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The relationship between mental health and school absenteeism in a community sample of French secondary school students: four profiles derived from cluster analysis

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School absenteeism is a serious problem among youths, varying in etiology and presentation. Youths presenting high levels of absence have previously been linked to mental health problems, academic difficulties and dropout, highlighting the need for early identification and intervention. The aim of this study is twofold: first, to identify profiles among a community sample of secondary school students based on school absence, internalizing and externalizing behavior using the Child Behavior Checklist (CBCL-YSR). Second, to examine the relationship between profiles regarding mental health problems based on the dimensions of the CBCL-YSR, the function of their school absence using the School Refusal Assessment Scale (SRAS) and school refusal using the SChool REfusal EvaluatioN (SCREEN). The profiles are compared on demographic variables, family characteristics, school performance and bullying. A community sample of 469 youths (10-16 year, *M*=12.1 years, *SD*=1.2) from six French secondary publics schools participated in this study. Using cluster analysis, four distinct profiles were identified. The clusters differed significantly on school absence, internalizing problems, externalizing problems, dimensions of the CBCL-YSR, and their function of absence on the SRAS. Clusters differed significantly on several demographic variables, school level, grade, repetition and bullying. The distinctions between the four profiles and their relevance are discussed.

Keywords: School absence, mental health, secondary school, cluster analysis.

La relación entre la salud mental y el absentismo escolar en una muestra comunitaria de estudiantes de secundaria francesa: cuatro perfiles derivados del análisis de conglomerados. El absentismo escolar es un problema grave entre los jóvenes, que varía en etiología y presentación. Los jóvenes que presentan altos niveles de ausencias se han relacionado previamente con problemas de salud mental, dificultades académicas y abandono escolar, lo que destaca la necesidad de una identificación e intervención tempranas. El objetivo de este estudio es doble: en primer lugar, identificar los perfiles de una muestra comunitaria de estudiantes de secundaria en función de las ausencias escolares y los comportamientos internalizantes y externalizantes a través de la Child Behavior Checklist (CBCL-YSR). En segundo lugar, examinar la relación entre los perfiles con respecto a los problemas de salud mental basados en las dimensiones del CBCL-YSR, la función de su ausencia escolar utilizando la School Refusal Assessment Scale (SRAS) y el rechazo escolar utilizando la SChool REfusal EvaluatioN (SCREEN). Los perfiles se comparan en variables demográficas, características familiares, rendimiento escolar y bullying. Una muestra comunitaria de 469 jóvenes (10-16 años, *M*=12.1 años, *SD*=1.2) de seis escuelas públicas francesas secundarias participó en este estudio. Usando el análisis de conglomerados, se identificaron cuatro perfiles distintos. Los grupos diferían significativamente en la ausencia escolar, la internalización de problemas, la externalización de problemas, las dimensiones del CBCL-YSR y su función de ausencia en el SRAS. Los grupos diferían significativamente en varias variables demográficas, nivel escolar, grado, repetición y acoso escolar. Se discuten las diferencias entre los cuatro perfiles y su relevancia.

Palabras clave: Absentismo escolar, Salud mental, Escuela secundaria, Análisis de conglomerados.

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School is a central arena for youths to develop their academic and social skills, and absence from this arena may disturb this development. High levels of school absenteeism have been related to poorer academic performance, decreased social engagement and predict repetition in school as well as dropout (Gottfried, 2014). School absenteeism has been linked to internalizing and externalizing mental health disorders (Heyne & Sauter, 2012). There are also negative health and economical aspects related to absenteeism. Individuals with high levels of absenteeism are more likely to seek health-risk behavior (e.g. smoking, alcohol, substance use), and face unemployment later in life (Gottfried, 2014). These highlighted consequences are related to high and long-term school attendance problems (SAP). To counteract SAP, early identification of absence from school is paramount (Ingul, Havik, & Heyne, 2018). Research shows that school absences have a tendency to increase over time, and that any amount of absence from school is related to a decline in academic performance (Hancock, Sheperd, Lawrence, & Zubrick, 2013). Hence, identification of different profiles and risk factors regarding school absence may be relevant for early intervention.

SAP is a collective term comprised of different types of absenteeism who all have a level of school absence that is problematic for the students (Heyne, Gren-Lendell, Melvin, & Gentle- Genitty, 2018). What constitutes as problematic school absence varies from country to country, and from school to school. However, most definitions use a cut-off or limit of school absences (e.g. days, hours), over a certain time period (e.g. week, months). While there is no, universal consensus on definitions for problematic and non-problematic school absence, Kearney's criteria (2008) for problematic absenteeism is probably the most used. The criterions succeed in encompassing diverse patterns and types of school absenteeism and bring some consensus to what defines problematic absenteeism. However, there are some drawbacks related to using a set of pre-defined criteria. In a study by Hancock and colleagues (2013) they found that every day missed from school had a negative impact on the youth's academic achievement, and that absenteeism accumulated over time. Indicating that there is no "safe threshold" for what amounts to harmful or problematic school absence. Kearney's criterion might be too conservative, thus creating a risk of identifying and intervening problematic school absences too late. In a later study, Kearney and Graczyk (2014) also highlighted the importance of early identification and intervening in regards to problematic absenteeism, and advocated for avoiding the "wait to fail" approach where schools and parents identify and intervene to late. By identifying risk factors for SAP, youths presenting these factors can more easily be identified and more preventive approaches can be implemented before the school absence develops to SAP. In this paper, we aim to contribute to that objective.

Mental health and school absence

Previous studies have looked at the link between mental health problems and school absenteeism among students with SAP. Research shows that students presenting SAP typically display internalizing problems such as anxiety (Egger, Costello, & Angold, 2003), and externalizing problems like attention deficit hyperactivity disorder, oppositional defiant disorder and disruptive behavior (Kearney & Albano, 2004). In a community study by Egger et al. (2003), absent students had a higher prevalence of mental health issues than non-absent students, and the absent youths mainly displayed depression, conduct disorders and anxiety disorders. Despite the high proportion of mental health issues among absent students, several studies also convey that many youths with school absenteeism demonstrate no psychiatric conditions (Egger et al., 2003; Kearney, 2008; Kearney & Albano, 2004). This illustrates the complex nature of SAP, and highlights a need to focus on a broad range of risk factors related to the development of SAP.

Risk factors related to school absenteeism

In recent years, studies have investigated different risk factors related to school absenteeism. In a study by Ingul and colleagues (2012), risk factors related to *family work and health* (e.g. parent's unemployment, self-reported health,), *school environment* (e.g. having a negative contact with the teacher, being treated with disrespect in the school setting), and externalizing behavior were identified as major risk factors for predicting school absenteeism. Bullying was also a significant predictor for school absence. Interestingly, internalizing problems, collectively, did not significantly predict the total amount of absence. However, all internalizing factors were alone, at single factor level, significant predictors of school absence (Ingul, Klöckner, Silverman, & Nordahl, 2012). Their results were comparable to those of Egger et al. (2003) who found that all individual diagnoses of internalizing problems significantly predicted school absence, but when controlled for comorbidity only separation anxiety and depression significantly predicted school absence. These studies indicate that internalizing and externalizing problems as well as other factors regarding school environment and family factors are important risk factors related to school absenteeism.

The French school system and registration of absence in secondary school

In France, school is compulsory from the age of six until the age of sixteen. Compulsory education consists of primary school (five grades) and secondary school (four grades). Following compulsory education, there is non-compulsory high school (three grades). In secondary school, teachers regularly evaluate the students' academic performances, on the subject they teach and give each student a mark. If the students' academic performances warrant it, the school can propose grade repetition. Despite

recent tendencies towards using less repetition, PISA (2012) reported that France was the 5th country of the OECD countries regarding repetition. In 2012, almost every third (28%) 15-year-old repeated a grade.

In France, problematic absenteeism is defined as an absence from school (1) without legitimate or valid excuse, (2) for at least four full half-days, (3) over a period of one month.

Absenteeism is registered digitally at each new course. A comparative analysis on self- reported truancy indicates that France scores just below the European mean. Seventeen percent of the pupils in France report to have truanted once in the two weeks before the questionnaire compared to the average European mean of 20% (Keppens & Spruyt, 2018).

The aim of this study is to identify profiles within a community sample of secondary school students based on their absence, and different risk factors related to school absenteeism. Furthermore, the study aims to build further on previous literature which interprets youths with SAP not as a homogeneous group but as a heterogeneous group (Keppens & Spruyt, 2016; Maynard et al., 2012). Our study extends the examination of the heterogeneous nature of school absenteeism by examining more thoroughly differences regarding externalized and internalized problem behaviors. In particular, we aim to identify subgroups of youth, based on their school absence, that have not previously been identified. Based on the presented studies, we hypothesize that there will be a link between school absenteeism and mental health problems, where higher scores on mental health problems are linked with higher amounts of school absence.

METHOD

Participants

A sample of 469 youth (40.1% boys) aged between 10-16 years old (M=12.1 years, SD=1.2), from six French public secondary schools, participated in this study. The sample consisted of 199 first grade students (42.4%); 131 second grade (27.9%); 87 third grade (18.6%) and 52 fourth grade students (11.1%). There are no differences concerning the repartition of boys and girls between the grades ($X^2(3)=2.8$, $p=0.41$). The sample is not normally distributed on the variables (Shapiro test).

Measures

Absenteeism was assessed as absenteeism *at* school, and absenteeism *from* school. To assess absenteeism *at* school, the youths were asked to report the number of times in the last three weeks, they (1) went to the school infirmary, (2) went to the school office, (3) called parents to leave school and returned home, (4) lateness (in

school or in class) and (5) been excluded from classroom. Absenteeism *from* school was provided by the school administrators for each participant, and consisted of the number of half-schooldays missed in the last three weeks (excused and unexcused).

The Child Behaviour Checklist-Youth Self-Report (CBCL-YSR; Achenbach, 1991) is a self-report measure (112 items), used to assess emotional and behavioral problems (i.e., clinical syndromes) among adolescents aged 11–18 years. The CBCL-YSR measures the following eight Behavior Problems scales: *Social Withdrawal*, *Somatic Complaints*, *Anxious/Depressed*, *Social Problems*, *Thought Problems*, *Attention Problems*, *Delinquent Behavior* and *Aggressive Behavior*. The different syndrome scales in the CBCL-YSR also allow for the examination of three broad groupings of syndromes: Internalizing Problems, Externalizing Problems and Total Problems. Internalizing Problems combine the *Social Withdrawal*, *Somatic Complaints*, and *Anxiety/Depression* scales, while Externalizing problems combine the *Delinquent Behavior* and *Aggressive Behavior* scales. Total problems combine all eight scales. The instrument also contains items that assess the youth's Competencies in three scales: *Activities* (hobbies, sports, etc.), *Social competence* (number of friends, relationships, etc.) and *School Performance*. Each item on the CBCL-YSR is rated on a 3-point scale ranging from 0 ("*not true*") to 2 ("*very true or often true*"). In the current study, total scores were computed for Competencies, Behavior Problems, Internalizing Problems, Externalizing Problems and Total Problems. For the subscales regarding Competencies, higher scores indicate higher competencies. For the subscales regarding Behavior Problems, higher scores indicate higher levels of disturbances. A computerized scoring program was used to obtain the CBCL-YSR scores. Because of computer scoring standardizing for age and sex, internal consistency is not available, but Cronbach's alpha for the French CBCL-YSR scales were good (.83-.92; Wyss, Voelker, Cornock, & Hakim-Larson, 2003).

The SChool REfusal EvaluatioN (SCREEN; Gallé-Tessonneau & Gana, 2018) is a self- report measure (18 items) assessing school refusal (in the present study Cronbach alpha=.85). Each item was rated on a five-point scale ranging from 1 ("*not at all like me*") to 5 ("*much like me*"), with higher scores indicating severe school refusal. Scores under 31 indicate no school refusal; between 32 and 40 a borderline level of school refusal and the cut- off score of 41 indicates school refusal (sensitivity = .94 and specificity=.88).

The School Refusal Assessment Scale (SRAS; Kearney & Silverman, 1993) is a self-report measure (16 items) assessing the function(s) of the youth's school absenteeism. The SRAS determines the relative strength of four functions or dimensions of school absenteeism: (1) avoidance of specific stimuli related to school (avoidance of school-related stimuli), (2) avoidance of social situations and painful situations at school (escape from aversive social and/or evaluative situations), (3) behavior to attract the

attention of attachment figures (pursuit of care from significant others), (4) search for tangible positive reinforcements (pursuit of tangible reinforces outside of school such as watching TV, being with friends or use substances). Each item was rated on a 7-point scale ranging from 0 ("*never*") to 6 ("*always*"). Cronbach's alpha in this sample was acceptable for function 1 and 2 (.74 and .74), and poor for function 3 and 4 (.55, and .55), which is better than previous French results (respectively .66, .67, .67, .29; Brandibas, Jeunier, Gaspard, & Fourasté, 2001), but lower than scores from a sample of North-American youths (.77, .88, .73, .77; Higa, Daleiden, & Chorpita, 2002).

Bullying was assessed with two items derived from the French version of the Bully/Victim Questionnaire revised (OBVQ) (Kubiszewski, Fontaine, Chasseigne, & Rusch, 2014). Youths completed two questions, "*Have students ever made fun of you at school, threatened, hit or jostled you, or circulated rumors about you?*" (Yes or No) "*Have students ever made fun of you, threatened, hit or shoved you, or spread rumors about you over the past three months?*" (never/ only once or twice/ two or three times a month/ about once a week/ several times a week).

Demographic, family variables and life event Parents' age, level of education and socio- professional categories were filled out by the parents. Family characteristics (two-parent families versus separated parents) were completed by the youth. Landmark life events, in the last two years, were assessed by the youth (divorce, death, relocation, illness etc.) with a *"Yes"* or *"No"* question. History of psychological counseling among youths', was assessed with a *"Yes"* or *"No"* question.

Procedure

Participation in the study was voluntary, and parents gave explicit written consent of participation. The questionnaires were administered in a classroom setting in six public high schools, in paper form or on a computer. There were no significant differences between responses administered on paper or a computer in all the measures used in this study.

Data Analysis

We examined whether a combination of school absenteeism and the subscales of CBCL-YSR (Internalizing and Externalizing problems) could be combined into distinct types of absent youths. For this purpose, a typology of absenteeism was constructed by means of Latent Class Cluster Analysis (LCCA; Vermunt, 2002), using Latent Gold software. The LCCA is a non-parametric alternative for Structural Equation Modelling (SEM) that uses the distribution of a set of manifested indicators in the sample to classify respondents in a limited number of latent categories. This results in the construction of an empirical typology, based on the degree of similarity of respondents regarding these indicators. In other words, the combination of absenteeism

with internalizing and externalizing problems was strictly determined on statistical grounds based upon membership probabilities. A good-fitting typology of absenteeism is obtained by extending the number of clusters stepwise. We used the following procedure in order to identify a parsimonious model (Vermunt & Magidson, 2005). The first criteria for determining the number of clusters was looking at the p-value which provides the p-value for each model under the assumption that the L^2 statistic follows a chi-square distribution. Generally, among models for which the p-value is greater than 0.05 (provides an adequate fit), the one that is most parsimonious (fewest number of parameters) and one that have the lowest model fit indicator (the Akaike Information Criterion and the Bayesian Information Criterion) is selected. Following this procedure, both a 3-cluster model and a 4-cluster model have a good fit. Finally, the theoretical meaning of the measurement model is considered. The primary aim of the analysis was to identify certain types of absent youths, overlooked in past research. Therefore, in order to be more informative, the 4-cluster model was selected.

Table 1. Mean comparison (ANOVA) with post-hoc comparisons (Bonferroni, $p<.05$) regarding clusters and variables of interest (N=469)

	ANOVA	Cluster A High problem[a] *M* (SD)	Cluster B Low absence-Low problem[b] *M* (SD)	Cluster C High absence[c] *M* (SD)	Cluster D Low absence[d] *M* (SD)
School absence	$F(3)=5.12$; $p<.01$	1.31 (2.4)	1.05 (2.4)[c]	1.88 (2.6)[b, d]	0.51 (0.8)[c]
Internal problems (CBCL-YSR)	$F(3)=88.41$; $p<.01$	60.22 (8.6)[b, c, d]	45.40 (7)[a, c, d]	51.66 (4.3)[a, b]	51.35 (12.6)[a, b]
External problems (CBCL-YSR)	$F(3)=206.93$; $p<.01$	59.48 (7.5)[b, c, d]	41.53 (6.9)[a, c, d]	50.14 (5.2)[a, b, d]	46.14 (2.4)[a, b, c]

a, b, c, d are designated couple of groups which are significantly different at $p < .05$. For instance, regarding School absence, Cluster B was different from Clusters C, but not from Cluster D.

RESULTS

Clusters' description

The data analysis led to a 4-cluster model (Table 1). There is no difference between Cluster A (n=155, 33%) and the others clusters regarding the amount of school absence. Nevertheless, teenagers in this cluster display a borderline level of internal problems and external problems on the CBCL-YSR, and have higher levels compared with youths in the other clusters. Cluster A is hereinafter referred to as *High Problem* (*HP*). Cluster B (n=146, 31.1%) is marked by a lower amount of school absence, compared with Cluster C. Youths in Cluster B have a very low level of internal and external problems (under the norm). Cluster B is hereafter referred to as *Low absence- Low problem* (*LA-LP*). Cluster C (n=111, 23.7%) is marked by the highest amount of school absence. Youths in this cluster have a level of internal and external

problems within the norm. Cluster C is hereafter referred to as *High Absence* (*HA*). Cluster D (*n*=57, 12.2%) is marked by a lower amount of school absence from school compared to *HA*. Youths from Cluster D have a level of internal problems in the norm and a level of external problems under the norm, although higher than *LA-LP*. Cluster D is hereafter referred to as *Low Absence* (*LA*).

Relationship between Clusters and the variables

Mean comparisons between the clusters were performed using ANOVA with post-hoc comparison, on psychological variables, school absence and age (Table 2). Frequency comparisons were conducted using chi-squared test on clusters, school variables, sociodemographic variables, bullying and life events (Table 3).

Teenagers in the four clusters did not differ significantly on activities, social competence, visits to the school infirmary, and exclusion from classroom. Furthermore, there was no significant difference regarding parents' age, gender, the family situation, or fathers' level of education.

Teenagers in HP had a lower school level and a higher proportion of repetition compared to the others clusters. Regarding psychological variables they had higher scores on every dimension of the CBCL-YSR. These teenagers scored on average within a borderline level of the *Total problem* dimension of the CBCL-YSR. They also had higher scores on school refusal (SCREEN) and the functions of the SRAS (expect on function 2) compared to the other cluster. Teenagers in Cluster *HP* were more absent from school compared to teenagers in LA-LP and LA, and less than HA. They had more visits to the school office, asked to call parents to leave school, and had more delay in class or school, compared to the other clusters. Cluster *HP* is marked by a lower rate of parents in high socio-professional categories (SCP), and lower level of education among mothers'. Teenagers in *HP* reported more concern regarding bullying compared to the others clusters, both in the past and in the last three months. Lastly, there was a higher proportion of landmark life event in the last two years and a higher proportion of history of psychological consultation among this group of teenagers.

Teenagers in *LA-LP* had no psychological problems. They were under the norm for the dimension *Total Problems* on the CBCL-YSR. They also presented lower scores compared to the others clusters on school refusal (SCREEN). The *LA-LP* teenagers were less absent compared to *HP* and *HA*, but not *LA* regarding absence *from school*. However, they had the lowest absence *at school*, with the lowest number of visits to the school office, requests to go home, and delayed in class or school. Cluster *LA-LP* was the least concerned with bullying, both in their life and in the recent three months, and life events in the last two years.

Teenagers in the *HA* cluster scored within the norm on psychological problems on the CBCL- YSR. They scored lower on the CBCL-YSR *anxious/depressed*

dimension than teenagers in the *LA* cluster, but scored higher on the *aggressive behavior* and *total problem* dimensions, compared to the *LA-LP* and *LA* cluster. The *HA* cluster was also marked by a higher proportion of teenagers in their last year of school.

Table 2. Mean comparison (Anova) with post-hoc comparisons (Bonferroni, $p<.05$) regarding Clusters, Psychological variables, Absence and Age (N=469)

			Anova	High Problem *M* (SD)	Low Absence-Low Problem *M* (SD)	High Absence *M* (SD)	Low Absence *M* (SD)
Psychological Variables	CBCL Competencies	Activities	$F(3)=0.60$; ns	44.59 (8.6)	43.88 (8.2)	45.42 (7.3)	44.19 (8.4)
		Social	$F(3)=0.49$; ns	42.26 (8.8)	43.60 (8.7)	42.86 (8.1)	42.52 (7.8)
		School level	$F(3)=8.84$; $p<.01$	2.17 (0.6)[b, c, d]	2.50 (0.5)[a]	2.39 (0.6) [a]	2.52 (0.5) [a]
	CBCL Problems	Withdrawn	$F(3)=39.50$; $p<.01$	58.43 (8.8) [b, c, d]	51.21 (2.6) [a, d]	52.16 (4.9) [a]	54.46 (6.5) [a, b]
		Somatic complaints	$F(3)=40.99$; $p<.01$	58.39 (6.5) [b, c, d]	51.68 (3) [a, c, d]	53.88 (4) [a, b]	55.77 (8.3) [a, b]
		Anxious/depressed	$F(3)=66.34$; $p<.01$	61.22 (8.6) [b, c, d]	51.51 (3.2) [a, d]	52.97 (4.3) [a, d]	55.96 (8.5) [a, b, c]
		Social problems	$F(3)=32.05$; $p<.01$	60.35 (7.5) [b, c, d]	53.17 (5.1) [a, c, d]	56.07 (6.1) [a, b]	56.72 (6.7) [a, b]
		Thought problems	$F(3)=24.43$; $p<.01$	56.49 (9.1) [b, c, d]	50.68 (2.3) [a]	52.41 (5.1) [a]	51.98 (4.6) [a]
		Attention problems	$F(3)=63.01$; $p<.01$	59.28 (8.1) [b, c, d]	51.10 (2.8) [a]	52.75 (4.3) [a]	52.63 (4.3) [a]
		Delinquent behavior	$F(3)=56.26$; $p<.01$	57.54 (7.4) [b, c, d]	50.67 (2.3) [a]	52.12 (4.1) [a]	51.54 (2.6) [a]
		Aggressive behavior	$F(3)=111.25$; $p<.01$	60.19 (7.7) [b, c, d]	50.80 (2.1) [a]	52.38 (4.3) [a, d]	50.05 (0.4) [a, c]
		Total problem	$F(3)= 220.42$; $p<.01$	60.86 (6.8) [b, c, d]	42.47 (5.8) [a, c, d]	50.38 (4.6) [a, b]	48.49 (8.4) [a, b]
	SCREEN	Total score	$F(3)=35.70$; $p<.01$	37.08 (10.1) [b, c, d]	27.11 (5.8) [a, c, d]	30.68 (8.2) [a, b]	31.44 (9.9) [a, b]
	SRAS	Function 1	$F(3)=17.09$; $p<.01$	1.12 (1.2) [b, c, d]	0.41 (0.6) [a]	0.58 (0.9) [a]	0.61 (0.8) [a]
		Function 2	$F(3)=21.77$; $p<.01$	1.40 (1.2) [b, c]	0.55 (0.7) [a, d]	0.77 (0.8) [a]	1.01 (1.2) [b]
		Function 3	$F(3)=33.22$; $p<.01$	2.14 (1.1) [b, c, d]	1.07 (0.8) [a, c, d]	1.75 (0.9) [a, b]	1.50 (1) [a, b]
		Function 4	$F(3)=9.54$; $p<.01$	2.53 (1.1) [b, c, d]	1.96 (1.1) [a]	1.93 (1.1) [a]	1.88 (1.2) [a]
Absence at school		School infirmary	$F(3)=0.75$; ns	0.68 (1.6)	0.48 (1.9)	0.49 (1.2)	0.38 (0.8)
		School office	$F(3)=6.34$; $p<.01$	4.08 (6)[b]	1.86 (2.3)[a]	3.36 (4.3)	3.05 (4.1)
		Ask home	$F(3)=3.33$; $p<.05$	0.40 (1.4)[b]	0.09 (0.3)[a]	0.16 (0.5)	0.25 (0.6)
		Exclusion	$F(3)=1.01$; ns	0.08 (0.6)	0.02 (0.2)	0.02 (0.1)	00 (00)
Age		Age of youth	$F(3)=3.75$; $p<.05$	12.37 (1.2)[b]	11.96 (1.1)[a]	12.15 (1.2)	11.96 (1)
		Age of mother	$F(3)=0.15$; ns	42.23 (4.8)	42.50 (4.7)	42.48 (4.6)	42.09 (4.8)
		Age of father	$F(3)=0.22$; ns	44.55 (5.7)	44.35 (5.4)	43.97 (5.3)	44.49 (5.5)

Teenagers in *LA* cluster had the lowest amount of absence from school. They had no psychological problems according to the CBCL-YSR, and all the dimensions were in or under the norm. They had higher scores on the *withdrawn*, *somatic complains*, *anxious/depressed*, and *social problem* dimensions on the CBCL-YSR, compared with *LA- LP*. The LA scored low on both the SCREEN and the SRAS, and was marked by a higher proportion of younger teenagers in their first year of secondary school. Lastly, this cluster reported fewer previous psychological consultations, compared to the other clusters.

Table 3. Frequency comparisons (Chi 2 Test) with Bonferroni adjustment ($p<.05$) regarding School, Sociodemographic, Bullying and Life event ($N=469$)

			X^2	HP %	LA-LP %	HA %	LA %
School	Grade		$X^2(9)=19.58$; $p<.05$				
		First grade		33.5 (-)	47.6	41.4	56.1 (+)
		Second grade		29.7	30.3	26.1	19.3 (-)
		Third grade		25.8(+)	13.1(-)	16.2	17.5
		Last grade		11	9	16.2 (+)	7
	Repetition		$X^2(3)=13.66$; $p<.01$	13.5 (+)	4.2	3.6	5.3
	Delay	Sometime to always absent	$X^2(3)=30.81$; $p<.01$	63.9(+)	33.1(-)	50.5	38.6
Sociodemographic	Sex	Boys	$X^2(3)=2.36$; ns	36.1	40.4	41.4	47.4
	Family situation	Two parents vs separate parents	$X^2(3)=2.13$; ns	66.7	70.1	74.8	72.2
	SPC mother	Upper SPC categories	$X^2(3)=8.49$; $p<.05$	26.4 (-)	42	39	33.3
	SPC Father	Upper SPC categories	$X^2(3)=11.03$; $p<.01$	35.8 (-)	51.9	51.5	57.1
	Diploma mother	Diploma level < baccalaureate	$X^2(3)=8.39$; $p<.05$	33.8 (+)	21.2	22.9	18.5
	Diploma father	Diploma level < baccalaureate	$X^2(3)=6.43$; ns	42.6	30	30.6	29.2
Bullying	Bullying in life	Yes	$X^2(3)=50.62$; $p<.01$	68.2 (+)	29.5 (-)	38.7	37.5
	Bullying 3 months	Yes	$X^2(3)=35.06$; $p<.01$	57.5 (+)	24.8 (-)	36.9	33.3
	Bullying 3 months	Frequency of bullying	$X^2(6)=38.38$; $p<.01$				
		Never		42.5 (-)	75.2 (+)	63.1	66.7
		One-two time		36.6	19.3	27	19.3
		Several/month and week		20.9 (+)	5.5 (-)	9.9	14
Life event	Life event in the last 2 years		$X^2(3)=22.42$; $p<.01$	61 (+)	35.6 (-)	52.7	38.6
	History of psychological consultation		$X^2(3)=28.7$; $p<.01$	42.9 (+)	18.5	28.4	14 (-)

DISCUSSION AND CONCLUSIONS

The primary aim of this study was to identify profiles of high school pupils based on school absenteeism and mental health. Four distinct profiles of students were identified, HP, HA, LA, and LA-LP.

Teenagers in *LA-LP* did not display any risk factors for mental health problems or SAP, and seemed to be in good mental health. The *LA* cluster was the smallest cluster and shared several similar aspects with the *LA-LP* cluster, and both clusters had a low amount of absence. There was a significant difference between these clusters in regards to internalizing and externalizing problems, were LA teenagers scored higher on psychological problems. The LA cluster might therefore represent a group of teenagers with a higher risk of developing psychological problems and/or SAP. However, both clusters presented teenager with low levels of school absence and low levels of mental health problems, and might therefore reflect a community sample with lower risk for developing mental health problems and SAP.

The HA and HP clusters, both had higher levels on one or two of the main variables (school absence, internal problems, and external problems). The main distinction between clusters *HP* and *HA* was mental health problems on the CBCL-YSR. While cluster *HP* presented a borderline level of psychological problems, *HA* did not. Cluster *HP* scored significantly higher than *HA* on both internalizing and externalizing problems. The *HA* cluster consisted of the highest number of students in the last grade of secondary school, which corresponds to previous studies indicating that student's absence from school tends to increase over time (Hancock et al., 2013). Teenagers in this cluster differed from the *LA-LP* and *LA* clusters, on absenteeism and external problems, which is congruent with studies on school absenteeism and external behavior (Vaughn et al., 2013). Clusters *HP* and *HA* might together represent a community sample with higher risks of developing mental health problems and SAP.

Based on the measures used in this study, the *HP* cluster is considered to be the group with the highest risk of developing mental health problems. The teenagers in this sample showed a borderline level of internal and total problems on the CBCL-YSR. The cluster represented one third of the total sample, and was the largest cluster. The size of cluster *HP* showing borderline levels of mental health problems seems to be congruent with previous studies regarding students in French secondary school. In a previous French community study of secondary school students (n=7023), 50% of girls and 27% of boys complained of more than two somatic and/or psychological symptoms, more than once per week for at least six months (Godeau and Pacoricona-Alfaro, 2016). In another study using the same sample, researchers emphasize that recurrent somatic and/or psychological complains concerns 42.3% of teenagers and that 13.3% of French pupils would be at high risk of depression. Paradoxically, the same study underlines that

French secondary school students perceive themselves to be in a good health (87.7%) and perceive their life as positive (81.9%) (Robert, Roscoät, & Godeau, 2016). The large number of students in the *HP* cluster dovetails with the level of mental health of other French students, and despite the high level of mental health symptoms they maintain a good level of functioning, like attending school.

Interestingly, despite presenting several risk factors, previously linked to higher amounts of school absence, the *HP* cluster has a relatively low amount of absence. These findings are not congruent with others studies were higher levels of mental health problems have been linked with higher levels of school absence (Blaya & Fortin, 2011; Ingul et al., 2012). This could possibly be due to low levels of school absence in the study sample. Another possible explanation for these findings could be caused by a high number of young students in the *HP* clusters. As previous studies have shown that school absence develops over time, the students in the HP cluster might develop higher rates of school absences as they grow older. The *HP* cluster also showed higher absence *at school*, which might be a symptom of discomfort presented by these teenagers, particularly during less structured school time like lunch or school break, and the importance of structure in these settings has previously been presented by Havik, Bru, and Ertesvåg (2014).

Low school level, high prevalence of repetition, low parent's diploma and less upper SCP categories among parents in the *HP* cluster is congruent with previous findings in a French sample of secondary school students. Robert et al. (2016) presented a link between lower socio-economic status, psychological complaints, difficulties of thinking, discomfort, school level, repetition, and lower feelings of academic mastery.

In conclusion, the current study presents four distinct profiles based on scores on mental health problems and their level of school absence. The largest cluster described students who presented borderline levels of both internalizing and externalizing problems, which dovetails with previous studies of mental health problems in French secondary schools. The findings were somewhat contrary to our hypothesis, as we did not find a direct link between higher levels of mental health problems and school absence. The *HA* cluster, with the highest levels of school absence, did not show higher levels of mental health problems compared to the other clusters. However, the *HP* cluster, with the highest amount of mental health problems, had higher level of absence than the LA-LP and LA clusters, although non-significant. These results indicate that there are other factors that need to be accounted for to understand and identify pupils with emerging SAP.

Some methodological limitations must be considered in this study. The first concern relates to the sample, which is mainly composed of students from the first and the second grade and few from the third and fourth grade. The second concern regards

the amount of absenteeism. Indeed, students in this study display a low amount of absenteeism, which is less than the national prevalence of school absence.

This study can be understood as exploratory and a necessary first step in understanding the development of SAP and the possible link with mental health problems. Further research should focus on this relationship in a population of pupils presenting higher levels of school absence.

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