



Associations between school difficulties and health-related problems and risky behaviours in early adolescence: A cross-sectional study in middle-school adolescents in France



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ABSTRACT

Health-related problems and risky behaviours (substance use) are frequent in adolescents, may alter their physical and mental capabilities, and may thus generate school absenteeism, low academic performance, and school dropout ideation. This study assessed their associations and the contribution of socioeconomic factors among 1559 middle-school adolescents (mean age 13.5+1.3) from north-eastern France. They completed a questionnaire including socioeconomic characteristics, health-related problems (poor physical health, psychological health, social relationships, and living environment) assessed with the World Health Organization's quality of life measure (score < 25th percentile), risky behaviours, school absences during the present school year, last-trimester academic performance, and school dropout ideation. Data were analysed using logistic regression models. School absenteeism was frequent (12.6% of subjects for 8–14 days, and 6.0% for ≥ 15 days); 8.2% of subjects had low academic performance (average school-mark < 10/20) and 3.9% school dropout ideation. All school difficulties were strongly associated with all health-related problems (gender-age-school-level-adjusted odds ratios gasOR between 1.5 and 4.2), and with risky behaviours (gasOR between 1.4 and 14). Socioeconomic factors differently contributed to these associations (contribution reaching 77%). Policy makers, schools, physicians and parents should be more aware of the problems and help adolescents to reduce health-related problems and risky behaviours and to increase resilience.

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1. Introduction

Poor academic performance affects many adolescents (Egger et al., 2003; Henry and Huizinga, 2007; Wood et al., 2012; Chau, 2012). It favours suicide attempts, drug dependence, cerebrovascular diseases and accidents in adulthood (Almquist, 2013; Kosidou et al., 2014). It may occur early, persist over time, and lead to school dropout without qualification as a result of long-lasting lack of learning motivation, for example, failure in expectation and

belief in school project (Fan and Wolters, 2014). To attain school achievement, students need social, material, physical, and mental resources, but they are often lacking. The knowledge of the risk patterns associated with health-related problems and risky behaviours may help prevention to reduce school difficulties which include school absenteeism, poor academic performance, and school dropout ideation.

School difficulties do not randomly occur, but may be described as an imbalance between learning conditions and student's capacities to deal with them. Health-related problems such as poor physical health, psychological health, social relationships, and living environment may be potential risk factors. Indeed, poor physical and mental health may affect work performance, cognitive ability, memory and executive functions (Chau, 2011; Harvey

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et al., 2005; Lagerveld et al., 2010; Strine et al., 2009). Risky behaviours (alcohol, tobacco, cannabis, and hard-drug use) (Hibell et al., 2004; Legleye et al., 2011; Swahn et al., 2012) may affect physical and psychomotor functions, mental health, and cognitive performance (Kalmijn et al., 2002; Nelson et al., 1994; Raphael et al., 2005). They may also be potential risk factors. It may be noted that health problems and risky behaviours are common in early adolescence (Choquet et al., 2008; Chau, 2012; Swahn et al., 2012) and they are modifiable for prevention. Health-related problems and risky behaviours are well known to increase unintentional-injuries (Chau, 2011; Chau et al., 2007, 2011).

In the literature, few studies have reported the associations between school difficulties and health-related problems and risky behaviours. Our previous hypothesis is supported by the results of available studies. In the United States, Cox et al. (2007) and Henry and Huizinga (2007) showed an association between truancy or low academic performance and alcohol, tobacco and marijuana use while Egger et al. (2003) and Wood et al. (2012) a relationship between absenteeism and oppositional defiant disorder, conduct problem and depression. Fergusson et al. (2003) reported that cannabis use acted to decrease educational achievement in young people (15–25 years) in New Zealand. De Ridder et al. (2012) demonstrated that poor self-rated health predicted subsequent high school dropout in Norwegian adolescents. Attwood and Croll (2014) found that truancy was strongly associated with poorer well-being among school pupils in England. Therefore, the associations between school difficulties and various health-related problems and risky behaviours remain poorly documented and an open question.

An important question is the contribution of socioeconomic factors to the associations between school difficulties and health-related problems and risky behaviours. Poor socioeconomic features are well known to favour both health and school issues (Baumann et al., 2007b; Chau, 2012; Chau et al., 2011; Choquet et al., 2008; Legleye et al., 2011; Swahn et al., 2012; Wills et al., 2001). Furthermore, health disorders of people with social and material deprivation are less likely to be treated (Iezzoni and O'Day, 2006; Kopelman et al., 2008; van Beljouwe et al., 2010). In France, the percentage of people under poverty threshold (< 60% of median income) was 14% in 2012 (Institut national de la statistique et des études économiques, 2012). Four million individuals had not complementary health insurance in 2008 (Observatoire des inégalités, 2011). Evaluating the role of socioeconomic factors may reveal vulnerable adolescents who need help to solve their problems.

This study assessed whether health-related problems (poor physical health, psychological health, social relationships and living environment) and risky behaviours (alcohol, tobacco, cannabis, and hard-drug use) were associated with school difficulties measured with absenteeism, low academic performance, and school dropout ideation (ideation to leave school at 16 years without qualification)? It also assessed the confounding/mediating roles of socioeconomic factors. We focused on school difficulties concerning the present school year and risky behaviours which had started before and had continued until the survey. Health-related problems are generally long-lasting since an early age (Chau, 2012). We focused on individuals in middle school students mostly under 16 years because school is compulsory in France until 16 years and school difficulties need to be solved soon via preventive measures and interventions focusing on most potential risk factors.

2. Methods

2.1. Study design

The study population consisted of all middle schools' students (exhaustive population) from a large enough geographical area (38,000 inhabitants) in the Nancy urban area (410,000 inhabitants). Nancy is the capital of Lorraine region (2.3 million inhabitants) in north-eastern France. The geographical area included two public and one private middle schools (63 classes). The study population included 1666 students. It was chosen because it may reflect a social gradient as various social categories are represented.

The study was approved by the Commission Nationale de l'Informatique et des Libertés (national review board) and the regional education authority. Written informed consent was obtained from the parents. In contrast to national studies (Hibell et al., 2004; Legleye et al., 2011; Mayet et al., 2012; Swahn et al., 2012) we focused on a population from an urban area. The adolescents were thus in the same socioeconomic context, without variations across geographical regions. This study is a part of a recent survey on health among French adolescents (Chau et al., 2013, 2014).

An invitation to participate was transmitted to parents/guardians in April 2010. From May to June 2010, the students were invited to fill in an anonymous self-administered questionnaire over a one-hour teaching period. The data collection was made under the supervision of two research-team members, with a possible assistance of teachers for surveillance (with no influence on the study). If adolescents did not understand a question they could ask the research-team members who had been instructed not to say anything that might influence the response (students rarely did so). Adolescents were invited to put their completed questionnaires in a sealed envelope and then in a closed box. During data collection, 11 students (0.7%) were absent for other school trainings, sports tournaments or care at school health centre; 78 (5%) were absent with unknown motives; and two students refused. Sixteen completed questionnaires were excluded: 10 were of unknown gender/age, and 6 were not completed appropriately. Finally, 1559 questionnaires (94%) were retained for statistical analysis. Table 1 shows that the behaviour and health-related difficulties of the study population were similar to those of France (European School Survey Project on Alcohol and Other Drugs (ESPAD) survey; coordinated in France by Marie Choquet at Institut National de la Santé et de la Recherche Médicale and François Beck at Observatoire Français des Drogues et des Toxicomanies; the French study covered all grades from 6 to 12) (Choquet et al., 2008; Hibell et al., 2004; Swahn et al., 2012).

The questionnaire included demographic and socioeconomic characteristics (age, gender, family structure, parents' education, father's occupation, and family income), school level, physical health, psychological health, social relationships, and living environment), risky behaviours (lifetime and current use of alcohol, tobacco, cannabis and hard drugs), school absenteeism, academic performance, and school dropout ideation.

2.2. Measures

2.2.1. School difficulties

The total duration of school absences was assessed with the questions 'What is the total duration of your school absences since the beginning of this school year?' (responses: ≤ 7 , 8–14, 15–30, or ≥ 31 days) and 'What are the motives of the absence(s)? (several responses possible)': 'Health problems', 'Vacation', 'Family problems', 'Skipping school', and 'Others' (responses: yes/no). Low academic performance was assessed with the question 'What is

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