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Does family matter? Exploring the role of family background on impostor syndrome among successful Finnish university students

Hanna Nori[1] · **Markku Vanttaja**[1]

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Abstract
This study explores how family background shapes impostor syndrome (IS) among academically successful Finnish university students. While IS is commonly framed as an individual psychological phenomenon, this study emphasises its sociocultural dimensions by examining the influence of family socioeconomic status (SES) and parenting practices. Using survey data from 1,954 students with strong academic performance, the findings show that students from financially disadvantaged backgrounds report higher levels of IS. In multivariate models, financial situation, but not parental education or social class, uniquely predicted IS. Parental encouragement emerged as a protective factor against IS, while a modest positive association was observed between paternal expectations and impostor feelings. Gender differences were also observed, with women reporting significantly higher IS levels than men. Although the effect sizes in the regression analyses were modest, the results underscore the importance of early family experiences in shaping students' academic self-perceptions. By integrating Bourdieu's concept of habitus with Vygotsky's theory of inner speech as conceptual lenses, the study highlights the interplay between structural inequality and internalised self-evaluation. These findings call for higher education policies that address not only individual psychological needs but also the broader social conditions that contribute to impostor experiences.

Keywords Impostor syndrome · Socioeconomic status · Parenting · Habitus · Inner speech · University students

✉ Hanna Nori
hanna.nori@utu.fi

[1] Department of Education, University of Turku, Turku, Finland

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1 Introduction

This study investigates impostor syndrome (IS) among academically successful Finnish university students, focusing on the effects of childhood family socioeconomic status (SES) and parenting practices. IS, originally termed the impostor phenomenon by Clance and Imes (1978), is characterised by persistent self-doubt and an intense fear of being exposed as an intellectual fraud despite clear evidence of competence and success. Individuals experiencing IS often attribute their achievements to external factors, such as luck or deceit, rather than to their abilities. This cognitive distortion creates a cycle of self-doubt, increased fear of failure, and ongoing concerns about competence (Clance & O'Toole, 1987; Parkman, 2016). These feelings can significantly affect university students' academic experiences, emotional well-being, and future career paths (Shin & Lytle, 2024).

The university environment is frequently described as a fertile ground for the development of IS. Academic institutions are structured around rigorous evaluations, competitive standards, and a performance-driven culture, which can heighten students' feelings of inadequacy (Anderson et al., 2023). Scholars have noted that academic settings—especially those emphasising efficient studying and intellectual excellence—can foster a "culture of genius" (Slank, 2019), prioritising innate talent over effort. This cultural context generates pressure to excel effortlessly, exacerbating IS among high-achieving individuals. Beyond academic challenges, IS has been linked to decreased job satisfaction, delayed career progression, and reluctance to pursue leadership roles, highlighting its far-reaching consequences (Neureiter & Traut-Mattausch, 2016).

Although IS is often conceptualised as a psychological phenomenon rooted in individual cognitive patterns, Clance and Imes (1978) already highlighted in their seminal paper how family dynamics can shape the development of the impostor phenomenon. Growing evidence further suggests that broader social and cultural factors play a substantial role (Feenstra et al., 2020; Phelan, 2024; Vanttaja et al., 2024). Family background, including social class, financial resources, and parenting practices, has been identified as a key determinant of students' self-perception and academic confidence (Manstead, 2018). Socioeconomic and cultural conditions, therefore, can significantly influence a student's vulnerability to IS. Despite this, research on the sociocultural determinants of IS remains limited, as most studies have focused on psychological predictors (Bravata et al., 2020).

Existing evidence suggests that students from working-class backgrounds may encounter unique challenges, such as heightened self-doubt and alienation in academic settings (Lehmann, 2014; Montes, 2024; Reay et al., 2009). These challenges are often linked to disparities in cultural and social capital, which can make academic environments feel less familiar and accessible. Structural barriers—such as limited financial resources and reduced access to academic support—may further intensify students' sense of not belonging, thereby increasing susceptibility to impostor experiences. Consistent with this, a study by Canning et al. (2020) found that first-generation students are more susceptible to IS compared to their continuing-generation peers, primarily due to a lack of familial experience in navigating higher education (HE) environments. This limited academic cultural capital may lead first-generation

students to attribute challenges to personal deficiencies, reinforcing impostor-like thoughts. Conversely, students from middle-class families may experience intense pressure to succeed due to elevated parental expectations, resulting in similar impostor feelings (Eriksen, 2021). Additionally, research indicates that parental support and encouragement are crucial in mitigating IS (King & Cooley, 1995; Shubham & Malik, 2024; Want & Kleitman, 2006; Yaffe, 2023). This duality underscores the need to examine both structural elements, such as social class and economic resources, and agency-driven factors, such as parenting practices and family culture (Li, 2024).

In the Nordic context, research on IS remains scarce. In Finland, where HE is tuition-free for students from EU and EEA countries, socioeconomic differences persist in students' access to academic support and cultural resources. Recent studies suggest that limited family economic and cultural capital may still disadvantage students during their studies (Lehti & Kinnari, 2024), underscoring the importance of examining how SES shapes university experiences even in egalitarian systems.

1.1 IS in the HE context

Empirical research has consistently demonstrated that IS is prevalent among students and faculty in competitive academic environments (Parkman, 2016). Undergraduate and postgraduate students across diverse educational institutions frequently report experiencing IS, which is associated with increased levels of stress, anxiety, and depressive symptoms. Lindholm and Luukka (2024) highlight how HE has transitioned from a public good to a global marketplace, where individuals must continuously measure themselves against institutional criteria, often leading to self-doubt and IS. A systematic review of IS in HE revealed its widespread occurrence across various demographic groups and academic disciplines, underscoring its pervasive impact on the psychological well-being and academic performance of students (Bravata et al., 2020). Another review of 37 studies conducted between 2019 and 2024 revealed that IS is prevalent among undergraduate and postgraduate students across multiple countries, including the United States, China, the United Kingdom, Canada, and Finland. The review highlighted that IS is linked to negative psychological states such as anxiety, depression, and low self-esteem, which can adversely affect academic performance and overall well-being (Yang et al., 2024). In doctoral education, the competitive nature of academia exacerbates feelings of inadequacy and self-perceived fraudulence. For instance, a study conducted among Finnish PhD students found that the performance-driven culture of HE institutions significantly contributes to IS development, resulting in diminished self-efficacy and increased psychological distress (Nori & Vanttaja, 2023).

Several interrelated factors contribute to the manifestation and persistence of IS within academic settings. Individuals with perfectionistic tendencies often set unrealistically high standards and perceive minor setbacks as evidence of personal incompetence, thereby reinforcing feelings of fraudulence (Egan et al., 2011). A perceived lack of social belonging within academic communities exacerbates IS, particularly among students from underrepresented backgrounds. Structural inequalities and systemic biases further intensify these experiences (Cokley et al., 2013). Research indicates that women are disproportionately affected by IS (Bravata et al., 2020).

Societal expectations and gendered stereotypes contribute to persistent self-doubt and a reluctance to acknowledge achievements (Avolio et al., 2024; Lawson, 2021). Furthermore, mature-aged[1] female students often face familial tensions that exacerbate IS. Conflicts arising from balancing academic pursuits with traditional family roles can produce feelings of inadequacy and self-doubt (Hook, 2022).

The ramifications of IS are profound, affecting both academic success and mental health. Students experiencing IS are more likely to engage in maladaptive academic behaviours, such as procrastination, avoidance of academic challenges, and reluctance to seek support (Matthews & Clance, 1985; Shin & Lytle, 2024). These behaviours often result in suboptimal academic performance and heightened psychological distress. Faculty members are similarly affected, with IS contributing to professional burnout, reduced research productivity, and lower job satisfaction (Hutchins et al., 2018). The chronic self-doubt associated with IS can hinder career progression and engagement in professional development opportunities (Neureiter & Traut-Mattausch, 2016).

1.2 Habitus, inner speech, and IS

In this study, IS is approached as a socially and culturally mediated mode of thinking that develops through lifelong interaction with one's environment. To illuminate these dynamics, we draw on Bourdieu's concept of habitus and Vygotsky's theory of inner speech as complementary interpretive frameworks. This approach is grounded in a social constructionist understanding of reality, in which structural conditions and individual meaning-making processes are seen as mutually constitutive (Berger & Luckmann, 1966).

Bourdieu's (1986) theory highlights how economic, cultural, and social capital shape individuals' dispositions and opportunities. Through early socialisation, families transmit forms of capital that contribute to the development of habitus—internalised ways of perceiving and acting in the world (Bourdieu & Wacquant, 1995). In HE contexts, students whose habitus aligns with dominant middle-class norms often experience a sense of familiarity and ease, whereas those from working-class backgrounds may encounter a "cleft habitus" (Bourdieu, 2008). This misalignment can intensify feelings of not belonging and contribute to impostor experiences.

Vygotsky's (1934/1986) theory of inner speech complements this structural perspective by focusing on how social interactions become internalised as self-directed thought. Parental messages, expectations, and everyday communication can shape the evaluative inner dialogue through which students interpret their abilities and successes. Supportive messages may foster confidence and resilience, whereas critical or demanding feedback may reinforce self-doubt.

Together, these perspectives emphasise the interplay between structural inequalities and internalised evaluative processes in shaping impostor feelings. Bourdieu helps explain how socioeconomic resources condition the fit between students and academic fields. At the same time, Vygotsky highlights how early interactions may influence the inner narratives through which academic competence is interpreted.

[1] Hook's study monitored 10 student-parents between the ages of 40 and 60.

Importantly, these theories do not form a testable causal model in this study. Rather, they serve as conceptual lenses that inform the framing and interpretation of our empirical findings, which are based on cross-sectional associations rather than inferred developmental pathways.

1.3 Research questions

Based on these theoretical foundations, we developed expectations regarding how family background might influence impostor experiences. Prior research suggests that families with greater economic and cultural resources tend to provide more encouragement, richer cultural exposure, and higher educational expectations. Accordingly, we expected that students from higher SES backgrounds would report more supportive parenting practices than students from lower SES backgrounds. Conversely, students from financially or culturally disadvantaged families may experience a mismatch between their habitus and the dominant norms of HE, potentially heightening feelings of self-doubt and impostorism. Theories of habitus and inner speech suggest that early family messages are internalised as evaluative inner speech, shaping students' academic self-perception. Therefore, we anticipated that parental encouragement would function as a protective factor, whereas excessive parental expectations might increase impostor feelings—particularly among students already facing structural disadvantage. These theoretically grounded expectations guided the formulation of our research questions:

1) How do parenting practices differ across socioeconomic status groups?
2) How are family socioeconomic status and parenting practices associated with impostor syndrome?

To examine these relationships, we first identify relevant dimensions of parenting and then test how these dimensions, together with socioeconomic background, relate to students' impostor experiences. While this study focuses on the Finnish context, its findings may hold relevance for higher education systems in other countries, given the structural and cultural similarities across academic environments. By deepening the understanding of IS and the role of family background, this research aims to inform HE policies and practices in Finland and beyond.

2 Method

2.1 Research sample and recruitment

To answer our research questions regarding the influence of family background on IS, we surveyed 4,994 undergraduate students from all eight Finnish-speaking multidisciplinary universities in 2022. The survey was distributed through email lists, university announcements, and student organisation communication channels to ensure wide reach and diverse participation. Before distribution, the survey was reviewed and approved by each participating university through their respective institutional

procedures for assessing research requests. A data protection notice, based on Articles 13 and 14 of the EU General Data Protection Regulation (GDPR), was included with the survey. Participants were informed in the cover letter that participation was entirely voluntary and that they could withdraw from the survey at any time. The survey was administered anonymously and did not collect any personal data, ensuring that individual respondents could not be identified.

The survey consisted of multiple-choice and open-ended questions about students' sociodemographic backgrounds, childhood family, and previous educational experiences, as well as the Clance Impostor Phenomenon Scale (CIPS; Clance, 1985, see Appendix A).

In Finnish universities, student performance at the bachelor's and master's levels is typically assessed using a numerical grading scale ranging from 0 to 5, where 0 denotes a failing grade and 1–5 represent passing grades: 1 (sufficient), 2 (satisfactory), 3 (good), 4 (very good), and 5 (excellent). In this study, we included only students with an average academic grade of 4 or higher. This criterion was used to focus on objectively high-performing students, to explore how IS can manifest even among those with demonstrable academic success. By isolating a population with strong academic records, we aimed to better examine the discrepancy between external achievement and internal self-perception—a core feature of IS.

Furthermore, only students under the age of 30 were included. This age restriction was applied to ensure a relatively homogeneous sample in terms of life stage and educational trajectory, as younger students are more likely to be actively engaged in higher education and directly exposed to the institutional contexts relevant to this study.

Finally, the study considered only male and female participants, excluding non-binary individuals and those who chose not to disclose their gender. This decision was made due to the limited number of non-binary respondents (2.4% of the total sample), which would not have allowed for meaningful statistical analysis or subgroup comparison. We acknowledge this as a limitation and emphasise the need for future research to explore the experiences of gender-diverse students with IS.

In our study, the classification of parental social class and economic status is based on participants' perceptions and evaluations of their childhood family's social position. This approach draws on the work of Kraus et al. (2009), who demonstrated that subjective social class predicts individuals' cognitive and social processes independently of objective socioeconomic indicators. Subjective class identification thus provides valuable insight into individuals' lived experiences and the potential impact of those experiences on their attitudes and behaviour. By capturing how students perceive their background relative to others, this approach offers valuable insights into the psychological and social mechanisms that may underlie feelings of inadequacy and not fitting in within the academic environment.

The final sample comprised 1,954 students, of whom 80.8% were female, and 19.2% were male. The age distribution was as follows: 60.1% were aged 20–24 years, 37.4% were aged 25–29 years, and 2.5% were under 20 years old. Women were overrepresented among the respondents, reflecting the fact that approximately 60.5% of students in multidisciplinary universities were female in 2022 (Vipunen, 2023). The survey included participants from all targeted universities, with notably

higher response rates observed among students in medicine, health sciences, psychology, and the natural sciences. Students from social sciences, humanities, and education were also represented, although to a lesser extent. Programmes in business, engineering, and the arts were underrepresented due to the study's focus on multidisciplinary universities.

2.2 Measures

2.2.1 Clance impostor phenomenon scale

The Clance Impostor Phenomenon Scale (CIPS) is a widely recognised and validated tool for measuring IS. Compared to other scales, CIPS provides a more comprehensive assessment by evaluating multiple aspects of impostor feelings, such as fear of failure, difficulty internalising success, and attributing achievements to external factors like luck. The psychometric properties of CIPS have been tested extensively, demonstrating strong reliability and validity across different populations and professional settings (Chrisman et al., 1995; French et al., 2008). The scale has also been successfully applied in various cultural and occupational contexts, making it a versatile choice for research and practical applications (Bravata et al., 2020). Unlike shorter measures, CIPS captures a broader spectrum of impostor experiences, offering more nuanced insights into how individuals perceive their success and competence.

The CIPS consists of 20 statements rated on a five-point Likert scale (1 = not at all true, 2 = rarely, 3 = sometimes, 4 = often, and 5 = very true). The total score ranges from 20 to 100 and can be interpreted using four established classification categories (see Clance, 1985). Scores between 20 and 40 indicate few impostor characteristics, while scores from 41 to 60 reflect moderate impostor experiences. Scores between 61 and 80 suggest frequent impostor feelings, and scores from 81 to 100 signify intense and often debilitating impostor experiences. To better align with an academic setting, two original CIPS items were revised in the survey. Specifically, question 9 was changed from "Sometimes I feel or believe that my success in my life or my job has been the result of some kind of error" to "Sometimes I feel or believe that my success in my studies has been the result of some kind of error" (see Appendix A). Question 14 was revised from "I'm often afraid that I may fail at a new assignment or undertaking even though I generally do well at what I attempt" to "I'm often afraid that I may fail at a new assignment or undertaking even though I generally do well in my studies." In the present study, the internal consistency of the CIPS was excellent (Cronbach's $\alpha = 0.93$).

2.2.2 Family SES

In the survey, three variables were used to describe family SES: social class, parental education, and financial situation. We rescored the nine-graded education level of mother and father such that 1 = neither parent has an academic degree, 2 = the other parent has an academic degree, and 3 = both parents have an academic degree. The variable that describes the financial situation of the childhood family, which had five categories in the survey (from very poor to very wealthy), was based on the respon-

dent's assessment. This variable was also changed to three categories: very poor and poor, which receive a value of 1; moderate subsistence, which receives a value of 2; and wealthy and very wealthy, which receive a value of 3. Similarly, the respondents assessed the social class of their childhood family (upper-class, upper-middle-class, lower-middle-class, working-class, and other class/stratum). We excluded the last option from the new classification because it was difficult to score. This was also a relatively small group (1.9%, 53 cases). Due to the low percentage (0.6%) of students who labelled their families as upper class, we combined the first two categories. Thus, three categories remained: 1 = working-class, 2 = lower-middle-class, and 3 = upper-class or upper-middle-class.

2.2.3 Family culture and parenting practices

The survey included a section with 14 statements that describe family culture and parenting practices, developed specifically for this study to capture key dimensions of parental behaviour and the family environment relevant to our research questions. In addition, it contained a section with 15 statements that describe parents' attitudes towards education and studying. A four-point Likert scale (1 = strongly disagree, 2 = somewhat disagree, 3 = somewhat agree, and 4 = strongly agree) was used for both sections. For the PCA, missing values on the parenting items were replaced with item means. For all other analyses, cases with missing values were removed using listwise deletion. Moreover, we combined the sections and checked the normality of the distributions. We removed four statements ("We lived abroad as a family," "My mother believed that I would succeed in life," "My father believed that I would succeed in life," and "I ended up studying the same subject as one of my parents or close relatives") due to non-normal distributions. For the new combined variable, there were thus 25 statements (see Table 1).

A PCA with Promax rotation was conducted to examine the underlying structure of the parenting-related items. Four components were extracted, together explaining 59.1% of the total variance (32.6%, 12.1%, 8.8%, and 5.6%, respectively). This exceeds levels often considered sufficient for meaningful component extraction in PCA (e.g., Jolliffe & Cadima, 2016).

The first component, Encouragement, reflected parental support for self-development, independence, and intellectual curiosity. The second component, Cultural exposure, captured cultural and social capital within the family environment, including participation in cultural activities and engagement with societal issues. The third component, Maternal expectations, represented the mother's academic aspirations for the child, whereas the fourth component, Paternal expectations, reflected equivalent aspirations expressed by the father. All four scales demonstrated good internal consistency (Cronbach's $\alpha = 0.77–0.84$). Items with substantial cross-loadings were removed to ensure a clear component structure.

Table 1 presents the factor loadings, descriptive statistics, and reliability coefficients for the four components. These component scores were used in subsequent analyses addressing the research questions.

Table 1 Component loadings from the PCA with Cronbach's α, scale, mean (*M*), and standard deviation (*SD*) for each parenting component

Statements	Encouragement	Cultural exposure	Maternal expectations	Paternal expectations
I was encouraged to trust myself	**0.841**	0.018	−0.049	−0.063
I was encouraged to be curious	**0.820**	0.068	−0.011	−0.016
I was encouraged to be independent	**0.784**	−0.142	−0.103	0.022
I was encouraged to develop myself	**0.752**	0.037	0.105	0.054
I was encouraged to study foreign languages	**0.545**	0.123	0.190	0.018
We spent time among academically educated individuals.	0.035	**0.771**	−0.015	0.060
We engaged in so-called high culture (e.g., attended theatre, art exhibitions, or classical music concerts).	0.019	**0.756**	0.087	−0.158
Our family's social circle included influential people.	−0.086	**0.712**	−0.115	0.110
Newspapers were ordered to our home.	−0.067	**0.641**	−0.077	−0.001
We discussed current societal issues.	0.265	**0.573**	−0.104	0.047
We took trips abroad.	0.000	**0.541**	0.138	−0.021
My mother's views have had a significant impact on the educational choices I have made. It was important to my mother that I succeed in school.	0.030	-0.161	0.774	0.073
My mother encouraged me to set high goals for my studies	0.204	−0.138	**0.770**	0.039
My mother wanted me to obtain a higher education degree	−0.134	0.070	**0.740**	0.161
It was important to my father that I succeed in school	0.015	−0.070	−0.134	**0.947**
My father encouraged me to set high goals for my studies	0.165	−0.072	−0.038	**0.854**
My father wanted me to obtain a higher education degree	−0.146	0.099	0.201	**0.701**
My father's views have had a significant impact on the educational choices I have made	−0.091	0.173	0.138	**0.537**
Cronbach's α	0.84	0.77	0.80	0.81
Scale	1–4	1–4	1–4	1–4
M (SD)	3.11 (0.69)	2.41 (0.62)	2.74 (0.75)	2.66 (0.73)

The following statements loaded onto several components, so we removed them: "I was read to"; "I was encouraged to set high goals for myself"; "In my childhood family, university education was valued"; "Acquiring a university education was considered a given in my childhood family"; "Acquiring an academic education has been a self-evident matter for me since my youth"; and "Advice from my parents, relatives, and family acquaintances was very helpful when I was applying to university"

2.3 Statistical analyses

Analyses were conducted in a stepwise manner aligned with the research questions. First, principal component analysis (PCA) was used to identify the underlying structure of parenting practices. Sampling adequacy was confirmed by the Kaiser–Meyer–Olkin value (0.832), and Bartlett's test of sphericity was significant ($\chi^2 = 43{,}296.16$, $df = 171$, $p < .001$). Component scores derived from the PCA were used in subsequent analyses.

To address research question 1 (How do parenting practices differ across SES groups?), one-way ANOVAs with post hoc pairwise comparisons were performed. Tukey's test was used when variances were equal; otherwise, the Games–Howell was applied. When only two groups were compared, *t*-tests or Mann–Whitney *U* tests were used.

To address research question 2 (How do SES and parenting practices relate to IS?), SES differences in CIPS scores were examined using ANOVAs with post hoc tests. Pearson correlations were used to assess associations between parenting practices and IS. Finally, hierarchical linear regression models were estimated: Model 1 included SES indicators; Model 2 added parenting practices; Model 3 included gender and age as exploratory covariates. Changes in R^2 were tested using *F*-tests, and standardised beta coefficients were used to assess the relative contributions of predictors. Effect sizes are reported using conventional benchmarks (Cohen, 1988).

2.4 Data handling and software

The normality of distributions was examined before analyses using the Shapiro–Wilk test and graphically depicted with a histogram. Missing data were handled using listwise deletion when data were missing completely at random. In the PCA, missing values were replaced with the mean of the respective variables to minimise bias. Item–total correlations were analysed to ensure reliability, and Cronbach's alpha was calculated for each component. The dataset was analysed with Jamovi 2.3.28 for linear regression analysis, while IBM SPSS Statistics 29 was used for other statistical procedures.

3 Results

3.1 SES differences in parenting practices

To address research question 1, we examined whether parenting practices differed across three indicators of family SES: subjective social class, parental education, and childhood financial situation. Table 2 presents the means and standard deviations for each parenting component across SES groups.

Omnibus ANOVA tests indicated significant group differences for all parenting components across social class categories (Encouragement: $F(2, 1808) = 73.8$, $p < .001$, $\eta^2 = 0.08$; Cultural exposure: $F(2, 1808) = 485.1$, $p < .001$, $\eta^2 = 0.35$; Mater-

Table 2 Descriptive statistics of parenting components according to family SES (One-way ANOVA results of the post hoc test are shown below the table)

Variable		Encouragement	Cultural exposure	Maternal expectations	Paternal expectations
	n (%)	M (SD)	M (SD)	M (SD)	M (SD)
Social class	1811	***	***	***	***
Working-class[a]	390 (21.5)	2.93 (±0.71)	1.90 (±0.48)	2.49 (±0.77)	2.36 (±0.72)
Lower-middle-class[b]	751 (41.5)	3.19 (±0.61)	2.37 (±0.51)	2.77 (±0.69)	2.67 (±0.66)
Upper-/upper-middle-class[c]	670 (37.0)	3.39 (±0.53)	2.87 (±0.51)	3.03 (±0.66)	2.98 (±0.65)
Academic degree	1884	***	***	***	***
Neither parent[d]	1079 (67.3)	3.09 (±0.66)	2.20 (±0.55)	2.63 (±0.74)	2.52 (±0.71)
Other parent[e]	441 (23.4)	3.33 (±0.56)	2.65 (±0.51)	3.00 (±0.67)	2.91 (±0.64)
Both parents[f]	364 (19.3)	3.41 (±0.50)	2.97 (±0.49)	3.02 (±0.64)	3.02 (±0.60)
Finance	1942	***	***	***	***
Very poor/poor[g]	267 (13.7)	2.90 (±0.73)	1.83 (±0.48)	2.56 (±0.80)	2.39 (±0.72)
Moderate[h]	1000 (51.5)	3.17 (±0.62)	2.35 (±0.52)	2.73 (±0.71)	2.64 (±0.69)
Very wealthy/wealthy[i]	675 (34.8)	3.37 (±0.55)	2.82 (±0.54)	2.99 (±0.67)	2.95 (±0.65)

Social class: Encourage (Games–Howell) a vs. b***, a vs. c***, and b vs. c***; Culture (Tukey) a vs. b***, a vs. c***, and b vs. c***; Mat Expect (Games–Howell) a vs. b***, a vs. c***, and b vs. c***; Pat Expect (Tukey) a vs. b***, a vs. c***, and b vs. c***

Academic degree: Encourage (Games–Howell) d vs. e***, d vs. f***, and e vs. f**; Culture (Games–Howell) d vs. e***, d vs. f***, and e vs. f***; Mat Expect (Games–Howell) d vs. e*** and d vs. f***; Pat Expect (Games–Howell) d vs. e***, d vs. f***, and e vs. f*

Finance: Encourage (Games–Howell) g vs. h***, g vs. i***, and h vs. i***; Culture (Tukey) g vs. h***, g vs. i***, and h vs. i***; Mat Expect (Games–Howell) g vs. h**, g vs. i***, and h vs. i***; Pat Expect (Tukey) g vs. h***, g vs. i***, and h vs. i***

nal expectations: $F(2, 1808) = 74.7$, $p < .001$, $\eta^2 = 0.08$; Paternal expectations: $F(2, 1808) = 110.5$, $p < .001$, $\eta^2 = 0.11$).

Across all indicators, higher SES was consistently associated with more supportive and resource-rich parenting environments. Students from upper- and upper-middle-class families reported the highest levels of Encouragement, Cultural exposure, Maternal expectations, and Paternal expectations, whereas students from working-class families reported the lowest values. Post hoc comparisons confirmed that differences between all class groups were statistically significant.

A similar pattern was observed for parental education, with omnibus ANOVAs again showing significant differences between groups (Encouragement: $F(2, 1881) = 50.2$, $p < .001$, $\eta^2 = 0.05$; Cultural exposure: $F(2, 1881) = 334.5$, $p < .001$, $\eta^2 = 0.26$; Maternal expectations: $F(2, 1881) = 65.1$, $p < .001$, $\eta^2 = 0.07$; Paternal expectations: $F(2, 1881) = 107.6$, $p < .001$, $\eta^2 = 0.10$).

Childhood financial situation produced the largest SES gradients, as shown by significant omnibus ANOVAs (Encouragement: $F(2, 1939) = 58.6$, $p < .001$, $\eta^2 = 0.06$; Cultural exposure: $F(2, 1939) = 382.7$, $p < .001$, $\eta^2 = 0.28$; Maternal expectations: $F(2, 1939) = 43.7$, $p < .001$, $\eta^2 = 0.04$; Paternal expectations: $F(2, 1939) = 76.5$, $p < .001$, $\eta^2 = 0.07$).

Taken together, the results show that parenting practices vary systematically across SES groups, indicating that family resources—economic, educational, and cultural—shape the types of developmental support children receive.

3.2 SES, parenting practices and IS

To address research question 2, we examined the extent to which family SES and parenting practices were associated with IS. Analyses included group comparisons across SES categories, correlational analyses between parenting components and IS, and hierarchical regression models combining SES indicators, parenting practices, and demographic controls.

3.2.1 SES differences in IS

Impostor experiences varied systematically across SES indicators (Fig. 1). SES differences in CIPS scores were tested using one-way ANOVAs with appropriate post hoc tests; Welch's ANOVA and Games–Howell procedures were applied when assumptions of homogeneity were not met. Students from working-class families reported significantly higher IS scores than those from upper- or upper-middle-class backgrounds. Similar patterns were observed for parental education and financial situation, with the highest impostor scores found among students from the least affluent households. These results indicate that multiple dimensions of socioeconomic disadvantage are associated with heightened impostor feelings.

3.2.2 Parenting practices and IS

Correlation analyses indicated small but statistically significant negative associations between IS and both Encouragement and Cultural exposure. Maternal and paternal

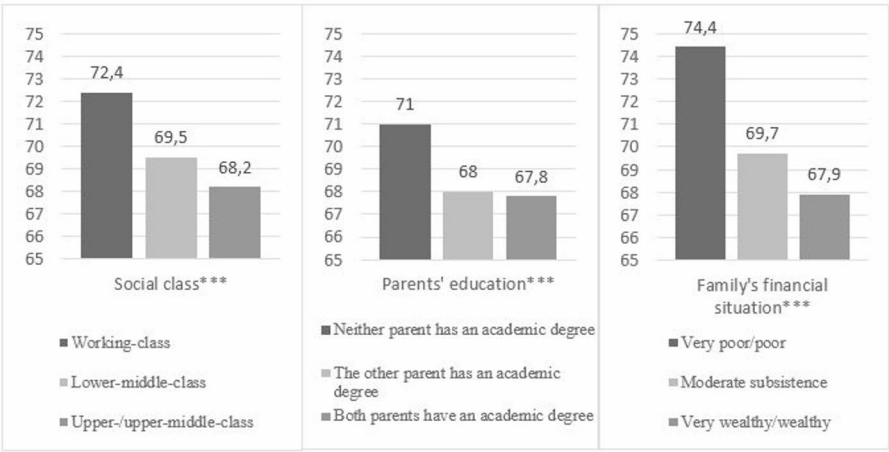

Fig. 1 CIPS scores by parents' social class, education, and financial situation. Family's social class: (Tukey) working class vs. upper/upper middle class***. Parents' education: (Games–Howell) neither vs. other** and neither vs. both**. Family's financial situation: (Tukey) very poor/poor vs. moderate***, very poor/poor vs. very wealthy/wealthy***, and moderate vs. very wealthy/wealthy*

Table 3 Pearson correlation matrix between CIPS and parenting practices

	CIPS	Encouragement	Cultural exposure	Maternal expectations	Paternal expectations
Correlation Matrix					
CIPS	—				
Encouragement	-0.108***	—			
Cultural exposure	-0.099***	0.479***	—		
Maternal expectations	0.016	0.353***	0.290***	—	
Paternal expectations	0.016	0.345***	0.357***	0.629***	—

*** $p < .001$

expectations showed no bivariate associations with IS. These results suggest that supportive and culturally enriched childhood environments may offer some protection against impostor feelings, although the effects are modest (Table 3).

3.2.3 Regression models predicting IS

To examine the combined contribution of SES and parenting practices to IS, three hierarchical regression models were estimated. Model 1 was statistically significant ($F(2, 1687) = 5.703$, $p = .003$). Of the SES variables, only childhood financial situation was significantly associated with IS, whereas social class and parental education were not significant predictors (both $p > .14$). Model 2, which added parenting practices, showed significant additional explanatory power relative to Model 1 ($\Delta R^2 = 0.013$, $p < .001$). Among the parenting variables, Encouragement ($F(1, 1683) = 12.31$, $p < .001$) and Paternal expectations ($F(1, 1683) = 5.62$, $p = .018$) significantly predicted IS, while Cultural exposure and Maternal expectations did not (both $p > .16$). Model 3, which included gender and age, provided a further improvement in fit (ΔR^2

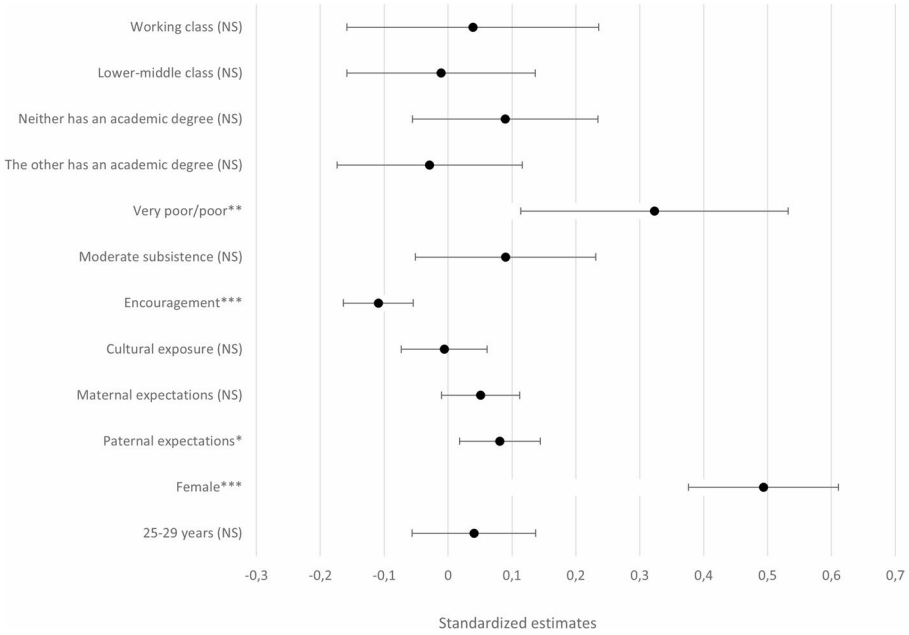

Fig. 2 Predictors of IS in Model 3 and standardised estimates with 95% confidence interval

= 0.038, $p < .001$). Gender had a strong effect ($F(1, 1681) = 68.01$, $p < .001$), whereas age was not a significant predictor ($F(1, 1681) = 0.68$, $p = .411$).

Overall, Model 1 explained 2.1% of the variance, Model 2 explained 3.4%, and Model 3 explained 7.2% of the variance. Although statistically significant, the predictors accounted for only a modest proportion of the variance. In the final model, gender was the strongest predictor, followed by childhood financial situation; parental encouragement remained a small protective factor, while paternal expectations showed a weak positive association with IS. Figure 2 presents the standardised coefficients and 95% confidence intervals from Model 3. A full regression table for Model 3 is provided in Appendix B (Table B1).

4 Discussion

This study explored the relationship between family background and IS among academically successful Finnish university students, with a particular focus on the role of family SES and parenting practices. The findings show that differences in family environments are linked to students' experiences of impostor feelings.

4.1 Parenting practices and SES

The results indicate clear SES-related patterns in parenting practices, echoing studies that show how students from working-class backgrounds face unique challenges in academic environments. High-SES parents provided greater encouragement, cul-

tural exposure, and higher educational expectations, aligning with previous research suggesting that students from middle- and upper-middle-class families often receive forms of parental support that can buffer against self-doubt (Lehmann, 2014; Montes, 2024; Reay et al., 2009).

In contrast, students from working-class families reported lower levels of encouragement and cultural engagement, consistent with research showing that these students often experience heightened self-doubt and feelings of alienation in academic settings (Lehmann, 2014). The findings also underscore the importance of parental education and financial resources in shaping parenting behaviours, with both factors linked to higher levels of support. This aligns with Canning et al. (2020), who observed that first-generation students are particularly susceptible to IS because their families lack experience navigating HE environments.

The study also showed that students from high-SES backgrounds were more likely to grow up in environments where HE was explicitly valued and supported. This aligns with a broader body of literature suggesting that cultural and intellectual exposure within the family is a significant determinant of academic success and self-confidence (Bourdieu, 1986). In contrast, students from lower SES backgrounds were more likely to encounter environments in which HE was not emphasised, a factor that may heighten self-doubt and contribute to greater vulnerability to IS (Li, 2024).

4.2 Family background and IS

A key finding of this study was that students from lower-income and working-class backgrounds experienced higher levels of IS compared to their peers from upper- and upper-middle-class families. This finding aligns with previous research that suggests that individuals from lower socioeconomic backgrounds often experience greater difficulty in navigating academic institutions, which are typically structured around middle- and upper-class norms (e.g. Canning et al., 2020). The misalignment between a student's habitus and the dominant academic culture (see Bourdieu, 1986) can result in heightened self-doubt, reinforcing impostor feelings.

Regression analysis showed that among the SES indicators, only financial status uniquely predicted IS intensity. Parental education and social class did not make independent contributions in the multivariate model. This finding suggests that economic insecurity, rather than broader social classifications, may have a somewhat more direct impact on students' self-perception. Students from financially disadvantaged backgrounds reported the highest CIPS scores ($M = 74.4$), whereas those from wealthier families had significantly lower scores ($M = 67.9$). The stress associated with financial hardship may contribute to feelings of self-doubt and anxiety, even in a tuition-free education system such as Finland's. This aligns with findings by Jensen et al. (2021), who demonstrated that high family income can buffer the negative effects of mental health disorders on upper secondary school completion. Similarly, our findings suggest that economic security plays a crucial role in shaping students' academic self-perception and reducing their susceptibility to IS, reinforcing the argument that financial stability fosters resilience in educational settings.

4.3 The protective role of parental encouragement

Parental encouragement emerged as a statistically significant—although modest—protective factor against IS. Students who reported higher levels of encouragement experienced lower IS scores regardless of SES background. This result is consistent with prior work showing that supportive caregiver messages strengthen students' academic self-concept and resilience (Sørensen et al., 2022; Want & Kleitman, 2006; Yaffe, 2023). Although our study cannot identify the specific mechanisms involved, one possible interpretation is that encouraging parental communication contributes to a more positive sense of academic competence, whereas demanding or critical expectations may heighten vulnerability to self-doubt. This interpretation is consistent with Nori and Vanttaja's (2023) qualitative findings among Finnish doctoral students, who reported that childhood messages shaped later IS feelings. However, we acknowledge that our cross-sectional design cannot verify such developmental pathways.

Interestingly, paternal expectations—but not maternal expectations—were positively associated with IS. However, this association emerged only in the regression model and was not present at the bivariate level, indicating that it was weak and dependent on the multivariate context. Although the effect size was small and should be interpreted cautiously, this pattern echoes research linking high parental pressure to perfectionism, a known antecedent of IS (Egan et al., 2011; Yaffe, 2023). These findings likely reflect the existence of multiple routes through which parental messages are internalised, rather than a single explanatory mechanism. Given the cross-sectional nature of the data, it is also possible that students' current self-conceptions influence how they retrospectively interpret parental expectations.

4.4 Gender differences in IS

Consistent with previous research (see Bravata et al., 2020), female students in this study reported significantly higher CIPS scores than their male counterparts. This gender disparity may be attributed to societal expectations and gendered stereotypes that contribute to women's self-doubt, particularly in competitive academic environments (Avolio et al., 2024). Women may experience additional scrutiny and pressure to prove their competence, exacerbating impostor feelings (Lawson, 2021). Furthermore, cultural narratives surrounding femininity and academic success may shape inner speech patterns that reinforce self-doubt among female students.

4.5 Theoretical and practical implications

The findings of this study provide empirical support for Bourdieusian interpretations of educational inequality. Students from disadvantaged backgrounds may experience a cleft habitus, feeling misaligned with academic institutions that implicitly privilege middle- and upper-class norms. This structural mismatch can intensify impostor feelings and perpetuate social inequalities within higher education.

Vygotsky's theory of inner speech complements this macro-level view by providing a way to understand how early social interactions—particularly parental messages—may shape students' evaluative self-talk. Although our study does not directly

measure inner speech, the theoretical alignment between these perspectives provides a useful foundation for interpreting the observed associations.

From a practical perspective, the results underscore the need for universities to adopt holistic strategies to address impostor feelings, particularly among students from lower socioeconomic backgrounds. Institutions should prioritise financial and academic support structures, such as scholarships, mentoring programs, and accessible psychological services. In addition, efforts to engage and educate parents about the importance of balanced encouragement and realistic expectations may help reduce the development of impostor-related cognitions. Such initiatives can contribute to fostering a more equitable and inclusive academic environment.

4.6 Limitations and future research

While this study offers valuable insights, several limitations must be noted. First, although Vygotsky's theory of inner speech is used as a conceptual lens, the study does not empirically measure inner speech or related cognitive processes. Any references to internalised evaluative dialogue should therefore be understood as theoretical interpretation rather than evidence of underlying mechanisms.

Second, because SES, parenting practices, and impostor feelings were measured concurrently, the data do not allow for testing developmental pathways or causal relations. This precludes the use of mediation or structural equation models in any meaningful way, as such analyses would rest on unverified assumptions. Future research should employ longitudinal or multi-method designs to examine how family background shapes impostor feelings over time and to identify potential mechanisms. Expanding research to diverse cultural contexts would further strengthen generalisability.

Third, the sample was self-selected and not representative of the wider student population. Women were overrepresented, which may introduce gender-related bias. Additionally, the retrospective nature of the parenting items raises the possibility of recall bias, as some early-life experiences may be forgotten or reconstructed.

Finally, as research on IS has relied heavily on quantitative approaches, qualitative studies are needed to explore the lived experiences and developmental trajectories that lead some individuals to doubt their abilities and perceive themselves as impostors.

5 Conclusion

This study highlights how family SES and parenting practices are associated with university students' experiences of IS. The findings underscore the relevance of supportive family environments, as parental encouragement was linked to lower IS levels across SES groups. They also point to the particular vulnerability of students facing financial disadvantage, which showed a unique association with higher IS in the multivariate model. In addition, a modest positive association was observed between paternal expectations and IS, suggesting that certain forms of parental pressure may be linked to heightened impostor feelings.

Although the regression effect sizes were small, this is typical in large-scale survey research on sociocultural influences, and the patterns identified here still offer

meaningful insights into the complexity of IS. Addressing impostor feelings in higher education requires a multifaceted approach that considers both individual psychological factors and broader structural and sociocultural conditions, ensuring that all students can thrive in HE environments.

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Declarations

Competing interests The authors have no competing interests to declare that are relevant to the content of this article.

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