

INDIVIDUAL DIFFERENCES IN LEARNING DIFFICULTY

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Abstract

Correlates of adolescent learning difficulty may include a number of issues sustained across the life course but this is little documented. This study assessed the associations of learning difficulty with socioeconomic, behavior and health-related difficulties in early adolescence. This study included 1,559 middle-school adolescents from north-eastern France, who completed a self-administered questionnaire gathering socioeconomic characteristics (gender, age, nationality, family structure, father's occupation, and family income), measured body mass index, alcohol/tobacco/cannabis/hard drug use, health status, back pain, allergy, depressive symptoms (Kandel scale), sustained physical/verbal violence, sexual abuse, social support, learning difficulty (a 4-item scale: lesson understanding, concentration/lesson learning, follow school pace/constraints, and school interrogations, range 0-4), grade repetition, low school performance (last trimester, <10/20), and school dropout contemplation at 16 years. Data were analyzed using multiple linear and logistic regression models. Learning difficulty score was strongly related to grade repetition (gender-age-adjusted odds ratio 1.56, 95% CI 1.38-1.76), low school performance (2.39, 2.08-2.75) and school dropout contemplation (1.79, 1.50-2.13). Learning difficulty was strongly related to socioeconomic factors (gaRC reaching 0.76). It was also related to alcohol, tobacco, cannabis, and hard drug use (0.22, 0.74, 0.71 and 1.25, respectively), overweight (0.17), obesity (0.43), poor health status (0.45), back pain (0.21), allergy (0.11), depressive symptoms (0.69), sustained violence (0.41), sexual abuse (0.72), and poor social support (0.22). These associations were partly explained by socioeconomic factors (contribution reaching 54% for various factors; it was 109% for alcohol use). These findings suggest that prevention to limit learning difficulty and promote school achievement should focus on socioeconomic, behavior and health-related difficulties in early adolescence.

Keywords: Learning, Adolescents, Individual factors, Family and socioeconomic difficulties.

1. Introduction

Learning difficulty is common in early adolescence (Swahn et al. 2012; Chau 2012). It favors grade repetition, persistent low school performance, and school dropout contemplation at 16 years without qualification. All individuals do not have an equal propensity to learning difficulty i.e. learning difficulty is not a random event but due to enduring individual difficulties which can alter physical, mental and cognitive capabilities. Individual difficulties include family and socioeconomic difficulties and also a wide range of health-related problems and violence sustained by adolescents (Chau 2012, Legleye et al. 2010). Prevention to reduce learning difficulty is thus crucial and should consider individual differences. Unfortunately, the role of family and socioeconomic difficulties, health-related problems, and violence sustained has been partly addressed. This study in early adolescence assessed the relationships of learning difficulty with socioeconomic factors (gender, age, nationality, family structure, father's occupation, and family income), alcohol/tobacco/cannabis/hard drug use, health status, back pain, allergy, depressive symptoms (Kandel scale), sustained physical/verbal violence, sexual abuse, and poor social support. These issues are known to be common in early adolescence and aggravated in early adolescence and adulthood (Chau, 2012).

2. Methods

The study population comprised all 1,666 students attending all of the middle schools in an urban area of Nancy, in Northeastern France. The investigation was approved by the *Commission Nationale de l'Informatique et des Libertés*. Respondent written informed consent was obtained. The study protocol included: an application to participate transmitted to parents via the students and data collection undertaken using an anonymous self-administered questionnaire during a 1h-class period, under the research team supervision (2010). The questionnaire was put in a sealed envelope and then in a closed box by the subject. The questionnaire included socioeconomic characteristics (gender, age, nationality, family structure, father's occupation, and family income), measured body mass index, alcohol/tobacco/cannabis/hard drug use, health status, back pain, allergy, depressive symptoms (Kandel scale) (Kandel & Davies, 1982), sustained physical/verbal violence, sexual abuse, social support, learning difficulty (a 4-item scale: lesson understanding, concentration/lesson learning, follow school pace/constraints, and school interrogations, range 0-4), grade repetition, low school performance (last trimester, <10/20), and school dropout contemplation at 16 years. In total 1,575 completed the questionnaire, of which 10 were of unknown gender or age, 9 were not completed appropriately, leaving 1,559 questionnaires (93.6%) for statistical analysis. The health and health-related behaviors of the sample were close to those of the French adolescent population (Chau, 2012). Data were analyzed using multiple linear and logistic regression models.

3. Results

Boys represented 49.9% of subjects. Mean age was 13.5 (SD 1.3). European and non-European immigrants represented respectively 3.5% and 3.5% of subjects. One quarter of adolescents lived with divorced/separated parents or in reconstructed families, 11.9% with single parents or other non-intact families. Half of subjects had low parents' education, 32.5% low father's social status (manual workers 25.0% and non-working 7.5%), and 17.7% insufficient family income. Alcohol, tobacco, cannabis and hard drug use affected respectively 35.2%, 11.2%, 5.6%, and 2.8% of subjects. Overweight affected 25.5% of subjects, obesity 10.6%, depressive symptoms 13.3%, poor health status 25.8%, back pain 50.6%, allergy 36.6%, sustained physical/verbal violence 16.2%, sexual abuse 3.7%, and poor social support 53.8%. Learning difficulty affected 29.5% of subjects (14.4%, 7.4%, 4.0% and 3.7% had score 1, 2, 3 and 4, respectively). School repetition, low school performance, and school dropout contemplation were also common: 14.7%, 8.2% and 3.8%, respectively. The learning difficulty score was strongly related to school repetition, low school performance, and school dropout contemplation (gender-age-adjusted odd ratios 1.56, 2.39 and 1.79, respectively).

Learning difficulty was strongly related to older age (gender-age-adjusted regression coefficient (SD)=0.074 (0.021)), being European or non-European immigrant (0.34 (0.14) and 0.76 (0.14), respectively, vs. French), living with divorced/separated parents/reconstructed family or single parent (0.34 (0.061) and 0.52 (0.081), respectively, vs. intact family), low parents' education (0.41 (0.051)), father's occupation (reaching 0.50 for manual worker and non-working, vs. managers, professionals, and intermediate professionals), and insufficient income (0.31 (0.068)). Learning difficulty was also related to use of alcohol (0.22 (0.057)), tobacco (0.74 (0.082)), cannabis (0.71 (0.11)), and hard drugs (1.25 (0.16)), overweight (0.17 (0.062)), obesity (0.43 (0.086)), poor health status (0.45 (0.059)), back pain (0.21 (0.053)), allergy (0.11 (0.054)), depressive symptoms (0.69 (0.077)), sustained violence (0.41 (0.071)), sexual abuse (0.72 (0.14)), and poor social support (0.22 (0.036)). These associations were partly explained by socioeconomic factors (contribution reaching 54%; it was 109% for alcohol use).

4. Discussion

Our study shows that learning difficulty was common and often resulted in grade repetition, low school performance, and school dropout contemplation in early adolescence. It reports strong individual differences in learning difficulty which were due to licit and illicit drug use, overweight, obesity, poor health status, back pain, allergy, depressive symptoms, and poor social support. This was expected because most of these issues affect physical, mental and cognitive capabilities as well as working performance (Chau, 2012; Kalmijn, 2002). Our study further reports that individual differences in learning difficulty were also due to violence sustained and sexual abuse. These maltreatments are well known to favor drug usage, depressive symptoms, hopelessness, and altered cognitive development (Chau, 2012), and thus physical, mental and cognitive capabilities. This study reveals that the associations between learning difficulty with health-related difficulties, unhealthy behaviors, sustained violence, sexual abuse, and poor social support were highly explained by family and socioeconomic difficulties. During the last decades, families are greatly changing leading to more children have fewer siblings and live with cohabiting, divorced/separated or single parents (Chau, 2012). A parents' separation/divorce often results in poorer living conditions (residence/living environment change, lower socioeconomic resources, and lower social support).

Limitations and strengths should be mentioned. This study was based on self-reported data which are widely used to study adolescent health. The participation rate was high (94%). Various measures have been used elsewhere (Swahn et al. 2012, Legleye et al. 2010). The prevalence of health/behavior outcomes was similar with that of French adolescents. Every effort was made to guarantee students' anonymity.

5. Conclusion

Learning difficulty was common and can lead to grade repetition, persistent low school performance, and school dropout contemplation without qualification in early adolescence. Individual differences in learning difficulty were due to a number of health-related difficulties, unhealthy behaviors, sustained violence, and poor social support. The association between learning difficulty and these issues was highly explained by family and socioeconomic difficulties. Prevention to limit learning difficulty and promote school achievement should help the adolescents affected to solve their learning problem. It should also focus on health-related difficulties, unhealthy behaviors, sustained violence, and poor social support, especially among the adolescents with family and socioeconomic difficulties.

References

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