The danger of being inattentive – ADHD symptoms and risky sexual behaviour in Russian adolescents

J. Isaksson a,b,* , A. Stickley c,d , R. Koposov e , V. Ruchkin a,f,g

1 Department of Neuroscience, Child and Adolescent Psychiatry Unit, Uppsala University, Uppsala, Sweden
2 Department of Women's and Children's Health, Pediatric Neuropsychiatry Unit, Centre for Neurodevelopmental Disorders at Karolinska Institutet (KIND), Karolinska Institutet, Stockholm, Sweden
3 Department of Child and Adolescent Mental Health, National Institute of Mental Health, National Centre of Neurology and Psychiatry (NCNP), 4-1-1 Ogawahigashi, Kodaira, 187-8553 Tokyo, Japan
4 The Stockholm Centre for Health and Social Change (SCOHAST), Södertörn University, 14189 Huddinge, Sweden
5 Regional Centre for Child and Youth Mental Health and Child Welfare, The Arctic University of Norway, Tromsø, Norway
6 Child Study Centre, Yale University School of Medicine, New Haven, CT, USA
7 Säter Psychiatric Clinic, Säter, Sweden

A R T I C L E   I N F O

Article history:
Received 30 June 2017
Accepted 10 September 2017
Available online xxx

Keywords:
Attention-deficit/hyperactivity disorder
Conduct problems
Risky sexual behaviour
Binge drinking
Perception of risk

A B S T R A C T

Background: Prior research has indicated that attention-deficit/hyperactivity disorder (ADHD) symptoms may be associated with an increased likelihood of engaging in risky sexual behaviour (RSB). However, research on this association among adolescents has been comparatively limited and mainly confined to North America. The aim of this study was to examine if inattention and hyperactivity/impulsivity symptoms were linked to RSB in a community cohort sample of Russian adolescents.

Methods: The study was based on a group of 537 adolescents from Northern Russia. Information on inattention and hyperactivity/impulsivity as well as conduct problems was obtained through teacher ratings, while information on RSB (previous unprotected sex, number of sexual partners, sex while intoxicated and partner pregnancies), substance use, perception of risk, and parenting behaviour was based on students’ self-reports. Binary logistic regression analysis was used to examine associations between the variables.

Results: Teacher-rated inattention symptoms predicted RSB, independently of co-morbid conduct problems, substance use, risk perception, and different parenting styles (parental warmth, involvement and control). In addition, male sex, binge drinking and a lower assessment of perceived risk were all significantly associated with RSB in an adjusted model. Neither teacher-rated hyperactivity/impulsivity symptoms nor conduct problems were linked to RSB in the full model.

Conclusion: Deficits in planning and organizing behaviours, being easily distracted and forgetful seem to be of importance for RSB in Russian adolescents. This highlights the importance of discriminating between different types of ADHD symptoms in adolescence to prevent risk behaviours and their potentially detrimental outcomes on health and well-being.

R E S E A R C H   A R T I C L E

1. Introduction

Attention-deficit/hyperactivity disorder (ADHD) is a neurobehavioral developmental disorder, characterized by the symptoms of inattention and/or hyperactivity/impulsiveness. The worldwide prevalence of ADHD in children has been estimated at about 5% with a higher prevalence among boys [1]. For many children, ADHD symptoms persist into adulthood with long-term adverse outcomes such as lower educational attainment and income, and more emotional and social problems [2]. Given that the typical features of ADHD include an inability to inhibit impulses and self-regulate, increased reward and sensation seeking behaviour, as well as poor social skills [3], it is not surprising that the disorder has been linked to a number of risk taking behaviours, such as drug and alcohol use, conduct problems [4,5] and risky sexual behaviour (RSB) [5]. However, although there has been an abundance of studies on the link between ADHD symptoms and other types of risk taking behaviour, research on the association with RSB has been limited. In the scientific literature, RSB commonly refers to unprotected sex, multiple sex partners, and hazardous sexual
activity such as sex while intoxicated [6] and is regarded as a major
criticality problem during adolescence [7,8]. The handful of
previous studies on the association between ADHD symptoms and
RSB have been mostly undertaken among adults [9–12] especially
males [9,13]. The research has indicated that ADHD is associated
with early sexual debut, multiple sexual partners and more partner
pregnancies [9,10,13,14].

Against this backdrop it has been suggested that not only is
there a need for more studies on this association in adolescents, but
also, for a greater focus to be placed on the dimensional aspects of
ADHD, where both symptom clusters – inattention and hyperac-
tivity/impulsivity – are investigated separately [12]. In particular,
impulsivity has been proposed as a likely causal pathway to RSB,
with a recent review finding a small but significant association
between impulsivity and RSB [7]. Comorbid conduct problems
might also have a causal role in the emergence of RSB
[12]. However, the few studies to date that have included conduct
problems as a covariate, have produced conflicting results. Some
reports suggest that hyperactivity is associated with early sexual
intercourse [9] and that ADHD symptoms are associated with early
sexual intercourse, more sexual partners, more casual sex and
more partner pregnancies [13] independently of conduct
problems. Other research found an association with early sexual
intercourse only when hyperactivity/inattention symptoms oc-
curred in combination with conduct problems [15] or even that an
early sexual debut and high-risk sexual behaviour is evident only
among those young adults with a history of childhood disruptive
behaviour, whereas hyperactivity symptoms are unrelated to RSB
[11]. In addition, it has been suggested that the association
between ADHD and RSB is mediated by conduct problems in
combination with substance use [12].

When examining the association between ADHD symptoms
and RSB, it might be beneficial to employ a multisystemic
framework, since there are several interweaving factors besides
conduct problems, associated with adolescent sexual activity, such
as those that relate to:

- the adolescent him/herself (e.g. behaviour and attitude);
- the adolescent’s family (e.g. the parent–child relationship);
- or that involve extra-familial systems (e.g. peer pressure) [16].

For example, previous research has shown that parenting
behaviours, such as parental monitoring, parental support and
parent–child communication, are associated with a lowered risk
for involvement in high-risk behaviour, including RSB, during
adolescence [16,17]. However, very few studies have used a
multisystemic approach, when investigating the association
between ADHD and RSB.

Despite an increasing number of publications suggesting an
association between ADHD symptoms and RSB, to the best of our
knowledge, there has been limited research exploring this
association outside North America. To address this deficit the
current study uses data from Russia. There is reason to believe that
Russia might be an especially suitable location for this research.
Although there is some evidence that the prevalence of ADHD
(hyperkinetic disorder) may be similar in Russian and Western
children [18], other evidence suggests that sexual risk behaviour is
widespread among young people in Russia. Specifically, in an
environment where sex education is not taught regularly or
systematically in schools [19], a large number of adolescents are
engaging in early sexual activity [20] with alcohol playing an
important role in sexual risk behaviour [21]. Indeed, Russia is
currently one of the countries with the highest teenage pregnancy
and abortion rates in Europe [22]. In such circumstances, determining the role of inattention and hyperactivity/impulsivity in RSB may have important public health consequences. The current study thus has three main aims:

- to determine whether inattention and hyperactivity/impulsivity
  symptoms are associated with RSB in Russian adolescents;
- to examine if other factors such as conduct problems, parent–
  child relations and risk perception are important in this
  association;
- to investigate if there are sex differences in ADHD symptoms
  and RSB.

2. Methods

2.1. Participants and procedure

This study builds on and extends an earlier study that
assessed ADHD symptoms and psychopathology in Russian
adolescents [23] that was conducted in 2003 in Arkhangelsk, a
large city in the Northwestern part of European Russia. In
Arkhangelsk, the population’s socioeconomic status (SES) is in
the low to average range for the whole of Russia. The study
participants, 337 adolescent school students (12–17 years of age;
mean age 14.37 [SD = 0.96]), were recruited using a two-stage
selection process, where school buildings and classes were
randomized in order to obtain a representative sample of the
adolescent school-age population. Information was collected from
both the adolescents and their classroom teachers. The majority of
the participants were of Slavic origin (Russian = 92.5%, Ukraini-
an = 1.1%, Byelorussian = 1.9%, other = 4.5%) and 27.1% of them
came from single-parent households. In addition, the reported
unemployment rates were 14.3% for mothers and 10.5% for fathers,
while 15.5% of mothers and 13.6% of fathers were employed part-
time. More detailed information regarding the study procedure can
be found in Ruchkin et al. [23]. Informed consent was obtained
from all participants prior to their inclusion in the study. The study
was approved by the institutional review committee at the
Northern State Medical University (Arkhangelsk, Russia).

2.2. Measures

2.2.1. Outcome variable

Self-rated Risky sexual behaviour was assessed with four
questions about students’ sexual behaviour:

- “How many people have you had sexual intercourse with?”,
- “The last time you had sexual intercourse, had you been drinking
  alcohol or using drugs?”,
- “The last time you had sex did you or your partner use a
  condom?”,
- “How many times have you been pregnant or got someone
  pregnant?”.

As the RSB scores were positively skewed with a large number
of students not engaging in any form of RSB, in the analyses that
follow the RSB variable was dichotomized so that any student that
reported one instance of engaging in at least one RSB, i.e. having
more than one sexual partner, using substances during last
intercourse, not using a condom during last intercourse and ever
being/getting someone pregnant was categorized as having
engaged in RSB.

2.2.2. Independent variable

Teacher-rated inattention and hyperactivity/impulsivity symp-
toms were obtained with the modified version of the ADHD
Rating Scale IV, originally developed by DuPaul et al. [24] and

Please cite this article in press as: Isaksson J, et al. The danger of being inattentive – ADHD symptoms and risky sexual behaviour in
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