

Obsessive beliefs and subtypes of obsessive-compulsive symptoms amongst immigrant children and early adolescents

Andrea Pozza (✉ andrea.pozza@unisi.it)

University of Siena

Anna Coluccia

University of Siena

Silvia Casale

University of Florence

Donatella Marazziti

University of Pisa

Federico Mucci

University of Siena

Giacomo Gualtieri

Santa Maria alle Scotte University Hospital

Lore Lorenzi

Santa Maria alle Scotte University Hospital

Fabio Ferretti

University of Siena

Davide Dèttore

University of Florence

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Abstract

Background. Vulnerability factors for obsessive-compulsive (OC) features in immigrant youth are understudied. The migration process can have a highly stressful impact on the psychological wellbeing of the individual and it may represent a precipitating factor for different forms of psychopathology. Little is known about the occurrence of OC traits. Unlike other European countries, immigration to Italy is a recent phenomenon. In community children/early adolescents, this study compared OC general symptoms/subtypes and vulnerability cognitive factors amongst Italian natives, first- and second-generation immigrants, and examined whether such vulnerability factors moderate the relation between immigrant status and OC symptoms/subtypes, beyond socio-demographic/clinical variables.

Methods. Two hundred sixty-eight children/early adolescents (99 natives, 82 and 87 first- and second-generation immigrants respectively) completed the Obsessive Belief Questionnaire-Child Version, Obsessive Compulsive Inventory-Child Version, Spence's Children Anxiety Scale, Children's Depression Inventory.

Results. As compared with the other groups, first-generation immigrants had the highest levels of perfectionism and threat overestimation. Both first- and second-generation immigrants had higher doubting – checking traits than natives. First-generation immigrants with higher threat overestimation showed lower obsessing traits.

Conclusions. Community screening programs for OC features should consider immigrant youth as a vulnerable group and, potentially, the target of an early intervention.

Introduction

Obsessive-Compulsive Disorder (OCD) in youth: obsessive beliefs as vulnerability factors

Childhood and early adolescence are critical life periods for the development of obsessive-compulsive disorder (OCD), as this condition shows a bimodal incidence distribution with a peak in childhood and a second one during early adulthood [1-2]. OCD in youth is currently considered as an emerging severe condition, as demonstrated by its increasing prevalence rates [3]. According to a review, prevalence rates vary in Europe from 0.38% in Poland to 4.1% in Denmark, while the prevalence rate in USA is 2.9% [4]. If it is not properly recognized and timely managed, OCD in childhood and early adolescence can evolve into a chronic illness, while causing a strong impairment in different domains of functioning including family life, peer relations and school performance [5-9].

The development of strategies for early identification is drawing the attention of policy makers, as one of the peculiar characteristics of help-seeking behaviour in adult OCD patients is that they consult a physician after about 17 years from its onset [10]. The importance of early identification is also supported by the data showing that 30 to 50% of adult patients report the first onset of symptoms during

the prepubertal period [11]. To develop tailored early approaches, a key element is the knowledge of vulnerability factors for OC symptoms or features amongst young individuals in the community [12].

To provide an explanation of the pathogenetic process leading to full-blown disorder, cognitive models of OCD proposed that symptoms might arise from dysfunctional beliefs, specific to this condition, which would act as vulnerability and maintenance factors of the disorder [13-15]. The Obsessive Compulsive Cognitions Working Group [14] identified distinct, albeit intercorrelated cognitive domains, i.e., the so-called "obsessive beliefs" including *Perfectionism/Intolerance of Uncertainty* (the inability to tolerate mistakes or imperfection associated with the difficulty tolerating uncertainty or ambiguity), *Inflated Responsibility* (the belief of being personally responsible for the content of one's thoughts as well as any possible negative outcomes that might arise from such thoughts), *Threat Overestimation* (the exaggerated belief about the probability and cost of aversive events), *Importance and Control of Thoughts* (the belief that the mere presence of the thoughts makes those thoughts meaningful and that complete control over them is both possible and necessary).

A large amount of observational and experimental studies in clinical and non-clinical adult samples demonstrated the association between obsessive beliefs and OCD [16], but not all the studies supported this relationship [17]. Moreover, some of the so-called obsessive beliefs may not be specific of OCD, i.e., they are also associated with anxiety or depressive symptoms or disorders, and some beliefs may be more strongly related to OCD than other [18-19].

A relatively smaller body of research focused on the role of obsessive beliefs in OCD children or early adolescents with OCD and the available data appear inconsistent [20-21]. In a small clinical sample, OC symptoms resulted weakly associated with *Perfectionism* and *Intolerance of Uncertainty* and moderate associations with the other obsessive beliefs [20]. In community and OCD samples of children and adolescents, all the obsessive beliefs differentiated patients with OCD from community control subjects, but the associations between all the obsessive beliefs and OCD symptoms were comparable to those between the obsessive beliefs and symptoms of anxiety or depression [21]. All the obsessive beliefs were related to OC symptoms in a comparable manner as to symptoms of anxiety in another community sample, while raising again doubts about the specificity of some of the obsessional beliefs in children and adolescents [22].

The specificity of *Inflated Responsibility* beliefs to OCD was investigated through a meta-analysis of 58 studies ($n = 15678$) including studies in children or adolescents [17]. The results showed a medium effect size of this association, although there was a significant difference between the effect sizes in adult versus child-adolescent samples: *Inflated Responsibility* beliefs appeared more strongly endorsed by adults than by children/adolescents [16]. In addition, this domain was more strongly associated with OCD than with depressive disorders, but equally with anxiety disorders [16]. Evidence from more recent primary studies in large community or clinical samples of adolescents [23-24] supported the cross-sectional association between *Perfectionism* and *Intolerance of Uncertainty* and OCD even when controlling for anxiety and depressive symptoms. Other studies found a specific relation of *Perfectionism* and

Intolerance of Uncertainty with symmetry and ordering symptoms [25]. In a group of adolescents with OCD, very strong correlations between overvalued ideation were reported, a cognitive domain which is similar to the *Importance of Thoughts* belief, and OCD severity [26].

Immigration and OCD in youth: an under-studied relation

The relationship between immigration and the development of psychopathological conditions is a quite long-debated question [27]. The migration process and all the factors it entails (e.g., the event of migration, adaptation to a new socio-cultural context, being part of a minority, low socio-economic status) can have a highly stressful impact on the psychological wellbeing of the individual and contribute to the development of different forms of psychopathology [28].

Several systematic reviews conducted in immigrant samples with different ethnic minorities and across different socio-cultural contexts showed that immigrants report a higher risk of different psychiatric symptoms or disorders than natives [29-31]. Other studies suggested a more complex relationship between immigration and mental health. According to a recent meta-analysis of epidemiological studies, first-generation immigrants would be at higher risk of psychiatric disorders than second-generation ones and male gender would be a predictive factor of a higher risk [32]. This result was confirmed also by primary studies conducted in youth that showed higher levels of psychopathology in first-generation cohorts than second-generation ones [e.g., 33-34]. However, other studies in youth found no differences on psychopathological symptoms across generation cohorts [e.g., 35-36].

While most of the literature focused on severe or major psychiatric symptoms or disorders, i.e., psychosis, mood, and anxiety disorders [37-41], the relationship between immigration and OCD symptoms is under-studied, though it is progressively drawing the attention of researchers, practitioners, and policy makers. As suggested [39], immigrants are generally under-represented in clinical studies on OCD, even because they have often poor access to mental health services [40].

The few existing studies showed a higher risk of OCD symptoms in immigrant adults [42-44]. However, there is a lack of data on the relation between immigration and OCD in youth. In addition, the available studies did not report whether the ethnic minorities were natives or first- or second-generation immigrants.

A study carried out on students reported that some ethnic minorities showed higher levels of OCD-related features including general symptoms, subtype traits (checking, washing, and obsessing), and obsessive beliefs (*Inflated Responsibility/Threat Overestimation* and *Importance/Control of Thoughts*) [45]. These data were consistent with previous studies on students [46].

Immigration to Italy is a relatively recent phenomenon that witnessed a greater increase in recent years, unlike other European countries [47]. According to a report published in 2019, Italy is third amongst European Union countries for the number of migrants present in the country [48]. A recent survey showed that in 2017 the migratory flow to Italy involved over 300,000 foreigners highlighting a sharp increase of

15% compared to the previous year, including an increase of immigrant children and early adolescents [49].

Rationale and objectives

In the Italian socio-cultural context, there are no data on OCD symptoms and the related vulnerability factors in immigrant children and early adolescents. The investigation of the obsessive beliefs in youth in the community is important, as it might inform screening and potentially early intervention strategies with children and early adolescents, which is a still neglected topic in OCD research overall [10, 50].

Therefore, in a large sample of children and early adolescents the current study aimed at (a) comparing the levels of OCD-related features (general symptoms, subtype traits and vulnerability cognitive factors) amongst three groups, i.e., Italian natives, first-generation immigrants, and second-generation immigrants; (b) investigating whether vulnerability cognitive factors for OCD (i.e., obsessive beliefs) can moderate the relation between immigrant status and OCD symptoms and subtype traits, controlling for the effects of other socio-demographic and clinical variables (age, gender, anxious and depressive features). Based upon previous theoretical proposals suggesting the stressful effects of immigration on mental health [28] and previous evidence showing a higher risk of various psychopathological symptoms including OCD features in adult immigrants [29-31, 38, 44], we hypothesized that both first- and second-generation immigrants would show higher levels of OCD general symptoms, subtypes and beliefs than natives and that first-generation immigrants had higher levels than the other two groups, controlling for other variables such as socio-demographics (age and gender) and anxious and depressive features. In addition, based upon the cognitive model of OCD [15] and previous evidence on the obsessive beliefs in ethnic minorities [45], we hypothesized that the obsessive beliefs would moderate the relation between immigrant status and OCD symptoms, i.e., first- and second-generation immigrants with higher obsessive beliefs have higher OCD symptoms.

Method

Participants and procedure

A non-random convenience sample of 268 children and early adolescents was included. Ninety-nine were natives, 82 were first-generation immigrants and 87 were second-generation immigrants. Mean age was 10.82 years old ($SD= 1.42$, range= 8 - 14); one hundred twenty-one (45.1%) were females. Inclusion criteria were age of 8-14 years old and written informed consent provided by both the parents. An age range of 8-14 years was chosen since this developmental phase represents childhood and early adolescence, while adolescence can be considered a developmental phase that starts after 14 years. Exclusion criteria consisted of (a) learning disability, (b) mental retardation, (c) neurological diseases, (d) diagnosis of autism, (e) schizophrenia or bipolar disorder, (f) difficulty in reading and understanding written Italian language. The diagnoses considered for exclusion criteria had to be established by a mental health professional working in the national health system.

A cross-sectional design was adopted. Data were collected at six elementary or mid-schools in three cities of Central Italy. Participants completed the paper and pencil measures during regular class hours. Administration of the self-report questionnaires was assisted by a team of psychologists in classrooms and lasted approximately 30 minutes. In conformity with the Italian law, all the minor participants' parents gave written informed consent to participate in the study, after having received a written description about its general purposes. Participants were assured that participation was optional and gave informed consent. All methods were performed in accordance with the relevant guidelines and regulations.

Measures

Socio-demographic features

Socio-demographic characteristics including gender, age and native or immigrant status were assessed through a self-report questionnaire specifically developed for this study.

Obsessive Beliefs Questionnaire-Child Version [OBQ-CV; 20]

The OBQ-CV is a 44-item questionnaire, originally developed to measure three obsessive cognitive domains through three scales: *Responsibility/Threat Estimation*, *Perfectionism/Uncertainty*, and *Importance/Control of Thoughts*. Further investigations supported the existence of four factors: *Responsibility*, *Threat Overestimation*, *Perfectionism/Intolerance of Uncertainty*, and *Importance/Control of Thoughts* [21]. Answers are scored on a 5-point scale (disagree very much = 1, agree very much = 5). Higher scores indicate more obsessive beliefs. The four scales obtained good to excellent internal consistency in community and clinical samples (range of Cronbach's alpha = 0.82 – 0.95) [21]. The Italian version showed good internal consistency in all the four scales [51].

Obsessive-Compulsive Inventory-Child Version [OCI-CV; 52]

The OCI-CV is a 21-item questionnaire assessing obsessive symptoms in children and adolescents between 7 and 17 years old. It was developed following the six-factor structure of the adult version of the Obsessive-Compulsive Inventory-Revised (OCI-R) [53]. The OCI-CV classifies symptoms of OCD in six subtypes: *Doubting/checking*, *Pure obsessing*, *Hoarding*, *Washing*, *Ordering*, and *Neutralising*. Items are scored on a 3-point Likert scale (0 = never to 2 = always). In the original study by Foa and colleagues [52] (2010), the OCI-CV has shown moderate to high internal consistency (Cronbach's alpha = 0.85 for the total score; a range from 0.81 to 0.88 for the subscales). The Italian version confirmed a six correlated factor structure and acceptable to excellent reliability (range of Cronbach's alpha = 0.73 - 0.94) across the scales [54-55].

Children's Depression Inventory (CDI; 56)

The CDI is a questionnaire that consists of 27 items measuring the severity of depressive symptoms in children and adolescents (11-17 years old). Respondents are required to mark one of three statements

best describing their feelings within the previous two weeks. Total scores range from 0 to 54: higher scores indicate more severe symptoms. The CDI showed good internal consistency (Cronbach's alpha= 0.86) and adequate concurrent and discriminant validity [56]. The Italian version of the CDI showed good internal consistency (Cronbach's alpha= 0.80) [57]. For the current sample, internal consistency was good (Cronbach's alpha= 0.89).

Spence's Children Anxiety Scale (SCAS; 58)

The SCAS is a 44-item self-report measure including items across the symptom domains of panic/agoraphobia, separation anxiety disorder, physical injury, social phobia, OCD, and generalized anxiety disorder. The scale does also include items about wellbeing and self-esteem. For the present study, the Italian version of the measure was used which has shown excellent internal consistency for the total score ($\alpha = .91$) and poor to acceptable internal consistency for the six subscales (range of $\alpha = .62-.74$) in a previous study [59].

Statistical analyses

A series of one-way analysis of variance (ANOVA) was carried out to explore the differences between the three groups on the levels of the OCD-related features (i.e., general OCD symptoms and subtype traits and obsessive beliefs measured respectively by the OCI-CV and OBQ-CV scores) and anxious and depressive features assessed respectively by the SCAS and CDI scores. For this analysis the effect sizes were calculated as Cohen's f indices and they were interpreted according to the following criteria: $f = 0.1$ small effect, $f = 0.25$ medium effect, $f = 0.4$ large effect. For this analysis, an a-priori power analysis suggested that the required sample size to detect a medium effect with 80% power and a p -value set at .05 was 159 participants.

Subsequently, to investigate the relation between immigrant status and general OCD symptoms and subtypes controlling for socio-demographics (age and gender) and anxious and depressive features (SCAS and CDI scores), a series of generalized linear models with maximum likelihood estimation method was performed. Specifically, we entered as independent variables the main effects of immigrant status, socio-demographics (age and gender), OBQ-CV, SCAS and CDI scores and the interaction effects between immigrant status and obsessive beliefs (OBQ-CV scores) and as dependent variables the scores on the OCI-CV. The statistical significance was set at $p < .05$. The statistical analyses were run through SPSS version 23.00.

Results

Comparisons between first- and second-generation immigrants and natives

The results of the between-group comparisons based on the one-way ANOVAs are shown in Table 1. First-generation immigrants showed significantly higher scores on the OBQ-CV *Perfectionism* with a medium effect size, as compared with second-generation immigrants who in turn had higher scores than natives.

The group of first-generation immigrants reported significantly stronger *Threat Overestimation* beliefs than natives with a small effect size, as shown by the OBQ-CV *Threat Overestimation* scores.

Both first- and second-generation immigrants showed significantly more elevated scores on the OCI-CV *Doubting – Checking* and on the OCI-CV *Total* than natives with a medium and a small effect size respectively, while no differences emerged between first- and second-generation immigrants.

The group of second-generation immigrants reported significantly higher levels of depressive features than the group of natives with a small effect size, as suggested by the CDI scores.

No differences were detected between the three groups on the scores of the other scales (OBQ-CV *Responsibility*, OBQ-CV *Control of Thoughts*, OCI-CV *Obsessing*, OCI-CV *Hoarding*, OCI-CV *Washing*, OCI-CV *Ordering*, and OCI-CV *Mental Neutralising*).

Effects of immigrant status and obsessive beliefs on OCD general and subtype symptoms

The results of the generalized linear models are displayed in Tables 2 - 8. Female gender was associated with significantly lower scores on the OCI-CV *Doubting-Checking* scores, while first- and second-generation immigrant status, higher age, higher *Threat Overestimation* and higher SCAS *Total* scores were associated with higher scores on OCI-CV *Doubting-Checking*. This suggested that girls had more elevated tendencies towards doubting and checking; first- and second-generation immigrants, those with higher age, those with stronger threat overestimation levels and more anxious features had more elevated tendencies towards doubting and checking.

Higher scores on the SCAS *Total* were associated with higher scores on the OCI-CV *Obsessing* scores. In addition, an interaction effect between immigrant status and OBQ-CV *Threat Overestimation* scores emerged: first-generation immigrants with lower OBQ-CV *Threat Overestimation* scores showed higher OCI-CV *Obsessing* scores. This indicated that participants with more anxious features and first-generation immigrants with lower *Threat Overestimation* had higher obsessing features.

Female gender was associated with lower OCI-CV *Hoarding* scores, while higher SCAS *Total* scores were associated with higher OCI-CV *Hoarding* scores. This result showed that girls and participants with more anxious features showed, respectively, lower and higher tendencies towards hoarding.

Higher *OBQ-CV Perfectionism* and higher SCAS scores were associated with higher OCI-CV *Washing* scores. This result suggests that more perfectionist and anxious participants had more elevated washing features.

Female gender and higher SCAS scores were associated with respectively lower and higher OCI-CV *Ordering* scores. That is to say that girls and more anxious participants had respectively lower and higher tendencies towards ordering.

Female gender and higher OBQ-CV *Responsibility* scores were related to lower OCI-CV *Mental Neutralizing* scores, while higher SCAS and CDI scores were related to higher OCI-CV *Mental Neutralizing* scores. This suggests that on the one hand girls and participants with stronger responsibility beliefs had lower mental neutralizing features, on the other hand those with more elevated anxious and depressive features had higher mental neutralizing features.

Female gender was related to lower OCI-CV *Total* scores, while higher OBQ-CV *Threat Overestimation*, CDI and SCAS scores were associated with higher OCI-CV *Total* scores. Girls had lower general OCD-related features, while those with higher threat overestimation, depressive and anxious features reported higher general OCD-related features.

Discussion

Migration can be a severely stressful event on the mental health of youth. The presence of OCD-related features in immigrant youth is under-studied in the international literature [40, 43]. Some evidence suggests that OCD-related features including obsessive cognitive vulnerability factors may be higher in immigrants [45], but no study yet differentiated between natives and first- or second-generation immigrants. It is noteworthy that no specific data are available in authors' a country recently witnessing an increasing number of immigrants, although with no doubt they should inform health policies on early strategies aimed to promptly identify vulnerable groups.

Consequently, the present study aimed to provide the first empirical contribution in Italy that compared the levels of OCD-related features among first-generation, second-generation immigrants and natives, and explored whether cognitive vulnerability factors for OCD (i.e., obsessive beliefs) can moderate the relation between immigrant status and OCD symptoms and subtype traits.

A first analysis of between-group comparisons showed that first-generation immigrants were the group having the highest levels of some, but not all, of the OCD-related features particularly stronger perfectionism and threat overestimation. This result is in line with the findings of Wu and Wyman [45] reporting that ethnic minorities have higher inflated responsibility/threat overestimation and importance/control of thoughts than natives. However, the study by Wu and Wyman [45] did not assess immigrant status or generation; in addition, the sample recruited by these authors consisted of undergraduates, an older cohort than the present one. The fact that first-generation immigrants had higher levels of some OCD-related features is consistent with the data of a recent meta-analysis supporting a higher risk of psychiatric disorders in this group than the second-generation one [36]. Perhaps, a number of factors might explain this outcome such as the adaptation to a new socio-cultural context, being part of a minority, and reduced social support among first-generation immigrant youth [60-61].

Consistent with our hypotheses, both first- and second-generation immigrants had higher levels of doubting – checking symptoms and general OC symptoms than natives. This result is in line also with previous evidence of higher levels of general OC symptoms and checking features [45], but it is in

contrast with that of another study describing differences also in washing and obsessing subtypes. The presence of higher levels of general OC symptoms is consistent with studies conducted on immigrant adults that indicated a higher risk of OC symptoms in this group [41-44].

Again, second-generation immigrants reported higher depressive features than natives, in agreement with previous data in adolescents, indicating that this group may be vulnerable to depressive symptoms to a higher extent than natives [62].

Subsequently, more complex analyses performed by generalized linear models showed that girls had lower levels of doubting-checking, hoarding, mental neutralizing, ordering and general OC features than boys. These findings are at variance with previous findings that detected no differences between the two genders [63-64].

In addition, first- and second-generation immigrants had higher doubting-checking features. This finding may be considered in line with recent literature indicating that the doubting-checking subtype might be the most relevant one the network structure of OCD in youth [65].

Other results showed that higher anxious features related to higher obsessing features support the relation between anxiety and OC features in community samples, particularly mental aspects of OCD, i.e., mental compulsions [66]. This result may be viewed consistent with the notion that mental compulsions are overlapped with generalized anxiety and worry in youth [67].

The present findings indicated that first-generation immigrants with higher Threat Overestimation scores show lower *Obsessing* features. This result is in contrast with our hypothesis since it might suggest that more elevated *Threat Overestimation* works as a protective effect against obsessing features in this group of immigrants.

Higher *Perfectionism* and higher anxious features were associated with higher washing features, in agreement with the cognitive model of OCD [15] and with literature data showing the relation between anxiety and OCD [67].

Some limitations and future directions should be acknowledged. A first shortcoming regards the lack of a sample with a full diagnosis of OCD. Another point concerns the cross-sectional design. Future research should prospectively assess the role of vulnerability cognitive factors and immigration. The use of self-report questionnaires should be considered another shortcoming; future studies should use standardized interviews conducted by a clinician (e.g., K-SADS) to detect the presence of full-blown OCD. It should be noted that also three of the ANOVA-based comparisons, respectively on OBQ-CV *Threat Overestimation*, CDI *Total*, and OCI-CV *Total* scores were associated with a *p*-value significant at a .05 level; however, if a Bonferroni correction for multiple comparisons had been used ($p = .05/13 = .003$), *p*-values would not have been significant.

Another aspect requiring further investigation is a larger age range. Future research should expand inclusion to late adolescents (15-19 years old). In addition, other factors associated with the immigrant

status (e.g., country of origin, type of religion, reasons that lead to migration, social support) might be relevant moderators of the relation between obsessive beliefs and immigration.

Conclusions

According to our knowledge, the present study is the first investigating the relation between immigrant generation and different OC features. Our findings showed that as compared with the other groups, first-generation immigrants had the highest levels of two cognitive domains, specifically, *Perfectionism* and *Threat Overestimation*. Both first- and second-generation immigrants had higher doubting – checking than natives. Immigrant status and generation might a variable that should be considered in community screening and early intervention programs, which is a still neglected topic in OCD research.

Declarations

Ethics approval and consent to participate

The study was approved by the University of Florence ethics committee. Participants and their parents provided written informed consent.

Ethics, consent and permissions

Written informed consent forms for publication were signed by the participants.

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interest

The authors declare that they have no competing interests.

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Authors' contributions

AP designed the study, collected and analysed the data, made the literature searches, wrote the first draft of the paper.

AC made the literature searches, reviewed and checked the editing of the final version of the paper.

DM designed the study, reviewed the first draft of the paper, checked the editing of the final version of the paper.

SC designed the study, reviewed the second draft of the paper, and edited the final version.

FM conducted the literature searches, wrote the first draft of the paper.

GG reviewed the first and the final draft of the paper.

LL conducted the literature searches, reviewed the final version of the paper.

FF designed the study, analysed the data, checked and reviewed the final version of the paper.

DD designed the study, supervised data collection, checked and reviewed the final version of the paper.

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Tables

Tables 1-8 are available in the Supplementary Files

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