Aggression and Risk of Future Violence in Forensic Psychiatric Patients with and without Dyslexia

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Dyslexia does not cause criminal behaviour, but it may worsen aggressive behaviour tendencies. In this study, aggressive behaviour and risk of future violence were compared between forensic psychiatric patients with and without dyslexia. Dyslexia was assessed using the Swedish phonological processing battery 'The Pigeon'. The patients filled in the Aggression Questionnaire, and trained assessors performed the risk assessments using HCR-20 version 2. Patients with dyslexia self-reported more aggressive behaviour compared with those without dyslexia. There was only a nearly significant tendency (p = 0.06) for the patients with dyslexia to receive higher scores in the HCR-20 compared with the patients without dyslexia, and phonological processing skills did not significantly predict aggression or risk of future violence. However, regression analyses demonstrated that poor phonological processing skills are a significant predictor of anger, which in turn significantly predicts risk of future violence.

Keywords: dyslexia; adults; phonological awareness; aggression

Dyslexia is a disorder characterized by deficient phonological processing skills (Siegel, 1993), which result in poor reading and spelling (Shaywitz et al., 1999). Besides language difficulties, some people with dyslexia have behaviour problems, and dyslexia is over-represented in law offenders (Grigorenko, 2006). Dyslexia does not cause criminal behaviour, but according to Larson (1988), who evaluated different hypotheses concerning the association between learning disabilities and delinquency, poor social and cognitive problem-solving skills could be the underlying cause of the relationship between learning disabilities and delinquency. Other underlying factors that might explain the relationship between dyslexia and behaviour problems are early language problems (Gellert & Elbro, 1999), and Attention Deficit Hyperactivity Disorder (Grigorenko, 2006). Some studies do not support the notion of a relationship between dyslexia and aggressive or criminal behaviour (Arnold et al., 2005), whereas other studies indicate that dyslexia may worsen pre-existing aggressive behaviour tendencies (Cornwall & Bawden, 1992). Poor reading has been found to be associated with violence, and in incarcerated juvenile delinquents, the most violent behaviour is found among the poorest readers (Lewis, Shanok, Balla, & Bard, 1980). Lindgren et al. (2002) reported that inmates with
dyslexia are guilty of more violent crimes than are inmates without dyslexia. Also, according to Webster, Douglas, Eaves, and Hart (1997), violent behaviour is a risk factor for future violence. According to a review by Harris, Baltodano, Artiles, and Rutherford (2006), poor reading ability is more frequent among juvenile offenders that relapse into crime, especially violent crime, than among non-recidivating juveniles. Therefore, we wished to investigate whether there is a higher risk of violent criminality in forensic psychiatric patients with dyslexia than in those without dyslexia.

**METHOD**

Thirty-two forensic psychiatric patients (26 male and 6 female) at the Forensic Psychiatric Centre in Sundsvall, Sweden, participated voluntarily. All the participants were in institutional care at the Centre, which is classified as a high-security hospital and had 81 patients when the study was performed. Patients with mental retardation and flourishing psychosis were excluded. The participating patients were able to communicate fluently in Swedish. Twenty-one of them had been sentenced for violent crimes, four for sexual crimes, and one patient for other crimes. Two of the patients had never been sentenced for any crime, but were considered dangerous to themselves or to others, so they could not receive care in a general psychiatric institution. The study was approved by the Regional Ethical Review Board in Stockholm.

The participants performed a Swedish battery of phonological processing tasks, ‘The Pigeon’ (Lundberg & Wolff, 2003; Wolff & Lundberg, 2003), involving six different tasks: self-reported dyslexic problems, working memory, vocabulary with phonologically confusable alternatives, reversed spoonerism, phonological choice, orthographic choice. The number of correct answers gives the total score for the battery. In the manual of ‘The Pigeon’, Lundberg and Wolff described the standardization procedure for the battery. Two hundred and seventy-one persons with a previous dyslexia diagnosis or teacher-rated dyslexia were compared with a group without dyslexia consisting of 222 persons. The group with dyslexia performed significantly poorer (\(p < 0.001\)) on all tasks in the battery and on the total score compared with the group without dyslexia. According to Lundberg and Wolff, persons with a total score below 140 are in the critical zone for having dyslexia. This critical value is based on the analysis of the frequency distribution of the total score and the standard error of measurement. A logistic regression analysis showed that the battery correctly identified 96% of those classified as having dyslexia based on a previous diagnosis and teacher ratings. Reliability was sufficient for the tasks in the battery (test–retest reliability 0.73–0.91; Cronbach’s alpha 0.68–0.91). In this study, 18 patients (here: patients with dyslexia) scored in this zone (\(M = 106.7, SD = 22.1\)) and 14 (here: patients without dyslexia) above this zone (\(M = 172.1, SD = 24.5\)).

Neither length of education, age, immigrant background, nor psychiatric diagnoses differed between patients with and without dyslexia. The mean length of education in the patients with dyslexia was 10.1 years (SD = 1.5) and in those without dyslexia 10.5 years (SD = 1.9) [\(t (30) = 0.80, p = 0.43\)]. Mean age was 38.1 years (SD = 10.9) in the patients with dyslexia, and 36.8 years (SD = 9.4) in those without dyslexia [\(t (30) = -0.36, p = 0.72\)]. When the patients were asked if they thought they had problems with reading and writing (e.g. reading papers, subtitles on TV, or books, and filling in forms or writing letters), 56% of the patients with dyslexia and 14% of those without dyslexia self-reported such problems [\(\chi^2 (1) = 5.72, p = 0.03\)]. Two patients with dyslexia had a mother tongue other than Swedish, while all patients without dyslexia had Swedish as their first language.
We used two well-established instruments for measuring aggression and risk of future violence. Aggression was measured using a Swedish version (Lindqvist, Dåderman, & Hellström, 2005) of the self-reporting instrument Aggression Questionnaire (Buss & Perry, 1992), consisting of a Total scale divided into four subscales: Physical Aggression, Verbal Aggression, Anger, and Hostility. All items were rated by the participants on a five-point scale from 'Extremely uncharacteristical of me' to 'Extremely characteristical of me', and summed for each subscale. The Total scale consists of all 29 items in the Aggression Questionnaire. Physical as well as Verbal Aggression represents either an instrumental or a motor behaviour that is characterized by the urge to hurt or harm other persons. The affective component of aggressive behaviour is Anger, which includes physiological arousal. The cognitive component of aggressive behaviour is measured with Hostility, which includes feelings of ill will and injustice. Buss and Perry reported that the internal consistency for each subscale was acceptable (Cronbach's alpha 0.72–0.89). The patients were given oral instructions and, if they wished, the questionnaire was read aloud to them.

As a measure of the estimated risk of future violence, we used the risk assessment instrument HCR-20 version 2 (Webster et al., 1997), in its equivalent Swedish version (Belfrage & Fransson, 2000). HCR-20 has three subscales, which are summed to a Total score. The Historical Scale includes 10 static risk factors: Previous violence, young at first violence, relationship instability, employment problems, substance abuse, major mental illness, psychopathy, early maladjustment, personality disorder, and prior supervision failure. The Clinical Scale includes five dynamic risk factors: lack of insight, negative attitudes, active symptoms, impulsivity, and unresponsiveness to treatment. The Risk Management Scale includes five dynamic risk factors: plans lack feasibility, exposure to destabilizers, lack of personal support, noncompliance with remediation attempts, and stress. HCR-20 has shown good interrater reliability (r = 0.80; Douglas & Webster, 1999), and is a good instrument for predicting future violence to property, verbal aggression, and physical violence (Gray et al., 2003).

Risk assessments using HCR-20 are part of the routine work at the Forensic Psychiatric Centre in Sundsvall. Besides the trained assessors’ interviews with the patients and their caregivers, information is gathered from forensic psychiatric investigations, sentences, and journals. For patients who had been HCR-20 assessed more than once during the present care, the first assessment was used in this study.

RESULTS

Patients with dyslexia self-reported significantly more aggressive behaviour than did patients without dyslexia (see Table 1). Although aggressive behaviour is a known risk factor for future violence (Webster et al., 1997), and the patients with dyslexia self-reported more aggressive behaviour compared with the patients without dyslexia, there was only a weak tendency for the patients with dyslexia to have a higher HCR-20 estimated risk of future violence (see Table 1).

The total score of ‘The Pigeon’ neither significantly predicted the total score of the Aggression Questionnaire \([F (1, 31) = 2.41, \ p = 0.13, \ \beta = -0.27]\) nor the total score of HCR-20 \([F (1, 31) = 1.09, \ p = 0.31, \ \beta = -0.19]\). The total score of the Aggression Questionnaire was positively related to the total score of HCR-20 \([r (32) = 0.54, \ p = 0.001]\). The total score of ‘The Pigeon’ had nonsignificant correlations with the subscales in the Aggression Questionnaire and HCR-20, the only exception being Anger \([r (32) = -0.35, \ p = 0.048]\). Anger, in turn, explained 35% of the variance in the total score of HCR-20 \([F (1, 31) = 16.18, \ p < 0.001, \ \beta = 0.59]\).
DISCUSSION

In line with previous research, our patients with dyslexia self-reported higher levels of aggression, especially anger, than did the patients without dyslexia. High levels of anger may reflect irritability, frustration, as well as emotional liability (Buss & Warren, 2000). One possible explanation for the higher levels of anger in the patients with dyslexia is provided by the reformulated frustration–aggression hypothesis (Berkowitz, 1989). According to this hypothesis, aggression occurs due to angry feelings, which may be a result of psychological discomfort (e.g. frustration). Berkowitz stated that our exposure to negative experiences, as well as our learning history, is important for how we handle psychological discomfort. Memories are linked together with feelings and ideas into a network, which can be activated by any of its components. In accordance with the results of the regression analyses, we may assume that recurring negative feelings occur in our patients with dyslexia owing to their difficulties reading newspapers, TV subtitles, letters, manuals, timetables, etc. Memories of negative experiences in school, together with such daily reading failures, can cause psychological discomfort and activation of the network. This may explain why patients with dyslexia have higher levels of anger than patients without dyslexia. According to our results, anger is a significant predictor of scores in the HCR-20, and therefore anger may be seen as a likely dynamic risk factor for future violence (Douglas & Skeem, 2005). The sample size is small; hence, the regression analyses should be interpreted carefully and not be generalized to other samples. The HCR-20 is a well-established instrument that gives us a measure of risk for future violence, and therefore a follow-up study should be performed so it can be determined whether patients with dyslexia relapse more often in violent crimes than patients without dyslexia. The risks for other types of crimes than violent ones are not assessed with HCR-20.

As estimated using HCR-20, patients with dyslexia had only a slightly higher risk of future violent criminality compared with the patients without dyslexia. This result must be interpreted carefully because of the limited sample size and the p-value of 0.06 that just fails
to reach significance. Phonological processing skills were not a significant predictor of HCR-20 scores, and therefore our results indicate that dyslexic problems are not a major risk factor for future violence. However, anger is a significant predictor of HCR-20 scores. Therefore, the elevated level of self-reported aggression in patients with dyslexia should be investigated further in order to clarify whether dyslexia in forensic psychiatric patients results in an increased risk of violence. If such a relationship is established, it becomes important to integrate the assessment of dyslexic problems into risk management to increase its efficiency. However, besides a research focus on a possible relationship between dyslexia and risk of future violence, the remediation of dyslexic problems should be paid attention to in forensic psychiatric care. It would be of value for each individual patient to improve his or her reading and writing abilities, and thereby be more prepared to literately fend for themselves in the society after the forensic psychiatric care.

REFERENCES


