Risk behaviour of injecting drug users and structural factors affecting them during the 2010-2015 period

Ph.D. Thesis

Róbert Csák

Semmelweis University
Doctoral School of Pathological Sciences

Supervisor: József Rácz, MD, DSc.

Official reviewers: Bettina Pikó, MD, DSc.
Gergő Prazsák, PhD.

Head of the Final Examination Committee:
László Tringer, MD, DSc.

Members of the Final Examination Committee:
Zsuzsa Szántó, PhD
Zsuzsanna Elekes, DSc.

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1. Introduction

Injecting drug use is a research topic that has not been studied extensively in Hungary. The effectiveness of the services and interventions aiming to reduce and prevent health related harms of people who inject drugs (PWID) is an even more neglected research area.

PWIDs witnessed a significant change in the past years in Hungary. Before the emergence of new psychoactive substances (NPS) in 2010, heroin and amphetamine was the two substances that the overwhelming majority of PWIDs injected. Since then NPSs have became the dominant substances. The percentage of heroin users started to drop first, but gradually amphetamines was replaced by NPSs too. In 2015 13% of PWIDs in Hungary injected the two substances mentioned above while in 2009 the proportion of those who injected amphetamine or heroin was 95%. During this period the health risks of injecting use have increased substantially. The Hungarian National Center for Epidemiology has been studying the prevalence of HIV and HCV among PIWDs since 2006. The results showed that the prevalence of HCV doubled between 2011 and 2014. In 2014 the prevalence of HCV was 48,8% in the country (up from 24,1% in 2011), and 60,8% in the capital (34,2% in 2011).

The focus of my thesis is to analyse this phenomena, and to explore the factors beneath this increase, the factors that can influence health related risks. As I wrote my thesis from a public health perspective, I would use the term risk behaviour as a behaviour increasing the health risks of injecting drug use, namely those behaviours and practices that can increase the risk of HIV or HCV infection.

There are two big paradigms among the theories of risk behaviour. The first paradigm concentrates on the individual, and sees risk behaviour as an act that is the result of the knowledge and decisions of the individual. Studies based on this paradigm tried to explore the individual determinants of risks, and studied

how the individual's knowledge and perceptions about risks can influence the intention to avoid a given risk.

The other interpretation of risk behaviours considers the risk behaviour as an interaction between the act of an individual, the community around the individual, and the social environment. This paradigm focuses on the social determinants and the contextual factors influencing risk behaviours. Tim Rhodes's risk environment is a prominent theoretical framework of this paradigm, and it was defined by Rhodes (2002) as the space – whether social or physical – in which a variety of factors interact to increase the chances of drug-related harm. The model of the risk environment comprises two key dimensions: types of environment and level of environmental influence. The four ideal types of environment is the physical, the social, the economic and the policy environments, the two ideal levels of environmental influence is the micro level and the macro level. In the dissertation I have operationalized and described the structural factors influencing risk behaviours in Hungary, based on the definitions of risk environment available in the literature.

The micro level of the physical environment is the immediate physical environment in which drug use occurs. This physical environment in the present study is the Inner Józsefváros, which is a micro-segregate: deteriorating buildings, moving out of inhabitants with higher social status, residential and school segregation. The area could be described as an open drug scene, with substance use, injecting drug use, drug dealing, street crimes, delinquency, and property crimes. There are several shooting galleries in the area, where PWIDs use abandoned buildings to inject. In terms of health risks, these places do not possess the requirements of safe injecting.

The macro level of physical environment was operationalized as the characteristics of the drug market. The most important phenomena of the Hungarian injecting drug use scene was the emergence of NPSs – although the

phenomenon affected not only the injecting drug use but drug use in general. While in 2014 NPSs accounted for two thirds of the seizures in Hungary, the proportion of substances outside the well known, "traditional" drugs was only a few percent in seizures before 2010.

The macro level of social environment was operationalized as the attitudes in the general population toward substance users. Since 2001 several general population surveys have been carried out on the attitudes towards substance users. The results of the social distance scale test showed that substance users are the most excluded social group in the country. Besides attitudes, the coverage of syringe and needle exchange programmes (SEP) is part of the macro level of social environment also. According to the WHO SEP coverage indicator the Hungarian coverage was insufficient to prevent the spread of HIV during 2010-2015. I write about the micro level of social environment in the results section, as I used my own research to describe it.

The micro level of economic environment was described with the educational attainment, income and labour market position of the clients of the SEP. The population used the programme could be described as low educational attainment (the majority have qualifications lower than high school level), and have unfavourable labour market position (a significant proportion do not have full-time job, and make a living out of casual work).

On the macro level of economic environment the financial crisis of 2008 and its consequences were key events. The Hungarian GDP decreased substantially and the social inequality increased. The austerity measures introduced affected the drug related government spending. The drug related public expenditure has decreased significantly during the period studied, and it hit hard SEPs in Hungary as purchasing the injecting equipment necessary to provide the service has high costs.

The micro level of policy environment was described by the decisions on the SEP made by the local government, and how these decisions led to the closure

of the SEP in August 2014. The other event which was described in this section was the cancellation of the cooperation agreement between the SEPs in Budapest and the Budapest Metropolitan Police Headquarters in the end of 2013. The macro level of policy environment was operationalized as the national level legislative framework. Several changes have happened in this environment during the period 2010-2015. There have been multiple amendments to the Criminal Code over these years, the special (more lenient) regulations relating to drug addicts were removed, and the illicit drug consumption became punishable. Besides, the legislation regarding the control of NPSs was created during this period. It has to be mentioned that during the period studied the national drug policy document was withdrawn by the government, and a new strategy were approved only three years later, and the action plan complementing the strategy was approved by the parliament in December 2015.

2. Objectives

My dissertation address the following question: What could cause the increase in HCV prevalence among PWIDs between 2010 and 2015, in other words what might have caused the increase in the health risks of injecting drug use during this period. To answer that I would present a case study of the injecting drug use scene in the 8th district of Budapest – where I have conducted several studies during 2010-2015. In my dissertation I would try to synthesise the results of these studies. I would aim to provide outcomes that could be useful for designing and implementing harm reduction interventions. I would like to examine the following hypothesises:

- The emergence of NPSs caused a transition in the used substances, i.e. PWIDs switched to NPSs from the substance they have injected before.
- During the examined period the substances PWIDs typically used have changed, and NPS injecting became dominant.

- There is a correlation between HCV prevalence and NPS injecting.
- The structural factors influencing the context of injecting drug use have changed, and this change increased the occurrence of risk behaviours.

Understanding the role of structural factors in the formation of harms of substance use, has been an important discussion in the contemporary literature. Since injecting drug use and the spread of infectious diseases are connected, this problem has a public health aspect too. The risk environment framework has been used in the Hungarian literature as a theory to interpret results. The novelty of the present paper is that I defined, operationalized and described all types and levels of the risk environment, in order to map the structural factors influencing substance use and describe the intricate system of structural factors influencing risk behaviours. I aim to gather all the data and information that characterize the types of environments Rhodes have specified, to describe the changes in the risk environment during 2010-2015. Additionally, the use of the risk environment framework to understand substance use is a novelty, because risk environment's theoretical approach is based on post-structuralism, which has not been applied in the Hungarian social science discourse on substance use.

3. Methods

Studies on injecting drug use typically reach PWIDs through programmes for active injecting drug users (e.g. mobile and fixed site SEPs, street outreach programmes). Researches included in my dissertation used the same approach. I included four studies in the dissertation, I will use separate acronyms for each study.

3.1. SEP_data_analysis

To describe the characteristics of the clients of the SEP and the syringe turnover in the SEP I analysed two different databases, the client register and the daily

log file of the syringes exchanged (both created as a daily administrative activity in the programme). My work was the data cleaning, and the data analysis.

At the day the SEP closed (26. August 2014.) the number of registered clients was 3687. The majority of registered clients was male, although the proportion of males has changed during the years, till 2010 approx. three quarter of the registered clients were male, after 2011 this proportion was somewhat less than two third. The average age of the newly registered clients was 28,9 years, the youngest client was 13 years old, and the oldest was 67 years old. Comparing the years of registration, the proportion of 40 years old or older clients increased (chi square=167,440; p=0,000). In 2014 1529 clients visited the programme at least once, the demographic characteristics of these active clients were the following: majority was male (the proportion of females was 30%), average age was 32,56 years, 78% was living in the 8th district.

3.2. Mephedrone_interviews

We made 17 half structured interviews among the clients of the SEP of Blue Point Foundation. Sample selection was based on privileged access; the interviews were made by the staff of the SEP, with clients they already knew. The half structured interviews had three main topics: the initiation of injecting mephedrone use, current substance use, and the consequences of mephedrone use. Interviews were recorded between December 2010 and February 2011, all interviewees injected mephedrone at least once in the last 30 days. I took part in the data collection, data analysis and the publication of the results.

There were 8 male and 9 female in the sample, the majority (12 persons) was between 20-34 years old. According to the screening questionnaire 13 participants was unemployed, 2 participants had part time or full time employment. 4 interviewees had completed secondary education, others had lower educational attainment. All participants had used amphetamines in their

life, 14 of them injected it; 10 participant tried heroin and 6 of them injected it. All but one participant tried mephedrone in 2010.

3.3. MDPV_questionnaire

Data collection took place in the SEP of Blue Point Foundation between 13th of September 2011 and 15th of October 2011 in the 8th district of Budapest. The questionnaire was made by the author, the included topics was the substance injected in the past 30 days, the first regularly injected substance, and the initiation of injecting drug use. In this study I wrote the questionnaire, was responsible for the data collecting, created the database, and analysed the data. The articles were written together with co-authors.

Comparing the sample with the clients visiting the programme (active clients) in 2011 (n=1774), the age, sex and place of residence distribution showed no significant difference. The proportion of males in the sample was 71,2%, among the active clients it was 70,2% (chi-square=0,068, p=0,435), the average age in the sample was 30,9 years old (SD=8,1), among the active clients it was 30,2 years with a standard deviation of 8,1 (chi-square=2,884, p=0,718). The majority (almost two thirds) of the respondents lived in the 8th district, and it was not significantly different from the active clients (chi-square=5,468, p=0,243)

3.4. Counselling_data_analysis

The questionnaires were recorded between June and November of 2015, it was the part of a quick testing (HIV, syphilis, HCV) and counselling intervention. The SEP of the Blue Point Foundation had been closed at the time of the data collecting period, services providing the counselling intervention was the most accessible services for the former clients of the closed SEP. In this study I wrote the questionnaire, the questions on the injecting risk behaviours were based on

the „Injecting Risk Questionnaire” included in EMCDDA"s Evaluation Instruments Bank. I worked in the data recording, made the data cleaning and data analysis.

In total 201 respondents answered the questionnaire and were tested for HCV, HIV and syphilis. In the dissertation I used the data collected in Budapest, what constituted 47,8% of the total sample (24,4% were recorded in Miskolc, 13% in Pécs, 15% in Szeged). 67,7% were male, 32,3% were female in the sample, the average age of the respondents was 31,9 years. Majority (41,3%) had elementary or lower education attainment. The vast majority (77,1%) injected NPS.

4. Results

4.1. Switch to NPS among PWID

We have carried out three studies on the NPS phenomena; I will show the results chronologically, as the NPS phenomena unfolded. We tried to explore how PWID switched to mephedrone in a qualitative study (Mephedrone_interviews). We found that respondents did not have to find a new dealer to get the substance: 2 out of the 17 interviewees told that they had to find a new dealer to purchase mephedrone. Thus the new substance was easily accessible; getting it did not require special efforts. According to the interviews the circumstances of use depended on the other PWID joined the company: how they could get the money, how and where they could buy the substance. In the narratives of the transition to mephedrone use the pleasurable effect of the substance was an important component. We found that the switch (the first use of mephedrone) happened in a group of other PWIDs. The local injecting drug user scene is characterised by an intense PWID community where users typically inject together in a group: out of the 17 respondents only 2 injected mephedrone alone occasionally. The presence of the injecting substance user community was paramount, both the risk narrative’s (negative effects,

problems of mephedrone) and the pleasure narrative's (positive effects of mephedrone) context was an injecting substance user community.

After mephedrone became a controlled substance in 1st January 2011, PWIDs switched to another substance: MDPV. At the end of 2011 we carried out a snapshot survey (MDPV_questionnaire). The results indicated a substantial change. Almost half of former amphetamine (45,1%) and heroin (41,7%) users, and 78,6% of "other" substance users switched to MDPV. We compared the "switchers" and those, who did not switched substance; the results indicated, that males (chi-square=5,435; p=0,02), and those who had longer injecting use history (chi-square: 8,923; p=0,03) were more likely to change their injected substance. Overall the legal status of NPS did not seem to play an important role in the transition to NPS; the results of the MDPV_questionnaire showed, that the respondents had been injecting for years before (the respondents had injected for 8,7 years on average at the time of the survey), and the mephedrone_interviews indicated that PWIDs did not have to find a new dealer to purchase the new substance. For the clients of the SEP, NPSs were cheaper and easier to get than the substances they had used before (heroin, amphetamine).

The data from the SEP_data_analysis showed, that primarily injected substance of the new clients at the time of the registration have changed in parallel with the legal status of a NPS. As a substance became controlled it disappeared and was replaced by a new substance. There is a significant correlation (chi-square=1146,964 p=0,000) between the primarily injected substance and the year of registration. The proportion of clients primarily injecting NPS begun to increase after 2010, by 2013 two-third of the clients primarily injected NPS. It is also clear from the data, that the clients who had registered in the programme before NPS started to gain popularity among PWIDs, also changed to NPS injecting. 72,6% of those clients who were active users of the SEP in 2014 but had been registered in 2010 or earlier (N=336) injected NPS in 2014, 11,3% of

them injected "anything" or "everything" (in practice this category meant NPS injecting also, only they did not have preference, bought what was available at the dealer). The proportion of those, who used the same substance in 2014 as at the time of registration, was 14,5% among amphetamine users and 7,2% among heroin users (11,8% of the 336 persons). This means, that almost 90% of those clients who visited the SEP in 2014 but were registered in 2010 or earlier, did not used the substance they used at the time of registration.

4.2. Risk behaviours of PWIDs in Budapest

According to the results of the counselling_data_analysis, Budapest has an intense risk environment, PWIDs living in Budapest are more likely to get infected with HCV: HCV prevalence was the highest in Budapest, higher than in the other three towns participating in the study (chi-square=28,798; p=0,000). Besides the location, injecting drug use was a risk factor, respondents who have ever injected had a higher chance to be HCV positive (chi-square=16,804; p=0,000). NPS use was a risk factor in itself, proportion of HCV positive respondents were much higher among NPS users than among those, who used other (classic) substances (chi-square=8,750; p=0,003). HCV prevalence was the highest among NPS injectors from Budapest, 79,7%, again, much higher than the HCV prevalence among classic substance injectors (chi-square=6,789; p=0,014).

Respondents used one syringe 2,6 times on average, third of the respondents used one syringe 3 or more times. 74% of the sample have shared injecting equipment with others, the majority (37,7%) shared it with one person, although 22,1% shared their injecting equipment with 3 or more persons. In the questionnaire we asked about 12 types of equipment sharing. The answers indicated that the most common type of e paraphernalia sharing are those that can happen when someone injects in a group setting (i.e. buying, dissolving and injecting the drug together). The most prevalent risk behaviour was sharing the

water. The vast majority (77,1%) of the respondents from Budapest shared some injecting paraphernalia in the past 30 days, most of them reported 2 types of risk behaviour, however 4,5 risk behaviour was the average (out of the 12 risk behaviour listed in the questionnaire). We can assume that sharing injecting equipment is a common, everyday practice among PWIDs in the area.

4.3. Change in structural factors influencing risk behaviours

With defining the types and levels of risk environment (see dissertation chapter 1.5) I tried to operationalize the structural factors influencing the health related risks of substance use (see the appendix of the dissertation for the detailed list of operationalized elements of the risk environment, and the datasets I used to describe it). I would like to present the developments in this intricate system of structural factors by describing the changes in the risk environment during 2010-2015.

The macro level of physical environment was defined as the drug market situation; the results representing this were described above, in chapter 4.1. The micro level of social environment was defined as the norms and attitudes in the community – these were described by the results of mephedrone_interviews and counselling_data_analysis studies. According to the qualitative study, the substance user community is very strong, very intense; substance users have social connections almost exclusively with other substance users. This characteristic have not changed when PWIDs switched to NPSs. Source of supply remained the same; in most of the cases dealers were not a distinct community, they were part of the same group. This strong substance user community facilitated the spread of NPSs in various ways. There is a distinct hierarchy of the substances in the community, which applies to the user itself (heroin has the lowest status, and amphetamine/cocaine has the highest). When the NPSs emerged, a heroin user could reach higher status by switching to an NPS. However the higher risks of NPS use were not considered in the narratives

of the substance change. The data from the counselling_data_analysis questionnaire suggests that injecting is done typically in group setting. Sharing injecting equipment was very prevalent among the respondents, which suggests that this behaviour is very common, it is a normal, accepted behaviour in the community.

The coverage of the local SEP is another operationalized variable of the micro level of the social environment. I could show with data from the SEP_data_analysis, that the coverage of the SEP (number of syringes distributed per client) decreased in 2010 and between 2012 and 2014. The decrease was caused by the several changes in the syringe exchange policy (e.g. the number of syringes one client can exchange was limited) in the programme during the period under investigation – constituting the micro level of policy environment. As a result of these changes the coverage of the programme decreased since it affected the number of clients per day in the SEP and the syringe turnover. It is worth highlighting that the changes in the exchange policy of the SEP were not based on professional reasons but were triggered by political and financial circumstances.

5. Conclusions

According to the results the two hypothesises, that can be verified, is the hypothesis that the emergence of NPSs caused a transition in the injected substances, and the hypothesis that during the examined period NPS injecting became dominant. In 2014 the vast majority of all active clients of the SEP (including those clients, who injected before NPSs emerged) used an NPS. Furthermore, both former stimulant users, and former depressant users switched to NPS injecting. An important characteristic of this change of injected substances is that the transition has occurred in a community of injecting substance users, where several factors interacted and facilitated this change.

Substance use happens in community setting, in a well known environment, with easy access to NPSs.

The hypothesis about the association between HCV and NPS injecting could be verified too: HCV prevalence was significantly higher among NPS injectors (in the total sample and in the Budapest sample respectively). It is worth mentioning that injecting drug use was a significant risk factor in itself. Although this paper focuses on the Inner-Józseváros scene, results of the counselling_data_analysis showed significant association between the place of data collection and HCV prevalence. The sample of Budapest had a much higher HCV prevalence than the other 3 cities, what indicates higher risks for the PWIDs living in Budapest.

The hypothesis, that structural factors influencing the context of injecting drug use have changed, and this change increased the occurrence of risk behaviours, also seems verifiable. The analysis based on the risk environment framework showed that the characteristics of the open drug scene in Józsefváros have changed during 2010-2015, and it showed that these changes created an environment where the health risks of injecting drug use is higher.

The situation in the micro level of physical environment have not changed substantially, nevertheless it was not favourable in 2010 either: the inhabitants have low social status, the buildings are in bad condition and it has an open drug scene. These conditions are increasing the risks of PWIDs. The emergence and spread of NPSs – a change in the macro level of physical environment – is another attribute that increased the environmental risks.

As a reaction to the NPS phenomena, the macro level of policy environment has changed either. NPSs could become controlled substance quicker with the introduced new legal regulation, although it had some unintended consequences: the available substances in the drug market are changing continuously, which increases the risks of substance use. Parallel with the NPS phenomena, the macro level of economic environment changed either. With the financial crisis

came the recession, the social inequality grew, and the financial resources of the services providers decreased – these changes strengthened the risk environment. The decreased public expenditures on drugs problem can not be discussed without an important characteristic of the macro level of social environment. Drug users are the most excluded social group in Hungary; as this is a perpetual attribute of the population, it might have indirectly influenced the decisions on government spending and the area of austerity measures. The decrease in the available funding had serious consequences for the SEP in Józsefváros; it had to change its syringe exchange policy, and its opening hours. As a consequence, the coverage of the SEP decreased; there were less available sterile injecting equipment in the local PWID population. The lower level of injecting equipment available combined with the changes in the macro level of physical environment (NPS injecting) caused increased risks for PWIDs, as NPSs are injected more frequently than classical substances (i.e. more syringes would have been needed while in reality the available number of syringes decreased). The mutually interconnected, intricate system of different environments has created a situation where the increasing prevalence of blood-borne viruses is almost unavoidable.

After looking at the elements of the physical, social, economic and policy environments, we can conclude, that the developments in these environments during 2010-2015 led to a riskier context for injecting substance use. Thus the outcome of the interplay, and mutual reinforcement of environments that have already been unfavourable and environments became disadvantageous, could contribute to the increase in HCV prevalence in the population. It is important to add, that the influence of these structural forces on the prevalence of blood born viruses, could not be expected to be direct and linear. The consequences of these interactions could be unintended and unpredictable. The systematic analysis of the risk environment revealed that some environments already had unfavourable characteristics at the beginning of the period (micro level of physical

environment, micro and macro level of social environment), some environments have became unfavourable during the examined period (macro level of physical, economical and policy environments), and some environments have moved to unfavourable directions due to changes in other environments (macro level of physical environment, micro level of economic and policy environments).

There are many steps necessary to manage the situation, the doubled HCV prevalence among injecting drug users in Hungary. The risk environment framework, compiling the structural factors influencing the health risks of substance use, highlights that complex interventions aiming at social, environmental factors might be more effective than interventions focusing on individual behaviour change and the individual risks of substance users. It is important to consider and implement environmental interventions despite it could be hard to transform these factors into variables directly affecting public health indicators. Furthermore, the concept of risk environment draws attention to the question of individual responsibility. As a given act of substance use is shaped by different interconnected structural factors, the individual performing that act can not be solely responsible for the consequences. If we would like to implement interventions that can effectively reduce the health risks of substance use, it is necessary to monitor environmental, structural factors influencing the consequences of substance use, and aim for responses that could promote an enabling environment.

6. Biblyography of the candidate's publications

6.1. Publications related to the PhD thesis:

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Rácz J, Gyarmathy VA és **Csák R**. (2016b) New cases of HIV among people who inject drugs in Hungary: False alarm or early warning? International Journal of Drug Policy, 27: 13-16.

6.2. Publications not related to the PhD thesis:

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