



Immigrant Children's Proficiency in the Host Country Language is More Important than Individual, Family and Peer Characteristics in Predicting Their Psychological Well-Being

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Abstract

Immigrant children are exposed to high levels of psychological distress, leading to an increased risk of mental and physical health problems. In the present study we investigated the impact of first and second generation immigrant children's proficiency in the host country language on their psychological well-being one year later. The effects of gender, family SES, and classmates' characteristics were also examined. A structural equation model was tested on 2334 immigrant children in a representative sample of 561 Italian primary schools taking measurement errors into account. Children's language proficiency significantly predicted their psychological well-being one year later, both in first and second immigrant generations ($B = .23$; $p < .001$). None of the other variables had a significant impact. Improving the language skills of immigrant children could promote their mental health, regardless of their backgrounds and whether they were born in the host country or not.

Keywords Psychological well-being · Mental health · Language proficiency · Immigrant children · Background factors

Introduction

In immigrant populations poor psychological well-being during childhood is related to lower socioeconomic status in adulthood, which in turn increases the probability of poor health outcomes in the next generation [1]. By promoting the psychological well-being of immigrant children, health professionals can therefore contribute to breaking this vicious cycle. Apart from the pleasant subjective feeling it involves, psychological well-being has also several positive implications for health that are well documented in the literature [2]. It is associated with reduction in inflammatory responses to stress and lower levels of cortisol [3], increased immune functions [4], resistance to rhinoviruses [5], a reduced likelihood of suffering a stroke [6], a greater resilience in situations of adversity [7] and a reduced risk of suicidal behaviours [8]. Due to numerous physical and social stressors related to acculturation (i.e. the process in which individuals adjust to a new cultural environment) often entails, immigrant children are exposed to higher levels of psychological distress, leading to an increased risk of mental and physical health problems (see [9] and [10] for a review). The context of school and especially the group of classmates is particularly relevant for immigrant pupils, as they have been shown to be more socially isolated than

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native pupils, with a higher likelihood of being psychologically and physically bullied [11–13]. Identifying and understanding the possible risk factors and protective strategies associated with the psychological well-being of immigrant children at school is therefore important, from a clinical and public health perspective, for developing appropriate intervention programmes and strategies.

The present study was based on the theoretical framework of the Assimilation Theory, according to which a process of decreasing differences between immigrant and native groups is expected to have positive effects on well-being [14, 15]. In this regard, gaining proficiency in the language of the host country is one of the core components of this process and it is often seen by researchers as affecting immigrants' health [16–18], as it can have a positive impact on their ability to communicate with others, obtain social support and be integrated into society. However, in the context of immigrant children, this impact has only been assessed on small samples and usually on the basis of cross-sectional studies using self-report measures (i.e., children's subjective perceptions regarding their own proficiency in the language).

Moreover, no study has as yet taken into consideration the possible confounding effects of family, peer and individual characteristics [19]. Many immigrant children belong to families with a lower SES than families of the native population [9, 20], and they often attend schools that are subject to multiple risk factors such as a low average SES level and a high immigrant density [17]. Family socioeconomic status, is well known to influence children's language skills [19] as well as their psychological well-being [21–24]. In the same way, the composition (i.e. group socioeconomic level, immigrant density and gender ratio) and size of classes at school have been identified as factors affecting psychological well-being (e.g. [24–27].), as well as being correlated to language skills [28]. Individual characteristic such as gender also can play a similar confounding role (e.g. [19]).

Thus, in the present prospective study, we investigated the influence of immigrant children's proficiency in the language of the host country (Italian) on their psychological well-being one year later, controlling for the effect of the above mentioned family, peer and individual characteristics. Children's level of proficiency in the host country language was measured by means of their official teachers' grades at the end of the school year. The large number of immigrant children ($N = 2334$) in the random sample of primary schools involved in the study allowed us to investigate the impact of family SES, which is rarely investigated in small scale studies due to its limited variability within this population. We also examined possible differences in the influence of language proficiency on psychological well-being in children of different immigrant generations. Second generation immigrants are generally supposed to be more socially integrated than those of the first generation since they were born

in the host country [29, 30]. It could be therefore expected that language proficiency would have a less marked influence on their psychological well-being.

To sum up, the present study intends to contribute to existing literature by examining the importance of the following factors in predicting the psychological well-being of immigrant children:

- a) Proficiency in the host country language;
- b) Individual, family and peer characteristics which have never been analyzed simultaneously in previous researches.

Research Context

The study was conducted in Italy, a country where the number of immigrants had a steady increase over the past fifteen years: first and second generation immigrant children represent now about 9.4% of the total number of students in all school grades and about 10.8% of those in primary school [31]. The issue of the mental health of immigrant children is a particular concern because the very few studies conducted hitherto indicate that they have significantly more problems in adaptive functioning and academic performance and lower perceived levels of social support than their Italian peers [32–36].

Method

Study Population

The data used in the present study came from 2334 immigrant fifth-grade students who attended a representative random sample of 561 Italian primary schools (895 classes), which participated to a national research on learning. The research was conducted according to a national ethical guideline [37] and was reviewed and approved by The Italian National Institute for the Evaluation of the Education System (INVALSI). To ensure the respect of ethical issues, each school dealt with parental permission and informed consent, according to a national assessment protocol [37]. The data that corroborates the findings of the present study are available at: <https://invalsi-serviziostatistico.cineca.it/>.

Measures

Psychological Well-Being

Psychological well-being was measured by means of the Positive Affect subscale of the Feelings At School Scale [21, 38]. Several studies have shown that domain-specific measures of well-being are better indicators of psychological

health than general scales (e.g. [39, 40].). The Positive Affect subscale was composed of six items and children were asked to indicate how often they have experienced the feelings specified in each item (e.g., happy, calm) over the past few months at school using a 4-point scale ranging from 1 (never) to 4 (very often). In the present study, the fit of the psychological well-being measurement model with a single latent factor was good (CFI=0.99; RMSEA=0.03; SRMR=0.01), as well as the internal consistency of the scale (Cronbach's alpha: 0.75). The factor loadings of the measurement model indicators were all statistically significant ($p < 0.001$) and ranged from 0.47 to 0.60.

Classroom Size

Classroom size was determined as the total number of students attending classes in the school year during which the research was conducted, according to school's official records. The total number of students also included those who, for whatever reason, did not participate in the present study.

Socioeconomic Status

Socioeconomic status (SES) was defined in accordance with the OCSE PISA international survey [17]. Students' SES was computed on the basis of four indicators related to their family background: educational level of parents, occupational level of parents (e.g., small business owner, office employee), home possessions (e.g. personal computer), and home literacy resources (the number of books in their homes). The final SES scores derived from the four indicators by means of a Principal Component Analysis (PCA) had a mean of 0 and a standard deviation of 1 in the general population of students.

Gender and Immigrant Background

Gender was coded as 0/1, with 1 indicating males and 0 indicating females. Students' immigrant background was determined in accordance with the definitions of the Organization for Economic Co-Operation and Development [17]. Students foreign-born and with foreign-born parents were defined as first-generation immigrants while students born in Italy with parents who were born in another country were considered second-generation immigrants.

Proficiency in the National Language (Italian)

Proficiency in the national language was measured on the basis of the immigrant pupils' official grades in the Italian language, attributed by teachers at the end of the previous academic year (grade 4). The mark was expressed as

a whole number ranging from 5 to 10 measuring several aspects of language proficiency, i.e. listening, oral production and interaction, reading and comprehension, writing, vocabulary, and grammar. Official grades have proved to be correlated with the results achieved in the Italian national standardized tests [41–43].

Statistical Analyses

All the analyses were conducted by using the software Mplus (Version 8) [44]. The "Type = complex" approach was used to take into consideration the hierarchical structure of the data (students nested in classrooms) and to compute correct estimates and test statistics. The intraclass correlation (ICC) was 0.215 for SES, 0.156 for language proficiency, and ranged from 0.013 to 0.046 for the items of psychological well-being. A structural equation model (Fig. 1) was tested using the Robust Maximum Likelihood estimator. A multi-group analysis and the Satorra-Bentler Chi-square difference test [45] were performed in order to determine whether the effect of proficiency in the national language on psychological well-being differed for first and second-generation students. The small amount of missing data (less than 5% of the cases) was handled using the Full Information Maximum Likelihood method as implemented in Mplus [44].

Results

Table 1 reports descriptive statistics for the group and individual variables considered in this study. Table 2 presents the correlations between the variables under investigation.

The tested model explained the 6% of the variance in psychological well-being ($p < 0.000$) (Fig. 1). Immigrant pupils who were more proficient in Italian language reported higher levels of psychological well-being ($p < 0.001$). None of the individual and group control variables included in the analysis proved to have a significant influence on immigrant children's psychological well-being (Table 3).¹

Multigroup analysis showed that the effects of the proficiency in Italian language on psychological well-being were the same for immigrant children of both first and second generation (S-B $\chi^2(1) = 1.74$; $p = 0.19$).

¹ Following a Reviewer's suggestion, we have also tested a model without the control variables. In this model the standardized path coefficient of language proficiency on psychological well-being was .190 ($p < .001$) and R^2 was .036 ($p < .001$).

Fig. 1 Results of the structural equation modelling analysis, which examined the effect of immigrant students' proficiency in the host country language on their psychological well-being at school, while controlling for individual and group characteristics. The fit indices for the tested model were CFI = .97; RMSEA = .03; SRMR = .02. Parameters estimates are standardized. Dashed lines represent not significant relationships. *** $p < .001$

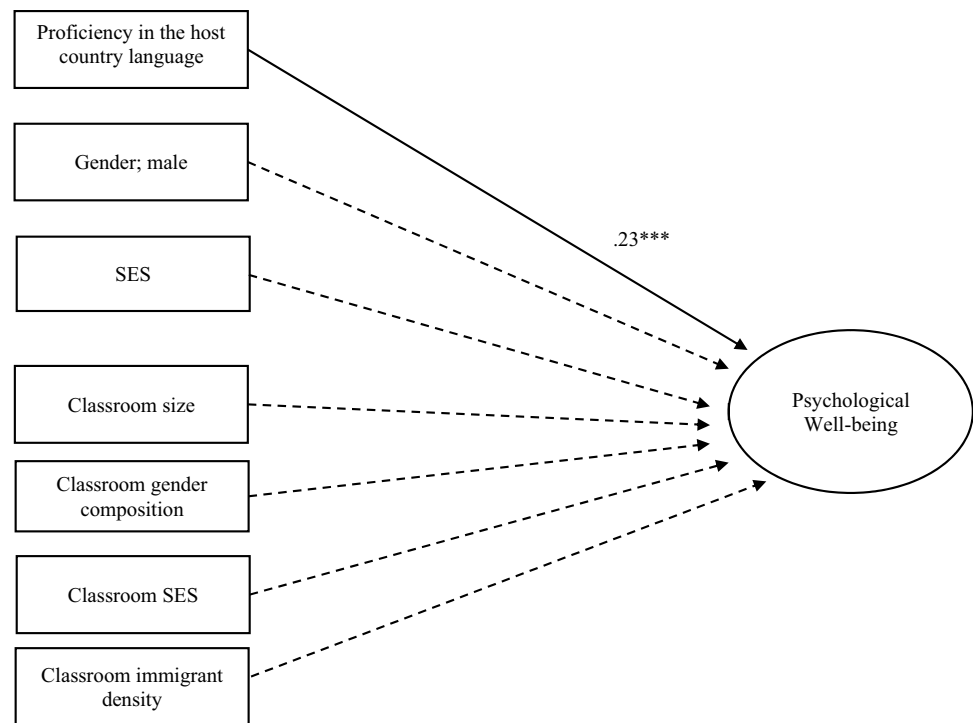


Table 1 Group and individual variables: descriptive statistics

	Mean (SD) or proportion	Median	Min	Max
Individual characteristics				
Psychological well-being ^a	-.06 (.88)	-.04	-2.97	1.51
SES ^b	-.40 (.91)	-.46	-2.69	2.50
Immigrant background, second generation	.65	1	0	1
Gender, male	.51	1	0	1
Proficiency in the host country language ^c	7.85 (1.15)	8	5	10
Group characteristics				
Classroom size ^d	20.82 (3.88)	21	3	28
Classroom gender composition, males	.52 (.11)	.52	.13	1
Classroom socioeconomic level	-.02 (.52)	-.01	-1.82	1.93
Classroom immigrant density	.29 (.24)	.23	.04	1

^aDescriptive statistics for psychological well-being are computed on students' factor scores (in the general population of students the mean is 0 and the standard deviation is .87)

^bSES is a standardized variable with a mean 0 and standard deviation 1 in the general population of students at grade 5

^cProficiency in the host country language is a variable ranging from 5 to 10, measured at the end of the previous academic year (grade 4). In the general population of students, proficiency in the national language has mean 8.33 and standard deviation 1.13

^dClassroom size is referred to the total number of students attending the class, including those ones who, for whatever reason, did not participate to the present study

Discussion

In the present study we investigated the influence of proficiency in the language of the host country (measured one

year previously), as well as of family, peer and individual characteristics, on immigrant children's psychological well-being.

Table 2 Correlations between the variables of the study

Variables	1	2	3	4	5	6	7	8
1. Psychological well-being	–							
2. Proficiency in the host country language	.190**	–						
3. Gender, male	–.023	–.122**	–					
4. SES	.054**	.235**	–.002	–				
5. Classroom size	–.018	.014	.009	–.002	–			
6. Classroom gender composition, males	.012	–.01	.220**	.022	.011	–		
7. Classroom SES	–.005	.079**	–.006	.421**	.011	.012	–	
8. Classroom immigrant density	.006	.051*	.023	–.005	.133**	.127**	–.230**	–

* $p < .05$; ** $p < .01$

Table 3 Standardized parameter estimates, standard errors and p-values for the tested model

Path coefficients	Standardized estimates	S.E.	p-values
Proficiency in the host country language	.231	.026	.000
Gender, male	.001	.026	.972
SES	.026	.029	.366
Classroom size	–.014	.025	.568
Classroom gender composition, males	.010	.027	.719
Classroom SES	–.041	.029	.155
Classroom immigrant density	–.014	.026	.602

A structural equation model was tested on 2334 pupils in a representative sample of 561 Italian primary schools, while taking measurement errors into account.

Among the various characteristics taken into consideration, the SES of the family is widely considered to play a particularly important role in influencing immigrant children's mental health [21–24]. Nevertheless its impact has rarely been investigated due to its limited variability in the small scale studies that have been conducted on immigrant children. The results of the present large scale study show that, within this population, the impact of family SES on psychological well-being might be less important than was previously supposed in the literature. This is also true for all the other individual and peer characteristics that were considered: gender, and classroom SES, gender composition, immigrant density and size.

The main finding of our study is that proficiency in the host country language significantly predicts the psychological well-being of immigrant children one year later. This result is consistent with the Assimilation Theory, according to which a process of increasing similarities between hosting and immigrant population, such as being able to speak the same language, is expected to have positive effects on health [14]. We have contributed to research knowledge also by

showing that the correlation between language proficiency and mental health remains valid even when controlling for the effects of individual, family and group characteristics.

The question of whether the effect of language proficiency on mental health is attenuated over time across immigrant generations is still unclear in the literature. According to a classical assimilation perspective one would expect second generation immigrants to be better socially integrated than those of the first generation since they were born in the host country, and language proficiency should therefore have less impact on their psychological well-being [29, 30]. Instead our data showed that the effect of language proficiency on mental health is the same in both first and second generation immigrants suggesting that importance of factors related to the process of assimilation (in our case, language, and generation) can vary greatly [15]. Having proficiency in the national language of the host country therefore appears to be strictly related to lower levels of psychological distress in immigrant children regardless of whether or not they were born in the country.

Some limitations of the present study should be mentioned. Although we took various variables into consideration, including group and family characteristics, and although the tested relationships between the variables analysed have a theoretical basis supported by previous studies, further studies will be needed in order to determine causal relationships. In this regard, a limitation is also related to the problem of omitted variables, such as the country of origin of the immigrant children, that could confound the relationship between language proficiency and psychological well-being. In addition, all the participating children had been judged by their teachers to have a level of language proficiency that enabled them to understand the questionnaire. Further studies are needed in order to extend our findings to immigrant children who have even a lower level of proficiency in the host country language. The study was limited to Italian data and to measures related to the school context, and further research in various different contexts will therefore be needed in order to further extend our findings.

Finally, our measure of psychological well-being was limited to positive affect. Although positive affect has been shown to be a strong predictor of general mental health [2, 46, 47] as well as of physical health [48, 49], future studies using more comprehensive measures of psychological well-being are needed in order to replicate our findings.

In spite of these limitations, we believe that the present study represents a significant contribution towards understanding the factors that can promote mental health in immigrant children. Language proficiency can influence the ability of immigrant children to integrate themselves into their social environment, have access to healthcare and communicate with those who can provide them with assistance and support. Our results clearly indicate that this factor has a more important role in predicting mental health than variables regarding individual, family and group characteristics, and that this applies to immigrant pupils who are new to the country as well as for those of the second generation. Our findings therefore suggest the need for interventions aimed at improving the proficiency of all immigrant children in the national language, in order to promote their mental health.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Each school dealt with the process of informed consent and parental permission according to the National Evaluation of Learning assessment protocol.

References

1. Perreira KM, Ornelas IJ. The physical and psychological well-being of immigrant children. *Futur Child*. 2011;21:195–218.
2. Fredrickson BL, Losada MF. Positive affect and the complex dynamics of human flourishing. *Am Psychol*. 2005;60:678–86.
3. Steptoe A, Wardle J, Marmot M. Positive affect and health-related neuroendocrine, cardiovascular, and inflammatory processes. *Proc Natl Acad Sci USA*. 2005;102:6508–12.
4. Davidson RJ, Kabat-Zinn J, Schumacher J, Rosenkranz M, Muller D, Santorelli SF, et al. Alterations in brain and immune function produced by mindfulness meditation. *Psychosom Med*. 2003;65:564–70.
5. Cohen S, Doyle WJ, Turner RB, Alper CM, Skoner DP. Emotional style and susceptibility to the common cold. *Psychosom Med*. 2003;65:652–7.
6. Ostir GV, Markides KS, Peek MK, Goodwin JS. The association between emotional well-being and the incidence of stroke in older adults. *Psychosom Med*. 2001;63:210–5.
7. Fredrickson BL, Tugade MM, Waugh CE, Larkin GR. What good are positive emotions in crises? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001. *J Pers Soc Psychol*. 2003;84:365–76.
8. Keyes CLM, Eisenberg D, Perry GS, Dube SR, Kroenke K, Dhingra SS. The relationship of level of positive mental health with current mental disorders in predicting suicidal behavior and academic impairment in college students. *J Am Coll Heal*. 2012;60:126–33.
9. Belhadj Kouider E, Koglin U, Petermann F. Emotional and behavioral problems in migrant children and adolescents in american countries: a systematic review. *J Immigr Minor Heal*. 2015;17:1240–58.
10. Belhadj Kouider E, Koglin U, Petermann F. Emotional and behavioral problems in migrant children and adolescents in Europe: a systematic review. *Eur Child Adolesc Psychiatry*. 2014;23:373–91.
11. Alivernini F, Manganelli S. The classmates social isolation questionnaire (CSIQ): an initial validation. *Eur J Dev Psychol*. 2016;13:264–74.
12. Alivernini F, Manganelli S, Cavicchiolo E, Lucidi F. Measuring bullying and victimization among immigrant and native primary school students: evidence from Italy. *J Psychoeduc Assess*. 2019;37:226–38.
13. Cavicchiolo E, Girelli L, Lucidi F, Manganelli S, Alivernini F. The classmates social isolation questionnaire for adolescents (CSIQ-A): validation and invariance across immigrant background, gender and socioeconomic level. *J Educ Cult Psychol Stud*. 2019;19:163–74.
14. Alba R, Nee V. Rethinking assimilation theory for a new era of immigration. *Int Migr Rev*. 1997;31:826–74.
15. Greenman E, Xie Y. Is assimilation theory dead? The effect of assimilation on adolescent well-being. *Soc Sci Res*. 2008;37:109–37.
16. Okafor M-TC, Carter-Pokras OD, Picot SJ, Zhan M. The relationship of language acculturation (English proficiency) to current self-rated health among African immigrant adults. *J Immigr Minor Heal*. 2013;15:499–509.
17. Organisation for Economic Cooperation and Development. PISA 2012 Technical report. Programme for international student assessment. 2012. Available from: <https://www.oecd.org/pisa/pisaproducts/PISA-2012-technical-report-final.pdf>
18. Murphy JE, Smock L, Hunter-Adams J, Xuan Z, Cochran J, Paasche-Orlow MK, et al. Relationships between English language proficiency, health literacy, and health outcomes in Somali refugees. *J Immigr Minor Heal*. 2018;21:451–60.
19. Rogers-Sirin L, Ryce P, Sirin SR. Acculturation, acculturative stress, and cultural mismatch and their influences on immigrant children and adolescents' well-being. In: Dimitrova R, Bender M, van de Vijver F, editors. *Adv Immigr Fam Res Glob Perspect well-being Immigr Fam*. New York, NY, US: Springer Science + Business Media; 2014. p. 11–30.
20. Toppelberg CO, Collins BA. Language, culture, and adaptation in immigrant children. *Child Adolesc Psychiatr Clin N Am*. 2010;19:697–717.
21. Alivernini F, Cavicchiolo E, Manganelli S, Chirico A, Lucidi F. Students' psychological well-being and its multilevel relationship with immigrant background, gender, socioeconomic status, achievement, and class size. *Sch Eff Sch Improv*. Taylor & Francis; 2019;1–20. Available from: <https://doi.org/10.1080/09243453.2019.1642214>
22. Chen E. Why socioeconomic status affects the health of children: a psychosocial perspective. *Curr Dir Psychol Sci*. 2004;13:112–5.
23. Flook L. Gender differences in adolescents' daily interpersonal events and well-being. *Child Dev*. 2011;82:454–61.

24. Oppedal B, Røysamb E. Mental health, life stress and social support among young Norwegian adolescents with immigrant and host national background. *Scand J Psychol.* 2004;45:131–44.
25. Alivernini F. An exploration of the gap between highest and lowest ability readers across 20 countries. *Educ Stud Routledge.* 2013;39:399–417.
26. Finn JD, Pannozzo GM, Achilles CM. The “Why’s” of class size: student behavior in small classes. *Rev Educ Res.* 2003;73:321–68.
27. Goodenow C. Classroom belonging among early adolescent students: relationships to motivation and achievement. *J Early Adolesc.* 1993;13:21–43.
28. Cavicchiolo E, Girelli L, Di Leo I, Manganelli S, Lucidi F, Alivernini F. The effects of classroom composition and size on bullying and victimization of Italian and immigrant high school students. *Rass di Psicol.* 2019;36:5–20.
29. Barban N, White MJ. Immigrants’ children’s transition to secondary school in Italy. *Int Migr Rev.* 2011;45:702–26.
30. Neidert LJ, Farley R. Assimilation in the United States: an analysis of ethnic and generation differences in status and achievement. *Am Sociol Rev.* 1985;50:840–50.
31. MIUR. Gli alunni con cittadinanza non italiana a.s. 2016/2017 [Students without Italian citizenship. National report 2016/2017]. Uff. Stat. e Stud. 2018. Available from: https://www.miur.gov.it/documents/20182/0/FOCUS+16-17_Studenti+non+italiani/be4e2dc4-d81d-4621-9e5a-848f1f8609b3?version=1.0
32. Alivernini F, Manganelli S, Cavicchiolo E, Girelli L, Biasi V, Lucidi F. Immigrant background and gender differences in primary students’ motivations toward studying. *J Educ Res.* 2018;11:603–11.
33. Alivernini F, Manganelli S, Lucidi F. The last shall be the first: competencies, equity and the power of resilience in the Italian school system. *Learn Individ Differ.* 2016;51:19–28.
34. Dalmasso P, Borraccino A, Lazzeri G, Charrier L, Berchiolla P, Cavallo F, et al. Being a young migrant in Italy: the effect of perceived social support in adolescence. *Heal: J. Immigr. Minor;* 2017.
35. Margari L, Pinto F, Laforzezza ME, Lecce PA, Craig F, Grattagliano I, et al. Mental health in migrant school children in Italy: teacher-reported behavior and emotional problems. *Neuropsychiatr Dis Treat.* 2013;9:231–41.
36. Pirchio S, Passiatore Y, Carrus G, Maricchiolo F, Taeschner T, Arcidiacono F. Teachers and parents involvement for a good school experience of native and immigrant children. *ECPS - Educ Cult Psychol Stud.* 2017;1:73–94.
37. National Institute for the Evaluation of the Education System. Rilevazioni nazionali degli apprendimenti 2014–2015 [National evaluation of learning 2014–2015]. 2014.
38. Alivernini F, Cavicchiolo E, Manganelli S, Chirico A, Lucidi F. Support for autonomy at school predicts immigrant adolescents’ psychological well-being. *J Immigr Minor Heal.* 2019;21:761–6.
39. Wang Y, Tian L, Scott HE. Basic psychological needs satisfaction at school, behavioral school engagement, and academic achievement: longitudinal reciprocal relations among elementary school students. *Contemp Educ Psychol.* 2019;56:130–9. <https://doi.org/10.1016/j.cedpsych.2019.01.003>.
40. Whitley AM, Huebner ES, Hills KJ, Valois RF. Can students be too happy in school? The optimal level of school satisfaction. *Appl Res Qual Life.* 2012;7:337–50.
41. National Institute for the Evaluation of the Education System. Rilevazioni nazionali degli apprendimenti 2019 [National evaluation of learning 2019]. 2019.
42. Alivernini F, Lucidi F. Relationship between social context, self-efficacy, motivation, academic achievement, and intention to drop out of high school: A longitudinal study. *J Educ Res.* 2011;104:241–52. <https://doi.org/10.1080/00220671003728062>.
43. Cavicchiolo E, Alivernini F. The effect of classroom composition and size on learning outcomes for Italian and immigrant students in high school. *J Educ Cult Psychol Stud.* 2018;18:437–48.
44. Muthén LK, Muthén BO. *Mplus: Statistical analysis with latent variables: user’s guide (Version 8)*. Los Angeles, CA: Muthén, L. K. Muthén, B. O; 2017.
45. Satorra A, Bentler PM. Ensuring positiveness of the scaled difference chi-square test statistic. *Psychometrika.* 2010;75:243–8.
46. Cohen JN, Dryman T, Morrison AS, Gilbert KE, Heimberg RG, Gruber J. Positive and negative affect as links between social anxiety and depression: predicting concurrent and prospective mood symptoms in unipolar and bipolar mood disorders. *Behav Ther.* 2017;48:820–33.
47. Houben M, Van den Noortgate W, Kuppens P. The relation between short-term emotion dynamics and psychological well-being: a meta-analysis. *Psychol Bull.* 2015;141:901–30.
48. Chida Y, Steptoe A. Positive psychological well-being and mortality: a quantitative review of prospective observational studies. *Psychosom Med.* 2008;70:741–56.
49. Schenk H, Jeronimus B, van der Krieke L, Bos E, de Jonge P, Rosmalen J. Associations of positive affect and negative affect with allostatic load: a lifelines cohort study. *Psychosom Med.* 2018;80:160–6.

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