Reported incidents regarding persons with intellectual disabilities

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Abstract

Introduction
The data of 2012 are derived from of a Dutch service provider who offers services in the southern part of the Netherlands. Having insight into such incidents gives service providers insight into quality of the services and potentially hazardous circumstances. Consequently, they can adjust their services and/or circumstances and also meet the requirements of quality management. This study regards reported behavioural incidents, medication incidents, fall incidents and other incidents regarding clients with intellectual disabilities.

Materials and methods
The data refers to 778 residential clients and 219 non-residential clients. It aimed to describe the frequencies, types, seriousness of the incidents and the number of clients involved, especially regarding behaviour incidents. The data are derived from the incidents-database of the service provider.

Results
Results show that 2574 incidents were reported in 2012: 1100 behaviour incidents, 674 medication incidents, 325 falls and 475 other incidents such as failing electronic night watch, running away, pica (eating non-edible things), choking and unwanted sexual behaviour. The 1100 behaviour incidents in residential clients involved a total of 205 out of 778 persons. As a result of logistic regression analysis, it showed that clients in community-based living (compared to campus-based living) and those aged 40–49 years and 70+ were less likely to have reported behaviour incidents. The discussion pays attention to risk management concerning client-related incidents.

Conclusion
It is recommended to repeat analyses of incident reports periodically, in order to gain insight into the quality of services and into potentials to improve the quality.

Introduction
In 1988, people in the Netherlands were shocked to see photos of a woman with intellectual disabilities (ID) who was chained to the wall because of her severe aggressive behaviour. These photos were taken by her parents. A similar situation was again identified in the Netherlands and publicly reported in 20111. Recently, August 2013, a Dutch woman with ID was crushed to death by staff who tried to control her aggressive behaviour2.

‘Intellectual disability is a disability characterised by significant limitations both in intellectual functioning (reasoning, learning, problem solving) and in adaptive behaviour, which covers a range of everyday social and practical skills. This disability originates before the age of 18’3. The Netherlands counts ~110,000 persons with ID4,5. A review of medication errors with ID found that frequent use of medication is likely to result in higher risk of medication errors. In addition, the study showed that 85% of the residents experienced at least one reported medication error21. Persons with ID are at a comparatively high risk of falling compared to the general population7–14.

Medication use for behaviour or psychiatric purposes is also more frequently found in persons with ID15–20. A review of medication errors in community residences for persons with ID found that frequent use of medication is likely to result in higher risk of medication errors. In addition, the study showed that 85% of the residents experienced at least one reported medication error21. Persons with ID are at a comparatively high risk of falling compared to the general population22–29.

Behaviour problems, medication incidents and falls (further on termed 'incidents') that occur in persons with ID are unsatisfactory situations. In the Netherlands, such incidents that involve clients of service providers have to be reported to those formally responsible (i.e., usually the management) within that particular service provider agency. This reporting is done because it is one of the requirements of risk management and also necessary to get quality certificates30. Service providers need to have such certificates, in order to get their services re-imbursed. For severe incidents, reporting to the Dutch Health
Care Inspectorate (IGZ) is compulsory. IGZ promotes public health through effective enforcement of the quality of health services, prevention measures and medical products. IGZ is also allowed to monitor such incidents and to review the incident reports and act when needed.

Reporting incidents is not only a service provider requirement. This type of report also gives service providers insight into some aspects of the quality of the services they offer and possibly identify some potentially hazardous circumstances, even on unit level or per house. As the result of this input, they can adjust their services and/or circumstances and also meet the requirements of quality management in general. Analysing incidents thus can be used for preventive measures and improving realisation of risk, safety and prevention of incidents. Service providers are free to choose how they register incidents. In practice, the reported incidents tend to focus on clients’ behaviours (e.g., physically or verbally aggressive towards other clients or staff, self-injurious behaviour), medication (e.g., forgetting to give medication, giving wrong doses), falls and other incidents (e.g., running away, stealing, using drugs, doors locked in violation of regulations).

The serious nature of these incidents underlines the importance to provide careful review of incidents regarding behaviour, falls and medication errors. The main questions are: ‘What kind of incidents have been occurred, what groups are at risk, what kind of incidents can be prevented?’ The beginning of this article shows that severe behavioural problems indeed are prevalent in persons with ID. In this study, we therefore primarily focus on behaviour incidents as reported by a service provider in the Netherlands. We also provide brief information about medication incidents, fall incidents and other incidents. Incidents mainly are reported in clients receiving residential services. Therefore, we analysed risk groups in residential clients only. Consequently, the key questions of the study are:

- How many incidents have been reported in the study period?
- What type of incidents (behaviour, medication, falls, other) have been reported?

Regarding behaviour incidents:
- How serious were the incidents?
- How many clients were involved?
- Which groups of residential clients are at risk for behaviour incidents?

Materials and methods

Data collection

The data are derived from the incidents-database of a service provider for persons with ID in the Netherlands. This service provider offers residential services in the south of the Netherlands to ~750 persons with ID. The residential facilities are either campus site-based (~250 persons) or community based (~500 persons). In addition, about another 200 persons with ID use non-residential services as respite support, home support, day support or leisure activities. They live independently or with their families (e.g., parents). The professional support varies between a few hours per month to some hours per day. For these clients, incidents only have to be reported when professional staff of a service provider was involved. Consequently, the number of reported incidents in these clients are relatively low. Service providers are, as mentioned before, free to choose how they register and report incidents. The service provider of the present study uses a digital reporting system. All direct support staff, psychologists, medical and paramedical staff are entitled to report incidents. Main variables that need to be registered are: type of the incident with additional comments, date of the incident, name of client concerned, specification of the incident, seriousness of the incident according to expected frequency and to expected impact, IGZ being informed or not. All reported incidents in 2012 were taken as basis of the study.

Data analyses

Firstly, the number of incidents were counted and categorised (using the pre-coded classifications), according to kind of incidents (behaviour, medication, falls, other). Information is also given about the specification (e.g., kind of behaviour, kind of medication inaccuracy, cause of the fall) and seriousness of the incidents, as indicated via pre-coded options and valued as such by those who reported the incidents. In addition, the incidents were counted at client level: individual clients can be involved in more than one incident. Finally, clients’ characteristics (age, sex, level of ID, living situation (campus site or community) were derived from the general database with clients’ characteristics. The data from the incident reports and the database were merged. Before merging both databases, the clients were made anonymous. For analyses on client level, we only used data of persons who were client in December 2012. This was true for 997 persons. Of these 997 persons, 219 persons used non-residential services (i.e., respite support, home support, day support or leisure activities), 778 clients used residential services (mainly 24/7 support). Of these 778 clients, 521 live in houses located in the community and 257 clients live in houses on a sheltered campus site. For 73 residential clients (9%), the level of ID was not known. The differences between clients with known and unknown level of ID with regard to presence/absence of reported behaviour incidents were not statistically significant ($\chi^2$ test: $p = 0.18$). The differences between both groups regarding sex were statistically

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significant (unknown ID: men 7%; women: 12%; χ² test: p = 0.02). This was also true regarding living situation (unknown ID: campus 5%; community: 12%; χ² test: p < 0.01). The group with unknown level of ID were younger than those with known level of ID (36 and 49 years, respectively; T-test: p < 0.01). To answer the question about which groups of residential clients are at risk for incidents, odds ratios with 95% confidence intervals were computed for dichotomous data. Besides, χ² tests and Kendall’s tau tests were performed to test for non-dichotomous nominal and ordinal data respectively. In order to control for confounding a logistic regression analysis was performed. Dependent variable was presence/absence of behaviour incidents; independent variables were sex, age (0–19, 20–29, 30–39, …, 70+), living situation (campus, community) and level of ID (mild, moderate, severe/profound).

**Results**

**Incidents in general**

Table 1 shows that 2574 incidents were reported in 2012. Almost half of them (n = 1100; 43%) were incidents regarding behaviour; 26% (n = 674) were medication incidents, 13% (n = 325) regarded falls. 19% (n = 475) of the incidents did not fall into these categories.

Medication incidents were mostly medication forgotten (n = 407), medication at wrong time (n = 61) and medication given to the wrong client (n = 58). Fall incidents were: loss of balance (n = 71), stumbling (n = 70), falling out of chair/bed (n = 58) and slipping (n = 40). It showed that a large proportion (90/325) of the other incidents had to do with falling electronic night watch, and one specific client frequently (n = 59) pulled out his cannula. Other incidents were among others: running away, stealing, pica (eating non-edible things), choking, unwanted sexual behaviour, taxi driver forgot to pick up client, doors locked or use of bed fences in violation of regulations. Further analyses showed that for 539/997 (54%) clients at least 1 incident was reported in 2012. It also showed that there was a substantial decrease in reported behaviour-incidents during 2012: in the successive quarter the numbers were 356, 313, 221, 210. We will comment on that in the discussion. For the other types of incidents, there was no obvious upward or downward trend.

**Behaviour incidents**

Regarding the behaviour incidents; most of the 1100 behaviour incidents were physical aggression (biting, hitting, kicking; n = 766), verbal aggression with physical aggression (n = 115). Thirty-one (3%) of these behaviour incidents were regarded as extremely serious; they were mostly threatening and physically aggressive behaviour. 219 Behaviour incidents (37%) were evaluated as serious incidents. The reporters expected that incidents could happen again at least weekly in 18 of the extremely serious cases and in 158 of the serious incidents. The IGZ was informed about three incidents.

**Risk groups**

The 1100 behaviour incidents involved a total of 219 clients. The mean number of behaviour incidents in these 219 clients was 5.0 (SD: 9.4; range: 1–72). The analyses of risk-groups only refer to 778 persons who used residential services on December 31, 2012. Five clients for whom at least one behaviour incident had been reported in 2012, were no longer clients (deceased or did not use services anymore) at the end of that year. In addition, nine clients with one or more behaviour incidents in 2012 used non-residential services. Consequently, the analyses on client level refer to 205 residential clients (219-(5+9)) with at least one reported behaviour incident and 573 residential clients without reported behaviour incidents. Table 2 shows that for clients in campus site living, substantially more often behaviour incidents were reported compared to community living (74 vs. 27%; OR = 3.4; 95% CI: 2.4–4.8). We will comment on that in the discussion. Additional analyses showed that for males, compared to females, more often behaviour incidents were reported (29 vs. 22%; OR = 1.4 (95% CI: 1.0–2.0)). The differences regarding absence/presence of reported behaviour incidents between clients with mild, moderate and severe/profound ID (19, 28 and 25%, respectively) were not statistically significant (χ² = 3.55; p = 0.17). The OR's

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Reported incidences according to type, number (absolute, %) and quarter 2012</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Quarter 1</td>
</tr>
<tr>
<td></td>
<td>%</td>
</tr>
<tr>
<td>Behaviour N</td>
<td>356</td>
</tr>
<tr>
<td></td>
<td>52%</td>
</tr>
<tr>
<td>Medication N</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>23%</td>
</tr>
<tr>
<td>Other N</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>13%</td>
</tr>
<tr>
<td>Falls N</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>13%</td>
</tr>
<tr>
<td>Total N</td>
<td>691</td>
</tr>
<tr>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

Research study

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All authors abide by the Association for Medical Ethics (AME) ethical rules of disclosure.
It is obvious that incidents frequently occur in persons with ID\(^2,13,23\), for example, behaviour, medication and fall incidents. This study shows that such incidents are reported for more than half of the residential clients of the service provider concerned. It is clear that the data only refer to clients of a service provider, and thus may be selective with regard to all Dutch persons with ID. Persons with ID who use residential services tend to be more dependent on (professional) support than those who live independently or with their families.

In addition, the study regards only reported incidents. It depends on the reporters if they indeed report all incidents that really occur. And if so, there will still be incidents that they do not observe. For example, if a client falls out of their sight without getting hurt, such incidents will not be noticed and therefore not reported. It indeed is known that persons with ID do not complain adequately about negative circumstances, such as health problems\(^3,13,24\). Underreporting of incidents thus is likely. The same situation exists for aggression towards other clients: as long as such incidents are not observed or told, they will not be reported either. On the other hand, reporters may decide not to report an incident because they judge it as unnecessary. Or they may report an event, while another would not in the same circumstances. Data regarding the level of ID were missing for some clients, thereby resulting in selective non-response regarding age, sex and living situation. However, the presence of behaviour incidents was not substantially different for this group compared to those with known level of ID. Nevertheless, having insight into incidents, give service providers the possibility to adjust circumstances and, when possible, to prevent other similar incidents. A substantial number of incidents indeed can be prevented, such as medication incidents and incidents as a result of malfunctioning materials (chairs, night watch). Other incidents are difficult to prevent: if clients wander around, they may once in a while stumble and fall. Only the very unwanted and illegal situation of always restraining clients may prevent that.

The results show that less behaviour incidents have been reported for clients living in the community. This is partly due to the fact that the policy of the service provider (as do other Dutch service providers) is to offer clients with severe challenging behaviour housing on the campus site. There, they have more room to walk, the houses are more dispersed, and their behaviour thus causing less concern for neighbours. Neighbours without ID tend to be bothered by noise pollution and challenging behaviour of fellow citizens (either without or with ID)\(^3\). Consequently, it is logical that behaviour incidents are more prevalent, and thus reported, in clients who live on a campus site due to the nature of the population.

### Table 2

<table>
<thead>
<tr>
<th>Behaviour incidents</th>
<th>Age group in years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0–19</td>
<td>20–29</td>
</tr>
<tr>
<td>None</td>
<td>21</td>
<td>71</td>
</tr>
<tr>
<td>%</td>
<td>58.3%</td>
<td>72.4%</td>
</tr>
<tr>
<td>1+</td>
<td>15</td>
<td>27</td>
</tr>
<tr>
<td>%</td>
<td>41.7%</td>
<td>27.6%</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>98</td>
</tr>
<tr>
<td>%</td>
<td>100%</td>
<td>100%</td>
</tr>
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\(\chi^2 = 19.4; \text{df} = 6; p = 0.004; \text{Kendall's tau} = −0.03; p = 0.30\)
The results show that, apart from behaviour incidents (see later in this section), there was no obvious upward or downward trend in incidents. The higher number of reported other incidents in quarter 3 and 4, compared to quarter 1 and 2, mainly was due to falling electronic night watch.

Service providers have to report incidents in order to receive reimbursements. This is an important business purpose. However, service providers also can and should use the incident reports to value and improve their service quality: learning from mistakes in the past is helpful for this. These data on incidents, for example, can be analysed on unit level or per house. Consequently, units or houses with relatively many specific incidents can be identified and preventive measures then can be taken specifically. For example, a slippery floor in a specific house that caused fall incidents, rather easily can be replaced by better floor covering; after several medication errors in a specific house, better monitoring and instructions are indicated. Analysing incidents thus can be used for preventive measures and improving realisation of risk, safety and prevention of incidents in staff.

In 2012, the service provider of this study encountered some severe behaviour incidents in some clients, who lived in the same house. It was decided to intervene by strengthening the staff capacity and expertise. In addition, the housing and living circumstances of these clients were adjusted. These measures were taken in order to reduce the frequencies and severity of such incidents. And indeed, the figures of behaviour incidents (Table 1) showed a downward trend during 2012. This was partly the result of fewer incidents from the clients of that specific house: the reported incidents halved after the intervention. This shows how service providers can use incident reports to value their policy and effects of changes in policy.

**Conclusion**

It is recommended to repeat analyses of incident reports periodically, in order to gain insight into the quality of services and into potentials to improve the quality. Also, it would be very informative to compare the data on incidences between service providers. Service providers are free to choose the way they report, albeit that they are invited to share their main results in the same format for benchmarking. Nevertheless, it still is difficult to explain possible variances in these data without more information, because of the flexibility of how to report and differences in the client populations. This limits cross-agency comparisons. However, getting insight into each other’s report of incidents, will undoubtedly lead to better service management of service providers for persons with ID.

**References**
