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# Deliberate self-harm patients in the emergency department – clinical and epidemiological studies

AKADEMISK AVHANDLING

som för avläggande av medicine doktorsexamen vid Karolinska  
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av

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## ABSTRACT

Each year approximately ten million people deliberately harm themselves and one million people commit suicide across the world. Deliberate self-harm (DSH) is a major cause of individual suffering and a burden on the healthcare system. An attendance at an emergency department (ED) due to DSH increases the risk for subsequent suicide with 50 to 100 times compared to the general population. Repetition of DSH is very common (15–25%) and often occurs within a short period of time.

The aim of this thesis was to gain a better knowledge of DSH patients in the somatic ED and to find ways of reducing the high repetition rate among this group of patients.

The aims of the studies were to investigate risk factors associated with repeated DSH and suicide, to stratify a DSH population according to the risk of repetition, to develop and validate clinical decision rules that predict repetition of DSH and to investigate follow-up care for DSH patients and its impact on repeated DSH.

**Study I:** In this study risk factors associated with repeated DSH among 1524 patients attending the ED due to DSH were identified and the patients were stratified into risk categories. New DSH or suicide was identified via national registers. A model for risk stratification for repeated DSH describing groups of low-risk (18%), median-risk (28% to 32%) and high-risk (47% to 72%) was presented.

**Study II:** The aim was to develop a clinical decision rule, the Södersjukhuset Self-harm Rule (SoS-4), based on factors found to be associated with repeated DSH in Study I and also to validate an existing clinical tool for assessing risk after DSH, i.e., the Manchester Self-Harm Rule (MSHR). The SoS-4 uses five clinical correlates: gender, antidepressant treatment, history of self-harm, admission to a psychiatric clinic and current psychiatric treatment. The MSHR uses four clinical correlates: history of self-harm, previous psychiatric treatment, self-poisoning with benzodiazepines and current psychiatric treatment. The SoS-4 yielded a sensitivity of 90% and a specificity of 18% when applied to the DSH population in Study I and application of the MSHR yielded a sensitivity of 89% and a specificity of 21%.

**Study III:** The aim was to prospectively validate the ability of the two clinical decision rules, SoS-4 and MSHR, to predict repetition of DSH in a new population and new setting. Included were 325 DSH patients in the EDs of Södersjukhuset and Karolinska University Hospital Huddinge who were followed for six months. Application of the SoS-4, to this new DSH population, yielded a sensitivity of 89% and a specificity of 12% and application of the MSHR a sensitivity of 95% and a specificity of 18%.

**Study IV:** The aim was to investigate follow-up care of DSH patients and its impact on repetition, which was done in the same study population as in Study III. A visit to a psychiatric consultant within 10 days was registered as an early follow-up. When adjusting for risk factors known to be associated with repetition there was an indication of early followed-up patients being less inclined to repeat their DSH actions.

**Conclusions:** This thesis, focusing on DSH patients in a somatic ED, demonstrated that there are risk factors associated with repeated DSH that can be used to identify DSH patients at risk for repetition and that both clinical decision rules, the SoS-4 and the MSHR, can be useful in the clinical assessment of DSH patients in conjunction with psychiatric assessment. This thesis also demonstrated that there was an indication of early followed-up patients being less inclined to repeat their DSH actions after adjusting for risk factors known to be associated with repeated DSH.