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IQ OVER 130 AND PHOBIA: CORRELATION, CONSEQUENCES AND OTHER PSYCHOPATHOLOGIES

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SUMMARY

Background: *Nowadays, anxiety disorders are becoming more and more important in our population. And if there is one category of people more vulnerable to this problem, it is the teenagers. In addition, more and more children and teenagers are diagnosed with an IQ greater than 130, causing all the stress and questions that it generates. In this project, we are comparing two groups of adolescents, one with an IQ over 130, the other with an IQ less than 130. We are wondering if there is any difference between these groups, in terms of phobia and other psychopathologies.*

Subjects and methods: *A sample of 35 teenagers, from 12 to 16 years old, separated in two groups (IQ over 130 and IQ below 130), fulfilled the following questionnaires: the School Rehabilitation Assessment Scale-Revised (SARS-R), the "Family Adaptability and Cohesiveness Evaluation Scale III" (FACES III), and the "Kiddie- SADS-lifetime" (K-SADS-PL), and a social data collection questionnaire.*

Results: *At the end of this study, we can retain the following relevant elements: adolescents with IQs greater than 130 are statistically more likely to be the eldest siblings (Cochran Test F=9.159, p=0.010). They do not develop more phobias, but are more shy (t=4.375, p=0.036) than the control population. These high-potential and shy teenagers have a whole list of commonalities, such as being easily irritable, being easily distracted, ect… They have fewer friends in real life (t=2.255, p=0.033), fewer virtual friends (t=4.346, p=0.000) and fewer virtual relationships (t=2.431, p=0.021). Their families are very cohesive (Test t=0.004). There is no significant role of the socio-professional class of parents playing in the value of the IQ of their children (t=4.667, p=0.323).*

Conclusion: *To conclude, being a teenager and having an IQ greater than 130 is not always a pleasure. Our results showed us that the majority of these young people consider themselves as shy, unsure of themselves and claim to have many fears. This is evidence of an increased anxiety component compared to the control sample. It seems important to insist on the need to be able and to know how to identify these young people as soon as possible, in order to propose appropriate therapeutic management.*

Key words: *IQ - phobia - adolescents - school - family*

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INTRODUCTION

Anxiety disorders (De Kerner 2015) are defined by the inappropriate or irrational reactions to a situation of daily life. Because of this great propensity for anxiety and phobias in the population, there are many books, articles and studies dealing with anxiety disorders in adults. But what about children and adolescents? In adolescents, we are aware of the high prevalence of anxiety disorders (Tassin et al. 2014). On the otherhand, we know that about 2.3% of the school population between the ages of 6 and 16 is considered with high potential, which means, is diagnosed with an IQ over 130 (Leurquin 1996). In an increasingly stressful world, where everything goes faster and faster, it seems essential to look at anxiety disorders in these generations of future adults.

Is there a special connection between these young people with high potential, and these disorders? Is there a difference from a control group with no high potential detected?

To be more precise, we formulated these different questions:

- Are teens with IQ over 130 more likely to develop phobias compared to an adolescent control group with an IQ below 130?
- Are they more at risk of developing a school phobia, if so, are there any causal factors?
- Do they have fewer friendly relationships than the control group?
- Are there any elements of family dynamics associated with phobias in adolescents with IQ over 130?

SUBJECTS AND METHODS

This study comprises three main questionnaires: the School Rehabilitation Assessment Scale-Revised (SARS-R) (Brandibas et al. 2001), French version, the "Kiddie-SADS-lifetime" (K-SADS-PL) (Birmaher et al. 2009), and the "Family Adaptability and Cohesiveness Evaluation Scale III" (FACES III) (Joh et al. 2013), as well as a social data collection questionnaire (name, age, type of school attended, grade level, parent's job, place in siblings ...). SRAS-R is a psychological assessment tool designed to assess the symptoms of school failure disorder in children and identify their reasons for avoiding school. This self-assessment questionnaire measures the frequency with which a child experiences emotions and behaviors related to school attendance. FACES III, also known as the Olson score, is a family assessment model designed to measure family cohesion (degree to which family members are separated from or connected to

their family) and family adaptability (extent to which the family system is flexible and able to change under stress). K-SADS-PL is a semi-structured diagnostic interview, providing information on current and past episodes of psychopathology in adolescents, according to the DSM-IV DSM-III-R criteria. The sample targeted by this study is a population of 15 adolescents between 12 and 16 years old, girls and boys, detected with an IQ greater than 130. We also passed these questionnaires to a control group consisting of 20 adolescents of the same age group, but these having been tested with an IQ less than 130.

The two cohorts were sought and contacted through specialized associations, as well as through social networks on the Internet, where people who have passed an IQ test and their parents meet to form discussion groups accessible to all. All are enrolled in general secondary schools and have passed a WISC IV type test (Wechsler Intelligence Scale for Children).

After exchanging emails with teenagers and their parents, the people agreeing to participate were then met individually to answer the different questionnaires. This study has been validated beforehand by an Ethics Committee from Mont-Godinne University Hospital (N°: 66/2016; NUB: B039201629159).

RESULTS

Socio-demographic data

Here are the results concerning our socio-demographic data questionnaire: there is no significant difference between the average ages of our two groups (t=1.925, p=0.065).

There is also no difference between the girls/boys distribution of our two groups (χ^2=1.020, p=0.313). We were able to point out that adolescents with IQs greater than 130 are statistically more likely to be older siblings (Cochran test F=9.159, p=0.010), compared to adolescents with an IQ below 130. There is no significant role of the socio-professional class of parents playing in the value of the IQ of their children (t=4.667, p=0.323).

Hypothesis 1

To answer our first hypothesis, we will analyze and compare the results of the answers obtained for the questions concerning fear, from the Kiddie-SADS-lifetime questionnaire, and compare our two groups.

We observe that adolescents with IQs greater than 130 have fewer phobias and thus avoid them less (Phobias: t=3.838, p=0.050); (Avoidance of phobia: t=4.644, p=0.031).

Our hypothesis is thus invalidated, and we can answer it by affirming that adolescents with an IQ higher than 130 do not develop more phobias than those with an IQ lower than 130.

Nevertheless, arriving at the question "do you consider yourself as shy", we were able to highlight a statistically significant difference between our two groups: indeed, adolescents with IQ higher than 130 are more shy (t=4.375, p=0.036) than those with an IQ below 130. These high-potential and shy teenagers have a wide range of commonalities, such as being easily irritated, being easily distracted, being unable to relax completely, being more anxious (Table 1).

Table 1. Table regrouping Kiddie-SADS-lifetime items associated with IQ over 130 and shyness

Associated items	Value χ^2	Value p
Irritability/anger	15.00	0.000
Anhedonia	5.934	0.015
Think about death	12.381	0.000
Feeling of excitement/euphoria	6.667	0.010
Diminution of sleeping time	4.444	0.035
Ruminations/compulsive thoughts	15.00	0.000
Phobia	4.444	0.035
Impossible to totally relax	5.934	0.015
Obsessive thoughts	4.444	0.035
Attentionproblem	4.444	0.035
Easilydistracted	10.756	0.001
Have already lie	6.667	0.010
Have alreadyfought	0.000	1.000
Fear of being separated from their parents	4.444	0.035
Fear that something bad happen to their parents	5.934	0.015
Fear of social situation	6.667	0.010
Fear of strangers	8.148	0.004
Number of virtualsrelationships	2.260	0.037

Hypothesis 2

For our second hypothesis, previously, we observed that our adolescents with an IQ greater than 130 were no more at risk of developing a phobia of any kind, compared to our adolescents with an IQ below 130. Since our hypothesis concerning school phobia is based on the hypothesis of phobia, and this being invalid, this hypothesis is therefore not plausible.

Hypothesis 3

For our third hypothesis, and after discovering that our teenagers with an IQ greater than 130 tended to be more shy, we will see what it is in reality. From our results, it is statistically significant that our participants with IQ greater than 130 have fewer friends in real life (t=2.255, p=0.033), fewer virtual friends (t=4.346, p=0.000) and fewer virtual relations (t=2.431, p=0.021) than those with an IQ less than 130. There is no difference between the two groups for the number of real relationships (t=1.697, p=0.094).

Hypothesis 4

For our fourth hypothesis, just as for our hypothesis on school phobia, the question we are trying to answer is closely related to our hypothesis "IQ adolescents over 130 are more at risk of developing phobias". As said before, we know this is not the case.But by analyzing our new population of shy teenagers with an IQ greater than 130, we come to question their family dynamics: is it particular? The FACES III questionnaire allows us to obtain the following results: our shy teenagers have a greater cohesion in their family of origin (Test t=0.007) than our non-shy teenagers. In addition, these teenagers would like this cohesion to be even stronger, as shown by our results concerning the cohesion of their future ideal family (Test t=0.004).

DISCUSSION

During this study, we note that these adolescents don't have a risk of developing more phobias, unless they also have the characteristic of being described as shy. Few studies exist on this subject today, so we cannot compare our results with the literature. It would be interesting in the future to dig deeper into this question, to look a little more closely at this category of people who consider themselves timid and socially inadequate, who in addition, have a tendency to develop more psychopathologies than others.Our sample is not statistically more at risk of developing a school phobia, although the literature seems to prove the opposite. Although in common thinking, high intellectual potential is associated with academic success, one third of children with IQ over 130 attending school from 6 to 16 years old are in great difficulty (Tordjman 2012). This difficulty can be explained by the boredom they experience during school hours, the rejection of other students, not accepting this different comrade. This can lead to isolation, leading to rejection of school, academic failure and sometimes even depression. In addition, the fact that a large part of those teenagers is shy, and that this shyness is associated with other symptomatic traits such as fear of a social situation, having few friends, … All this may be in favor of a development of a school refusal, the school being a reflection of social learning, source of much of the anxiety of our teenagers with high potential. Although these observations are repeated in many articles of the literature, we could not prove this hypothesis with our study. This can be explained by a recruitment bias in our population or in the way we interview them. These teenagers generally have fewer friends than the control population, whether in the real world or in the virtual world, regardless of whether they say they are shy or not. High-potential children with psychopathological symptoms generally find it more difficult to adapt socially (Liratni & Pry 2011). They are often shy and think a lot before acting. This prevents them from operating as they would have liked for fear of the prejudice or the gaze of others, which they have often experienced in a negative way. So that's a problem for integration with peers. The children or adolescents are blocked by their way of proceeding, untransmissible to their comrades for the moment: their way of reasoning, to see the world, to express themselves, often exposes them to the mockery of their classmates (Adda 2016). There is no real family dynamic conducive to phobias in our population. As for our shy adolescents, we see that there is a real family cohesion, which could turn into a vicious circle: the shy teenager takes refuge in his family, known and protective ground, which could ultimately prevent them from opening up and turning to the outside, increasing all the more their fears and shyness. Some studies show the importance of a good family arrangement: the greater the cohesion and the coherence between the parents and the entourage of the child or teenager, the greater the chances of integration and success of the child (Grubar et al. 1997). However, paents should be careful not to overdo it, at the risk that this cohesion will become a burden for the teenager. In extreme cases, some parents do too much and over-value their child who becomes either the restorative object of their personal failures or the object of their pride. Some parents tend to overstimulate and overprotect the child at the expense of emotional development.

CONCLUSION

To conclude, being a teenager and having an IQ greater than 130 is not always a pleasure. Where some develop a certain advantage, others suffer. Our results showed us that the majority of these young people consider themselves as shy, unsure of themselves and claim to have many fears. This is evidence of an increased anxiety component compared to the control population. It seems important to insist on the need to be able and to know how to identify these young people as soon as possible, in order to propose appropriate therapeutic management.

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Contribution of individual authors:

Anne-Gaëlle Lacour & Nicolas Zdanowicz both made a substantial contribution to the design of the study, and/or data acquisition, and/or the data analysis and its interpretation.

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