Summary

Predictive validity of the Recidivism Risk Assessment Scales (RISc)

Background

All three Dutch probation and aftercare services use the 'Recidivism Risk Assessment Scales' (RISc), since November 2004, to assess the risk of recidivism of delinquents and related criminogenic factors (characteristics and circumstances of persons related to criminal behaviour). RISc was developed within the context of the policy programme 'Reducing Recidivism'. This programme started in 2002 and was intended to reduce recidivism among adult convicts. The instrument is based on the English Offender Assessment System (OASys) and is used by probation and aftercare services employees certified for this purpose. In an interview with the offender, the employee assesses to what extent there are problems regarding twelve criminogenic factors:

1   Criminal history
2   Current crime and crime pattern
3   Accommodation and living
4   Education, working and learning
5   Income and handling money
6   Relationships with partner and (extended) family
7   Relationships with friends and acquaintances
8   Drug use
9   Alcohol use
10 Emotional wellbeing
11 Thinking patterns, behaviour and skills
12 Attitude

RISc is used for various purposes in the probation and aftercare practice. In the first place the instrument is used to issue information reports to the judicial authorities or the Public Prosecution Service. Secondly, the probation and aftercare services use RISc to develop plans concerning probation and aftercare service supervision (mandatory probation and aftercare supervision within the context of a conditional conviction, trial leave for mental offenders, Penitentiary Programme, Electronic Supervision and the like). Finally, the instrument is deployed in the formation of a reintegration plan for detainees who, after conviction, in first instance have a remaining sentence of at least four months.
Previous research by WODC into the inter-rater reliability and internal consistency of RISc shows that the reliability of the instrument is sufficient (Van der Knaap, Leenarts & Nijssen, 2007). The concurrent validity of RISc was assessed in the same investigation. However, an investigation to what extent actual recidivism can be predicted on the basis of RISc has not been performed yet. The present investigation aims to study the predictive validity of RISc.

Objectives and research questions

The aim of this study concerns the predictive validity of RISc and whether there are differences in the predictive validity of the instrument for various offender groups.

The objectives of the investigation are:

1 Determining the predictive validity of RISc with respect to predicting the various forms of recidivism for both the total research group as well as for a number of specific offender groups.
2 Determining the contribution of the 12 RISc scales to the predictive validity of the instrument.
3 Determining the optimal threshold values of four risk categories: low, medium low, medium high and high risk of recidivism.
4 Making recommendations to optimise the recidivism assessment for both the total research group as well as for specific offender groups.

These objectives lead to the following research questions:

1 How well does RISc predict the various forms of recidivism among both the entire RISc population and among specific offender groups?
  – Men - Women
  – Age groups: young (aged 15 - 28), middle (aged 28 - 44), old (aged 44 - 84)
  – Delinquents with a serious crime (liable to a sentence of four years or more)
  – Delinquents with a very serious crime (liable to a sentence of eight years or more)
  – Sex offenders
  – Perpetrators of domestic violence
  – Repeat offenders
  – First offenders
  – Perpetrators of violent crimes
2 To what extent do the various scales contribute to the prediction of recidivism in the general group and in specific offender groups?
3 What are the optimal threshold values for identifying the risk categories (low, medium low, medium high and high risk of recidivism)?
4 Does weighting of scale scores provide a better prediction than use of rough scores? If so, does a reweighting of the scale scores lead to a better prediction when compared with the current weighting?
5 What recommendations to improve RISc can be made on the basis of the results?

It should be borne in mind that RISc is not just intended to predict the probability of recidivism. The instrument is also the basis to assess what behavioural interventions are indicated for an individual offender. If the criminogenic problems of an offender subsequently decrease, because he or she participates in one or more behavioural interventions, his or her risk of recidivism should also decrease. As the Ministry of Justice intends to have as many offenders who qualify participate in evidence-based behavioural interventions, it is possible that the prediction of recidivism with pre-viously conducted RISc's (i.e. prior to offenders taking part in behavioural interven-tions) is too high. Between the moment RISc was conducted and the time frame of this investigation, various activities may have been undertaken by the probation and aftercare services and the judiciary that have reduced the risk of recidivism. It is possible that this may have influenced the findings of our study.

Methods
A data file with all RISc's conducted by the three probation and aftercare services in the period of November 2004 to September 2007 was available to study the predictive validity of RISc. RISc is intended, as stated above, to predict new contacts with the judicial authorities. Contacts with the judicial authorities of the research group used in this study therefore had to be charted for the purpose of determining the predictive value of the instrument. Alignment was sought in this

context with the WODC Recidivism Monitor, a long-running research project in which recidivism measurements are performed among various offender groups in a standardised manner. The data applied in the Recidivism Monitor are derived from the research and policy database judicial documentation (OBJD); an encrypted and anonymised copy of the official judicial documentation system (JDS), which is managed by the Judicial Information Service (JustID). The JDS provides with respect to all (legal) persons who have been in contact with the judicial authorities an overview of the criminal cases in which they were suspects. It is recorded with respect to every criminal case when and at which public prosecutor's office the case was registered, what crimes it concerned, and how and by which agency the case was settled. By looking up the criminal cases of the research group in the OBJD pursuant to which they were subjected to a RISc and by selecting their previous and subsequent criminal cases, it could be determined for each offender in the RISc database whether he or she had reoffended. The recidivism rates in the research group could subsequently be related to the RISc scores. This way, it could be established to what extent RISc was successful in predicting recidivism.

The investigation only includes RISc's that were conducted at least two years before the end of the observation term (1 July 2008) in order to have a reasonable time frame in which offenders are able to reoffend. Furthermore, we took into account any prison sentence that may have been imposed and therefore influences the period in which persons were unable to reoffend. Only those cases were selected in which the offender, after termination of the detention, had a time frame of at least two years to reoffend. The research group consists of a total of 16,329 offenders who were subjected to RISc.

The research group consists of all RISc's that were conducted two years before expiration of the observation term (taking into account incapacitation and with the exception of the second and possibly third RISc's that were conducted with the same persons pursuant to different criminal cases). Nevertheless, it constitutes only a selection of the total of probation and aftercare service clients among whom a RISc was conducted in the period of November 2004 to September 2007 because of the requirement set with respect to the duration of the observation term. Analyses show, however, that the research group can largely be described as a representative sample of the entire population of probation and aftercare clients who have been subjected to a RISc.

Recidivism: total research group and specific target groups
For the entire research group and for various offender groups, we calculated what percentage of the perpetrators came into contact with the judicial authorities within two years after they were subjected to a RISc. The analyses show that 35% of the total research group was prosecuted again for a crime within two years after RISc was conducted. 27.7% of the research group reoffends within two years with a crime liable to punishment with a prison sentence of four years or more. Only a small group has renewed contact with the judicial authorities pursuant to a very serious crime (liable to a prison sentence of at least eight years). More than one in ten offenders from the research group comes into contact with the judicial authorities within two years after RISc was conducted pursuant to a violent crime, while the part of sex recidivists is remarkably small (0.5%). Young offenders and repeat offenders reoffend more than average in all respects, whereby repeat offenders display the highest percentage of general recidivism (70.6%). First offenders, with 13.4% general recidivism in two years, have the lowest recidivism rate of the offender groups studied. Perpetrators of sex crimes (in the original case) relatively rarely come into contact again with the judicial authorities, but they do display the

highest rate of sex recidivism of all offender groups. Although women and older offenders (aged 44 or over) reoffend more often than first offenders and sex offenders, it is clear that these two groups have fewer renewed contacts with the judicial authorities when compared with the total group.

RISc total score of recidivists and non-recidivists
Recidivists have a significantly higher total score than those who do not reoffend in the total research group and in nearly all offender groups studied. This applies to every form of recidivism with the exception of sex recidivism. It concerns, generally speaking, significant differences concerning serious and very serious recidivism; the differences are moderate as regards general recidivism. There is also a medium-sized difference between re-offenders of a violent crime and offenders who do not commit another violent crime. There are, however, no significant differences within the group of recidivists regarding the total scores between reoffenders and those who do not reoffend. Although reoffending first offenders score significantly higher than first offenders who do not reoffend (again with the exception of sex recidivism), the differences in this offender group are small to moderate. This means that reoffending first offenders differ less from first offenders who do not reoffend than is the case in other offender groups. This also applies to the youngest offenders and the perpetrators of a very serious original crime. The differences between recidivists and non-recidivists are at most moderate. Women also sometimes show a somewhat different pattern, on the understanding that there's only a moderate difference in total scores between women who again commit serious crimes and women who do not.

Predictive validity of the RISc total score
With ROC analyses, we established to what extent RISc is able to predict recidivism. The analyses show that RISc has an acceptable predictive validity regarding the prediction of general recidivism in the total research group. Of the three types of RISc scores that were studied – weighted, rough and categorised total score – it turns out that the weighted score leads to the best predictions. The prediction based on this score is better than that based on the classification of this score in the three risk categories. It is also better than the prediction of the rough total score.
Although the aim of RISc is to predict general recidivism, it is nevertheless interesting to investigate to what extent the instrument succeeds in predicting other forms of recidivism. If a distinction is made on the basis of liability to punishment of a new crime - four years or more, eight years or more - it turns out that RISc also demonstrates an acceptable level of validity for these forms of recidivism. Even more specific forms of recidivism, such as violent recidivism and sex recidivism, however, cannot be predicted on the basis of RISc. Probation and aftercare service employees and other professional remain dependent, as regards the above categories, on the risk assessment tools specifically developed for that purpose. RISc is, for that matter, able to predict serious forms of violence. Very serious recidivism comprises crimes that concern almost exclusively serious violent and sex crimes. For this reason insufficient validity of the prediction of violent recidivism should be mainly attributed to the limitations of the predictions of less serious forms of crime, such as common assault or threat.
In most offender groups that we studied, the predictive validity of RISc is comparable to that in the total research group. It can be concluded that RISc is generally successful in predicting the general recidivism of the various offender groups in an acceptable manner. The prediction of serious and very serious recidivism is also largely acceptable, while the prediction of violent and sex recidivism is not (with the sole exception of the prediction of violent recidivism by sex offenders). The main

exceptions are caused by the repeat offenders and first offenders. RISc proves to be unable to predict which repeat offenders will reoffend in a valid manner. This is caused by the fact that both reoffending and repeat offenders who do not reoffend are characterised by significant problems (both groups achieve equal scores and score higher than the total research group and than other offender groups). Recidivists and non-recidivists do not differ significantly, which makes the prediction of recidivism very difficult. RISc also seems to predict recidivism for first offenders in an insufficiently valid manner. The differences within this group with respect to the RISc total score and the RISc scale scores between recidivists and non-recidivists are significant, but small. Recidivists and non-recidivists in both offender groups are, relatively speaking, quite similar: all repeat offenders have an extensive criminal history and related (serious) criminogenic problems, while recidivist and non-recidivist first offenders have in common precisely the fact that they have never been in contact with the judicial authorities before. In other words, the small or even non-existent differences between recidivists and non-recidivists mean that it is more difficult to predict, with respect to repeat offenders and first offenders, in a valid manner, which offender will and which will not come into contact with the judicial authorities again.

The separate contribution of the RISc scales to the prediction of recidivism
In addition to the assessment of the predictive validity of the RISc total score, the separate contributions made by RISc scales to predicting recidivism has also been assessed. Logistic regression analyses show that the prediction of general recidivism is largely based on information provided by scales 1 & 2 Crime data. This is hardly surprising: irrespective of the kind of behaviour predicted, previous behaviour is usually the best predictor for future behaviour. The most important dynamic, and therefore in principle alterable, criminogenic factors for predicting general recidivism in the total research group are: relationships with friends and acquaintances, alcohol use, education, work and learning, and drugs use.
Although RISc has acceptable predictive validity for most offender groups studied with respect to the prediction of general recidivism, the same dynamic risk factors do not contribute to the same degree to that prediction in every group. For example, problems with respect to housing (scale 3) belong, with respect to the older offender groups, to the most important predictors of recidivism. Inter alia problems in the field of thinking patterns, behaviour and skills (scale 11) are important for young offenders, whereas the factors environment, education, work and learning (scale 4) are of importance for perpetrators of more serious crimes. With respect to the daily probation and aftercare service, the dynamic criminogenic factors that provide the main contribution to the prediction of recidivism per offender group could serve as starting point for answering the question as to which environments should receive attention first in, for example, a reintegration plan.

Improving the predictive validity of the RISc
One of the research questions was whether the RISc predictive qualities can be improved if a new weighting were developed on the basis of the separate contributions provided by the various RISc scales to the prediction of general recidivism. This turns out to be indeed the case: a new weighting of the RISc scales leads to a better predictive validity. It concerns, however, a rather marginal improvement. Adding the actuarial (that is statistic) risk assessment tool StatRec leads, by contrast, to a further improvement after which the predictive validity can be designated as 'good'. Adding StatRec to a new weighting of the RISc scales also leads, for all separate offender groups (with the exception of the group of repeat offenders), to an acceptable or even good predictive validity with respect to general recidivism.

Risk categories and recidivism

The predictive validity of a new classification has been determined as well, because the probation and aftercare organisations apply, as of 1 October 2009, a classification in four risk categories - low risk, medium low, medium high and high risk (contrary to the current classification of the total score in three risk categories). The results showed that the predictive validity is also insufficient for a classification of the total score based on these four risk categories. The use of a categorised total score can, nevertheless, be defended: offenders with a low recidivism risk reoffend in 19.5% of cases, while the recidivism of offenders with a high risk of recidivism is 60%. What constitutes a high or low risk of recidivism is, to a certain extent, a policy choice, but if someone belongs to a group of which 60% comes into contact with the judicial authorities again within two years, it could be justified to say that this person has a risk of recidivism. Particularly if the rate of recidivism in the total research group is taken into account. However, the rate of recidivism of the total group is, at 35%, almost equal to the rate of recidivism in the group of offenders with medium low risk of recidivism. It is for this reason that, with respect to the categories medium low and medium high (respectively 34.5% and 50.2%), the question is to what extent these percentages can actually be considered as medium low and medium high. Perhaps labels such as low risk, medium risk, high risk and very high risk are more suitable, but a final choice is up to the probation and aftercare services.

A new classification in risk categories

It was determined on the basis of regression analyses whether a valid classification in four risk categories can be made in a different way. For this reason a classification in four risk groups with various rates of recidivism was drawn up: 0% to 20%, 21% to 40%, 41% to 60 and 61% to 100%. This classification showed strong similarities with the actual rate of recidivism of offenders in the four categories. Only in the group of offenders with highest risk of recidivism (61% to 100%) was the actual recidivism, relatively speaking, somewhat lower than could have been expected on the basis of the risk assessment. There seems to be a certain 'ceiling effect': actual recidivism does not exceed 70%, despite the fact that the RISc score achieved by persons means that their risk of recidivism is higher than 61%. This could be connected to the fact that recidivism can only be charted up to two years after RISc was conducted. It might be the case that the predictive value improves if it could be established for another two years.

Final conclusions and recommendations

In summary, the main conclusions and recommendation of this study are:
- The predictive validity of RISc is sufficient with respect to the prediction of general, serious and very serious recidivism in the total population of probation and aftercare clients among whom a RISc has been conducted.
- The predictive validity of RISc is, for most offender groups studied, sufficient for the prediction of general, serious and very serious recidivism.
- RISc is less successful in estimating the recidivism of first offenders in a sufficiently valid manner.
- RISc cannot distinguish in valid manner between repeat offenders who do and those who do not come into contact with the judicial authorities again.
- The predictive validity of RISc can be further improved by calculating new weights for the RISc scales and by adding actuarial prediction model StatRec to the instrument, but it is recommended to postpone doing so until the current development of RISc has been completed.

- A separate weighting of RISc scales does not seem necessary for various offender groups.
- The contribution made by the dynamic criminogenic factors to the prediction of general recidivism is not the same in every offender group studied. It would seem advisable to take this into account regarding the deployment of behavioural interventions.