Healthcare professionals are less confident in managing acute toxicity related to the use of new psychoactive substances (NPS) compared with classical recreational drugs

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Summary

Background: The features of acute classical recreational drugs or new psychoactive substances (NPS) toxicity fall into three broad groups: (i) stimulant; (ii) hallucinogenic and (iii) depressant. Currently, there is no information available on healthcare professionals knowledge/confidence in managing the acute toxicity related to NPS use.

Aim: We have compared knowledge and confidence of managing acute toxicity related to use of NPS with that seen with the use of to classical recreational drugs.

Design and Methods: Physicians/nurses completed a questionnaire survey to self-assess on a 5-point scale their knowledge (1—little knowledge; 5—very knowledgeable) and confidence (1—little confidence; 5—very confident) of managing acute toxicity related to the use of classical recreational drugs or NPS. Differences between knowledge and confidence for classical recreational drugs and NPS were assessed using paired Student’s t-test; comparison between doctors, nurses and the frequency of managing acute classical recreational drug/NPS toxicity was assessed using unpaired Student’s t-test.

Results: One hundred and eighty-eight (82 physicians, 106 nurses) completed the survey. Classical drug compared with NPS knowledge: nurses 2.9 ± 1.0 vs. 2.1 ± 1.0, P < 0.001; physicians 3.1 ± 0.8 vs. 2.1 ± 1.0, P < 0.001. There was no difference between nurses and physicians in classical drug (P = 0.11) or NPS (P = 0.89) knowledge. Confidence in managing classical drug toxicity compared with NPS confidence: nurses 3.0 ± 1.1 vs. 2.3 ± 1.1, P < 0.001; physicians 3.0 ± 0.9 vs. 2.1 ± 1.0, P < 0.001. There was no difference between nurses and physicians in classical drugs (P = 0.85) or NPS (P = 0.33) confidence.

Conclusions: Physicians/nurses are less confident in managing acute NPS toxicity. Management of toxicity is not dependent on knowing the drug/NPS, but should be on the basis of these clinical signs/symptoms. Training/education should focus on the concept of managing the pattern of toxicity that an individual presents with rather than the actual drug(s).
Introduction
Over the last decade, there has been an increase in the availability and use of new psychoactive substances (NPS); in 2014 there were 101 new substances detected in Europe and reported through the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) Early Warning System.1 These new substances are often structural modifications of existing classical recreational drugs, with these changes designed to circumvent existing national or international drug control legislation. There is limited systematic collection of data on the acute toxicity associated with NPS.2,3 When an individual NPS enters the recreational drug scene, there is limited information available on the acute toxicity to healthcare professionals treating individuals. Currently, there is no information available on the knowledge of and confidence of treating clinicians (nurses and physicians) in managing acute toxicity of NPS. In this study, we have compared this knowledge and confidence of managing acute NPS toxicity with that related to classical recreational drug toxicity; in addition, we determined whether more frequent exposure to acute recreational drug toxicity was associated with greater knowledge and confidence.

Methods
We designed a survey to determine individual clinician’s knowledge and confidence of managing acute toxicity related to the use of classical recreational drugs (e.g. cocaine, amphetamines, cannabis) and NPSs (e.g. cathinones, piperazines, synthetic cannabinoid receptor agonists). Both knowledge and confidence were self-assessed using a 5-point scale where (i) knowledge: 1—little knowledge and 5—very knowledgeable; (ii) confidence: 1—little confidence and 5—very confident. Participants were not asked about specific drugs/NPS, only the broad categories of ‘classical recreational drugs’ and ‘NPS’. In addition, they were asked how often they managed individuals with acute recreational drug/NPS toxicity. Nurses and physicians at an inner-city London teaching hospital working in the Emergency Medicine, General (Internal) Medicine and Critical Care departments were recruited by convenience sampling through direct contact and electronic mailing to complete the survey. Participants were not compensated for participation. The survey was distributed both in electronic and paper format to potential study participants, depending on the method of recruitment. Data from completed surveys were entered into an Excel spreadsheet and differences between the knowledge and confidence for recreational drugs and NPSs were assessed using paired Student’s t-test; comparison between physicians, nurses and frequency of managing acute recreational drugs/NPSs was assessed using unpaired Student’s t-test. Data are presented as mean ± standard deviation.

Results
One hundred and eighty-eight staff completed the survey—consisting of 82 physicians and 106 nurses. Ninety (47.9%) participants managed patients with acute toxicity related to the use of classical recreational drugs and/or NPS more than once a month, with 98 (52.1%) managing patients less frequently.

Knowledge of classical recreational drugs and NPS
Both physicians and nurses had greater knowledge of classical recreational drugs compared with NPSs (Table 1); there was no difference between nurses and physicians in the knowledge of classical recreational drugs (P = 0.11) or NPSs (P = 0.89). 

Confidence in managing acute toxicity related to classical recreational drug or NPS use
Similarly, both physicians and nurses had greater confidence in managing acute toxicity related to the use of classical recreational drugs compared with NPSs (Table 1); there was no difference between nurses and physicians in the confidence managing classical recreational drug acute drug toxicity (P = 0.85) or NPSs acute toxicity (P = 0.33).

Impact of frequency of managing patients on knowledge and confidence
Those physicians and nurses who managed acute recreational drug/NPS toxicity more frequently (defined as managing patients with acute toxicity more than once per month) had greater knowledge of and confidence in managing acute toxicity for both classical recreational drugs and NPS than those who managed patients less frequently (defined as managing patients with acute toxicity less than once per month) (Table 2). For both frequent and less frequent exposure there was greater confidence in managing acute toxicity related to classical recreational drug use compared with NPS use (P < 0.001 for both frequent and frequent use).

Discussion
Physicians and nurses had less knowledge of NPS compared with classical recreational drugs and less confidence in managing acute toxicity related to the use of NPS compared with
classical recreational drugs. Although those who manage pa-
tients with acute recreational drug/NPS toxicity more frequently
had greater knowledge and confidence, they still had less confi-
dence in managing acute NPS toxicity compared with acute
classical recreational drug toxicity. A previous study of non-
specialist workers in the night-time economy venues (e.g. bars,
nightclubs) demonstrated a similar pattern with less confidence
in managing acute toxicity related to NPS use compared with
classical recreational drug use.4,5 Whilst the confidence of these
non-specialist workers was improved with a short (1–2 h) inter-
active teaching session, the difference between NPS and clas-
cical recreational drugs persisted.4,5

There are a number of limitations with this study. Firstly, this
study was undertaken in one institution, and therefore
larger studies are needed to understand how generalizable
these findings are. In addition, self-reported knowledge and
confidence reported in this study may not correlate with objec-
tive measures of knowledge and the application of this to provid-
ing correct/appropriate treatment; further work could compare
self-reported knowledge with objective measures through
simulation studies and/or other assessment measures. Finally,
responses are likely to be influenced by an individual’s familiar-
ity with classical recreational drugs compared with unfamiliar-
ity with NPS; although we looked at overall frequency of
managing acute classical recreational drug/NPS toxicity, we did
not differentiate on frequency of managing classical recrea-
tional drug toxicity compared with NPS toxicity.

The information on the pattern of acute toxicity related to
the use of NPSs comes from a variety of different information
sources, including reports on user discussion forums, poisons
information centres and case reports/series; these information
sources can then be combined through a process known as data
triangulation to understand this pattern of acute toxicity.6–11
This process has demonstrated that the majority of NPS have a
similar pattern of acute toxicity to that seen with the existing
controlled substances (classical recreational drugs) that they
are often structural modifications of.6–11 Overall, both the fea-
tures of acute toxicity from either classical recreational drugs or
NPS can be divided into three broad groups: (i) stimulant; (ii)
hallucinogenic and (iii) depressant. There is some overlap, par-
cularly with the NPS compounds as they tend to have ‘added’
toxicity.6–11 This means that largely the management of acute
toxicity of novel psychoactive drugs (NPS) toxicity in night-time economy envi-
ronments.

Conflict of interest: None declared.

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