena Psederska is a warm and responsive girl. Discussions of her work in pre-defense show that she takes negative feedback as a reason to improve. She strives for high standards. 15 of her publications are in impact factor journals. She impresses with her commitment to her work. The data from this study was collected over 10 years in two sessions for each participant totaling 7 hours.

**Opinions, recommendations and comments**

I have submitted my specific comments and observations in the text of this review. I hope that Elena Psederska's enthusiasm will lead her to a more direct test of the causal relationships between the examined variance and dependence. Let us hope that Elena finds the strength to include motivational significance in this follow-up. It is involved in the formation of episodic memories associated with psychoactive substance use and in the formation of compulsive use patterns, hence in maintaining successful remission.

Conclusion

A large-scale study was conducted in a clinical sample of opiate mono-dependents. A battery of instruments was created to assess various components of impulsivity and negative affectivity. Results were carefully analyzed and published in Scopus and WoS peer-reviewed journals. The dissertation contributes in an indisputable manner to understanding the effects of psychoactive substance withdrawal on the neurocognitive and affective functioning of opiate dependent individuals in long-term remission.

I propose to the honorable colleagues of the scientific jury that we award the degree of PhD in in the professional field 3.2. Psychology to Elena Psederska for her dissertation entitled "Impulsivity and negative affectivity in opiate-dependent individuals in various stages of remission".

Date: 5.06.2022 Signiture …………….

 (Assoc. Prof. Penka Hristova)

1. E.g., “short” remission is operationalized in different studies as a period of 3-30 days or up to 6 months and long remission as over 16 months, over 2 years, etc. [↑](#footnote-ref-1)
2. While some of my questions concern some of the empirical contributions of the dissertation, the effects of remission duration on impulsivity and negative affectivity in regression analyses are original and novel to the field, and entirely enough to accept that the dissertation has its empirical contributions. [↑](#footnote-ref-2)