

# Proposing a Psychological Autopsy Procedure for Post Mortem Examination of Accidental Fatal Overdose Cases

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## Abstract

Psychological autopsies have been suggested and used for clinical and forensic investigation, as well as for research purposes, in investigation surrounding a completed suicide. While accidental drug overdose death constitutes a major clinical and forensic challenge, psychological autopsy rarely has been mentioned as a potential tool in post mortem investigations of these causes of death. This is in contrast to the high number of established risk factors described in the literature on drug overdose deaths. Consequently, based on the vast literature on overdose risk factors, we here propose the use of psychological autopsies for the investigation of events and circumstances preceding cases of overdose death.

**Keywords:** Psychological autopsy; Overdose; Opioid; Mortality; Suicide

## Introduction

Psychological autopsy is a well-known and established method in suicide research, assessing potential risk factors preceding completed suicide [1,2]. Also, based on suicide research and prevention, and on collaborations between different authorities involved after a person has committed suicide, psychological autopsies are described to contribute with important information after a suicide death, in addition to police reports and forensic medical examination [3]. However, in contrast to this, the same method has not been described scientifically as a method for the corresponding research in fatal accidental drug overdoses in substance use disorders, and with few exceptions [4,5], it has not been mentioned in the context of such overdose deaths.

## Discussion

This is in contrast with the fact that drug-related overdoses may intuitively be associated with events and behaviours preceding the overdose event, many of which would be plausible to include in psychological autopsies similar to those used in suicide research. In particular, there is a vast literature describing potential risk factors of illicit drug overdose, many of which relate to behaviours, events and decisions occurring prior to death and which would be informative to address in a psychological autopsy context. These risk factors include a number of variables which could potentially be researched or reported in case of an unnatural death suspected to represent a drug overdose, both in research and in the clinical setting.

Examples of known risk factors of overdose deaths include closely substance-related variables such as the specific primary use of opioids [6], polysubstance use typically involving other sedating and respiratory-depressing substances such as sedatives and alcohol [7-13], injection as the route of administration [7], and previous drug overdoses [14]. Also, known risk factors include variables related to

health care services and interventions prior to the overdose event, such as increased 'doctor shopping' behaviour [15], recently denied applications for substance use disorder treatment [16], being out of treatment [6,14], recently leaving treatment [17], previous psychiatric hospitalization [6], recent detoxification [14], or recent release from prison [7,18]. Parallel to the risk increase related to prison release or hospital discharge, an increased risk may also be due to other reasons for lowered tolerance to opioids [8].

Among psychiatric variables, previous suicidal ideation or suicide attempts constitute a risk factor for overdose [8,19], as well as depression [20] and high level of impulsivity [9]. Several other psychosocial variables are known to predict overdoses, including homelessness [10,16,21], living alone, lack of social integration [19], the presence of a social network of other individuals using drugs [19,20], and drug use in unsafe and stressful settings [16]. In summary, many known risk factors of drug overdose reflect life circumstances and events which can potentially be described from the reports of concerned significant others, from official decision-making or from documentation from hospitals or social outreach services.

Based on a literature search focusing on risk factors for fatal overdose in drug users, there is clearly a vast literature describing potential events and traits likely to increase an individual's risk of overdose. While this method is both well established in routine work by authorities after a committed suicide, and in research aiming to increase knowledge about events preceding suicides, it has not been established in drug overdose deaths. Based on the vast amount of knowledge about overdose risk factors, there is clearly a rationale for institutions to examine underlying causes of overdose deaths, including proximal and more distant predictors. Risk factors in several different areas have been described, ranging from physical risk factors and particular substance use patterns, to events and conditions related to an individual's socio-demographic situation and life events potentially preceding a fatal overdose event. Thus, we propose there may be sufficient data for psychological autopsy procedures in many fatal overdose cases, and that such a procedure, closely similar to the

routine psychological autopsies carried out in suicide cases [1,2], should be applied by institutions and policy makers into the field of fatal drug overdoses. This may have significant implications in the field of drug-related death; both for important contributions about factors preceding the overdose in the individual case, but also, this would give an opportunity for authorities to observe trends and to intervene in overdose prevention.

## Conclusion

We propose the use in overdose research and in clinical and forensic post mortem evaluations of psychological autopsy as a method also for non-intentional, accidental drug overdoses, based on the large number of overdose studies published over the past decades.

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