



# Prevalence and putative risk markers of challenging behavior in students with intellectual disabilities



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## ARTICLE INFO

### Article history:

Received 7 August 2015

Received in revised form 1 July 2016

Accepted 11 August 2016

Available online 5 September 2016

Number of reviews completed is 2

### Keywords:

Intellectual disability

Challenging behavior

Risk markers

Children

Adolescents

DBC

## ABSTRACT

Numerous studies have reported a high prevalence of challenging behavior among students with intellectual disabilities (ID). They discuss different putative risk markers as well as their influence on the occurrence of challenging behavior. The study investigates the prevalence of challenging behavior and evaluates in terms of a replication study well-known putative risk markers among a representative sample of students with ID ( $N = 1629$ ) in Bavaria, one of the largest regions in Germany. The research is based on a modified version of the Developmental Behavior Checklist (DBC). Findings indicate a prevalence rate of 52% for challenging behavior. The following putative risk markers are associated with challenging behavior: intense need for care, male gender, lack of communication skills, and residential setting. These risk markers explain 8.4% of the variance concerning challenging behavior. These results reveal that challenging behavior either is to a large extent determined by situations and interactions between individuals and environment and cannot be explained by the measured individual and social risk markers alone, or it is determined by further risk markers that were not measured.

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## 1. Introduction

Numerous studies report that challenging behavior, defined as a deviant level of emotional or behavioral problems, is widespread among persons with intellectual disabilities (ID; Matson et al., 2011). Based on research carried out over the past 40 years, Alimovic (2013) summarized that the prevalence of challenging behavior is three to seven times higher among people with ID than among typically developing children and adolescents. Several putative risk markers such as gender, age, degree of ID, and autism spectrum disorder (ASD) have been discussed (Einfeld, Ellis, & Emerson, 2011; Felce & Kerr, 2013; McClintock, Hall, & Oliver, 2003).

Therefore, the following questions arise: Which putative risk markers increase the likelihood of challenging behavior among students with ID from a large representative sample, and how important are these factors? The current study, representing a replication study, addresses these questions and presents prevalence rates as well as putative risk markers among a representative sample in Bavaria, Germany.

The term *challenging behavior* has been discussed using various definitions thus leading to a substantial variety of prevalence rates. Koritsas and Iacono (2012a) presented an overview of numerous definitions, timeframes, and topographies of

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various studies that explain such different results. The current study refers to the same definition of behavioral and emotional disorder as used by Einfeld and Tonge for the Developmental Behavior Checklist (DBC):

Where behavior and emotions are abnormal by virtue of their qualitative or quantitative deviance, and cannot be explained on the basis of developmental delay alone and cause significant distress to the child carers or the community, as well as significant added impairment, then these behaviors and emotions are regarded as disordered (Einfeld & Tonge, 1995; p. 87).

The DBC is completed by parents or caregivers and assesses the behavior of children or adolescents. Einfeld and Tonge (1996) used it to interview 454 parents and caregivers in North South Wales (Australia). The study revealed that 40.7% of the children age 8–18 showed severe emotional and behavior disorder. Cormack, Brown, and Hastings (2000) used the DBC in a regional school sample with 123 children age 4–18. In this study, parents carried out the assessment, which showed that 50.4% of children were above the cutoff mark. Molteno, Molteno, Finchilescu, and Dawes (2001) interviewed the teachers of 355 children attending special schools in Cape Town, South Africa, with the Developmental Behavioral Checklist–Teacher Version (DBC–T). The prevalence rate in this study was reported as 31%.

Studies investigating challenging behavior in children with ID often apply the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001). As with the DBC, the CBCL assesses children by interviewing parents or caregivers. The Teachers Report Form (TRF), a special version for assessment with teachers, also has been developed. Dekker, Koot, van der Ende and Verhulst (2002) used the parent and teacher version of the CBCL in a study of 2896 children in the Netherlands, 1041 of them with ID and 1855 without ID. Parents completed the CBCL, while teachers filled in the TRF. Here, 50% of the children with ID showed results above the cutoff, in comparison to 18% of those without ID.

Gosch (2004) conducted a smaller German study ( $N = 111$ ) in which mothers completed the CBCL. Sixty-three percent of the children with mild or moderate ID were above the cutoff ( $n = 25$ ). Likewise, using the CBCL in Berlin, Germany, Soltau, Biedermann, Hennicke, and Fydrich (2015) asked teachers of specialized schools for ID to complete the TRF. They gathered information from some 1226 children and adolescents with mild to profound ID. Initially, 52.4% of them were above the cutoff mark; however, three items reflecting cognitive deficits were deleted, and the prevalence rate dropped to 47.1%.

Regarding risk markers for challenging behavior, Alimovic (2013) and Dekker et al. (2002) both described the risk of developing challenging behavior as three to four times higher for children with ID than for those without ID. McClintock et al. (2003) conducted a meta-analysis of studies from the past 30 years and found the following risk markers: gender, age, degree of ID, ASD, degree of communicative impairment, degree of motor impairment, and degree of sensory impairment. An empirical secondary analysis of these studies showed severity of ID, ASD, and poor communication ability as risk markers for challenging behavior.

Gosch (2004) found the degree of ID and the extent of behavior problems in childhood to be significant risk markers. In the study ( $N = 111$ ), gender, birth weight, and socioeconomic status (SES) of the family did not prove to be significant. According to the applied regression model, 45% of the variance could be explained in this study. In a literature review of nine studies addressing the comorbidity of ID and mental disorder in children and adolescents, Einfeld et al. (2011) pointed out that possible risk markers are age, gender, severity of ID, and SES. These studies, however, are inconsistent with regard to the individual statistical results of the factors. Felce and Kerr (2013) carried out a secondary analysis of existing data ( $N = 818$ ) and found ASD, level of adaptive behavior, and age to be influential risk markers for challenging behavior, whereas gender was not proven to be significant. In this study, 25% of the variance could be explained with the regression model.

In reviewing the literature, Koritsas and Iacono (2012a, 2012b) defined a difference between risk markers and causes. They described risk markers as context, gender, age, severity of ID, associated impairments, and residential settings. The literature, however, shows inconsistent results for each of these factors. Concerning the causes, Koritsas and Iacono (2012b) distinguished three theoretical approaches: applied behavior analysis (ABA), biological factors, and psychiatric disorders. The obvious complex nature of causes for challenging behavior led them to suggest a biopsychosocial model that can take a variety of causes into account.

An overview of the literature suggests two key questions that are addressed in the present study: What is the prevalence rate, and what are the main risk markers of challenging behavior among persons with ID? According to Koritsas and Iacono (2012a, 2012b), we do not understand risk markers as causal conditions and rather prefer an understanding as correlates. Therefore, we use the term *putative risk markers*.

Studies applying either the DBC or the CBCL report similar results regarding the prevalence of challenging behavior. In regard to the occurrence of challenging behavior there are well-established risk markers (e.g., level of ID, need for care, communication, gender, residential setting). This study evaluated these well-established correlates for challenging behavior and intellectual disability in order to replicate the results in a large and representative sample of students with ID.

## 2. Methods

### 2.1. Participants and enrollment

The current study was conducted in the German federal state of Bavaria. The sample is the same as described in Ratz and Lenhard (2013). With 12.5 million inhabitants, Bavaria is one of the largest regions in Germany and contains rural as well as urbanized and metropolitan areas such as Munich (Bundesamt für Bauwesen und Raumordnung, 2011). Bavaria is further subdivided into seven local districts, differing slightly in their school policies. Bavarian students with ID are offered

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