

Beyond the mind: Understanding the influence of mental health on youth NEET status in Europe—A systematic literature review

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Abstract

Introduction: In the fields of labor market and education research, there is a vast interest in mental health factors affecting unsuccessful school-to-work transitions, dropout from school and labor market disconnections for young people. Young people who are not in employment, education or training are conceived of as NEET.

Aim: To get an overview we conducted a systematic review of the present literature on the influence of mental health on the likelihood of becoming NEET in Europe.

Method: A Systematic literature search was conducted in four databases on February 21, 2023, with an update on January 15, 2024.

Results: 33,314 articles were screened whereas 41 studies involving 8,914,123 individuals were included. Poor mental health such as attention deficit hyperactive disorder, autism, depression, borderline, and psychosis during childhood and adolescence is strongly associated with becoming NEET.

Conclusion: Mental health issues, whether mild or severe, heighten significant the risk of adverse education and employment outcomes in early adulthood, extending to young individuals with personality disorders, borderline personality disorder, and psychoses. These observations inform early intervention strategies for children and young people grappling with mental health challenges. Timely treatment is essential. Future research should focus on the gap in research like specific disorders such as eating disorders and anxiety.

KEYWORDS

dropout, education, NEET, psychological risk factors, systematic review, unemployment

1 | INTRODUCTION

In the European societies, and across the Organization for Economic Cooperation and Development (OECD) countries, there is an increasing concern about young people who are disconnected from the educational system and the labor market. The term “NEETs” refers to young people aged 15–29 years who are Not engaged in Education, Employment, or Training (OECD, 2024). In 2015, the number of NEETs in OECD countries was approximately 40 million (OECD, 2016). Among them, over two-thirds, equivalent to 28 million young people across the OECD, were not actively seeking employment and thus classified as “inactive” (OECD, 2016). Politically, the NEET group constitutes a problem for policymakers, because cash transfers for this group strains the public budget and the absence of work-related income entails fewer income tax payments from this group (Carcillo et al., 2015). Importantly, the negative consequences of employment are not only financial for individuals and public budgets; they also entail adverse social and health-related effects for the individuals affected. The adverse effects of unemployment impact the well-being, health, and even the generalized social trust (Azzollini, 2023; Howley & Knight, 2022; Krug & Eberl, 2018; Moustieri et al., 2018). There is a significant need to launch initiatives ensuring children

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and young adults successfully complete their education and transition into the labor market. Tong et al. (2023) demonstrated in their review that mental disorder and school dropout are closely associated. To prevent the risk of NEET an early intervention is needed as demonstrated in a review by Gariépy et al. (2022). A review from Rahmani et al. finds that education and family-related factors have a very important influence on the NEET group (Rahmani et al., 2024). As demonstrated there is awareness of the relation between young people with mental health issues and NEET. Regarding the many policymakers focusing on how to reduce the number of young people in the NEET group, there is a need for a comprehensive overview of which mental health factors affect the risk of NEET.

This leads to the aim of this systematic literature review: Existing studies documenting psychological risk factors associated with young Europeans aged 15–29 years becoming NEET. This review will provide an overview of factors associated with NEET and, not least, contribute with recommendations for decision-makers.

2 | METHODS

The structure of this article adhered to the PRISMA-ScR Checklist, as delineated by Tricco et al. (2018). The results of this article will be included in a comprehensive report comprising four systematic literature reviews, delving into the psychological, physical, geographical, and social factors influencing the completion of education or entry into the labor market among young individuals, thus leading to their inclusion in the NEET group. Based on our preliminary search, which revealed numerous studies encompassing various risk factors, we included all psychological, physical, geographical, and social factors influencing educational attainment and labor market entry. After conducting this search, we meticulously screened for data on psychological risk factors to ensure comprehensive coverage and that no relevant studies were overlooked. The foundation of these reviews is rooted in an exhaustive literature search, elaborated below.

2.1 | Eligibility criteria

To establish precise inclusion criteria for this systematic literature review, the PCC (participants, concept, and context) approach was applied (Pollock et al., 2023). Inclusion criteria encompassed studies including young individuals aged 15–29 years classified as NEET according to Eurostat's definition (OECD, 2016). The NEET concept included young people not currently employed and who had never entered the workforce after completing compulsory education. This included individuals who had not commenced secondary school within the preceding 4 weeks or had not completed secondary school and were not working or undergoing training. Data collection for the study had to occur after 1980 in one of the 43 European countries following Eurostat's definition (OECD, 2024). We exclusively included primary studies reporting quantitative data, with mixed methods studies requiring distinct quantitative data. Articles in the language of English, German, Danish, Norwegian, and Swedish were considered, while experimental studies were excluded to concentrate on naturally occurring risk factors.

2.2 | Information sources and search strategy

Systematic searches were conducted in Medline, Embase, PsycINFO, and Scopus on February 21, 2023, with an update on January 15, 2024. The search consisted of two aspects, the population, and the outcome. The population was young people (and synonyms) and the outcome was the NEET group (and synonyms). No additional limitations were made as the goal was to find all risk factors for becoming NEET. The search terms were combined with the Boolean operators AND or OR (Grewal et al., 2016). Various search techniques, including proximity operators, controlled vocabulary thesaurus terms (e.g., medical subject headings [MeSH]), and a free-text search of all synonyms and variations of the keyword, were employed. Additionally, searches were supplemented with forward citation searches in Citationchaser (Haddaway et al., 2021). A specialist medical librarian outside the author group peer-reviewed the search strategies. The search strategies from all databases are illustrated in Appendix S1.

2.3 | Selection process and data extracting

The selection process was divided into two rounds. Initially, all authors independently screened studies based on title and abstract in Covidence®, excluding studies not conducted in a European country. The first round required only one author to make an exclusion decision. Subsequently, authors independently screened records in Covidence® according to the inclusion criteria. The second round required two authors to decide whether studies should be included or excluded based on the title

and abstract. Disagreements in the screening process were discussed and resolved through consensus among all authors. Authors VL and DM collaborated on full-text screening, with disagreements resolved by consensus within the author group. Given that our preliminary search indicated numerous studies encompassing various risk factors, we conducted a thorough search and meticulously screened all articles for relevant psychological risk factor data. Information about author(s), year of publication, title, aim(s) of the study, participants (number, age, and nationality), study design, and main findings were extracted from studies and charted. We used an inductive methodology to categorize the findings based on the specific mental health issues under examination. In cases where multiple studies addressed the same mental health concern, we condensed and presented the results collectively in the results section. (Pollock et al., 2023).

3 | RESULTS

The authors rigorously searched the literature using the prescribed methods to identify relevant articles. Initially, 51,126 studies were identified through the search strategy. Following duplicate removal, 33,314 studies underwent individual screening based on title and abstract, leading to 32,655 being deemed irrelevant. Subsequently, 659 studies underwent full-text screening, with 434 being excluded. Three studies could not be retrieved. Consequently, 222 studies were deemed suitable, and 33 studies were included from the original search. An additional eight studies were unearthed in the updated search (Figure 1).

As illustrated in Table 1 the present literature review comprised 41 articles investigating the correlations between mental health and the risk of youth being NEET. These studies involved a substantial collective cohort of 8,914,123 participants, and in addition one study that included the entire population born between 1975 and 2015.

Denmark contributed with nine studies (Andersen et al., 2021; Christiansen et al., 2015; Christian Hakulinen, Musliner, et al., 2019; Hastrup et al., 2022; Hegelund et al., 2020; Hjorth et al., 2016; Jensen et al., 2020; Karsberg et al., 2023; Toft et al., 2021). Sweden supplied with eight studies (Amin et al., 2019; Andersén et al., 2018; Arvidsson et al., 2015; Chen et al., 2024; Helgesson et al., 2018, 2023; Liu et al., 2023; Spangenberg et al., 2023). Each of the following contributed with seven studies; Finland (Bask & Salmela-aro, 2013; Hakulinen, Musliner, et al., 2019; Heikkala et al., 2020; Holttinen et al., 2023; Mikkonen et al., 2018; Ringbom, Suvisaari, Kääriälä, et al., 2023; Ringbom, Suvisaari, Sourander, et al., 2023) and Norway (Bania et al., 2019; Halmøy et al., 2009; Hetlevik et al., 2018, 2023; Homlong et al., 2013; M. R. Jensen et al., 2023; Strøm et al., 2023). The UK furnished six studies (Goldman-Mellor et al., 2016; Hale & Viner, 2018; Holmes et al., 2021; Riglin et al., 2014; Tayfur et al., 2022; Wu et al., 2022), and the last ones contributed one study each; The Netherlands (Groot et al., 2021), Belgium (Huegaerts et al., 2020), Scotland (Fleming et al., 2017), and Switzerland (Baggio et al., 2015). More than half of these studies were conducted after 2020 (23 in total), 17 was published between 2010 and 2020, and only one was from 2009. All studies followed a cohort design, except from three cross-sectional studies (Halmøy et al., 2009; Hetlevik et al., 2023; Toft et al., 2021) and one case-control study (Hastrup et al., 2022).

Five studies identified an association between (ADHD) and the risk of being NEET (Fleming et al., 2017; Hakulinen, Musliner, et al., 2019; Halmøy et al., 2009; Helgesson et al., 2023; Riglin et al., 2023). Fleming et al document that even young people who receive medication for ADHD are significantly worse off compared to their peers without ADHD, both in terms of NEET status and their overall health condition (Fleming et al., 2017). Helgesson et al demonstrated that young people with ADHD and comorbidity have a higher risk of getting a disability pension (Helgesson et al., 2023). Moreover, Halmøy et al revealed that early recognition and treatment of ADHD were strong predictors of employment among young individuals with ADHD (Halmøy et al., 2009).

In relation to autism the study by Toft et al. (2021) documented that a diagnosis of autism was not related to completion of ninth grade, but an autism diagnose before the age of 12 years was associated with a lower prevalence of attaining education beyond ninth grade and obtaining employment by age 25 year. In contrast to this Ringbom et al found a strong correlation between autism and the risk of dropping out of school (Ringbom, Suvisaari, Sourander, et al., 2023).

The study from Askeland et al demonstrated a small association between depression and depression, and the group of adolescents with depression and conduct disorder were in high risk of dropping out (Askeland et al., 2022). The study by Tayfur et al. demonstrated that school-based interventions during secondary education focusing on psychosocial factors, particularly physical activity could be helpful in this regard (Tayfur et al., 2022). Depression in one's mid-20s significantly increases the risk of marginalization at age 29 years, and comorbid mental health conditions reinforce this association (Hetlevik et al., 2023).

Social phobia (Amin et al., 2019), and borderline (Hastrup et al., 2022) were associated with increased risk of dropout or unemployment, and familial factors seem to explain the association with unemployment.

Moreover, young people with more severe psychiatric disorders like schizophrenia or personality disorder were at a very increased risk of dropping out of upper secondary school or being unemployed (C. Hakulinen, Musliner, et al., 2019; Holttinen et al., 2023; Liu et al., 2023; Ringbom, Suvisaari, Sourander, et al., 2023; Spangenberg et al., 2023). Those at highest

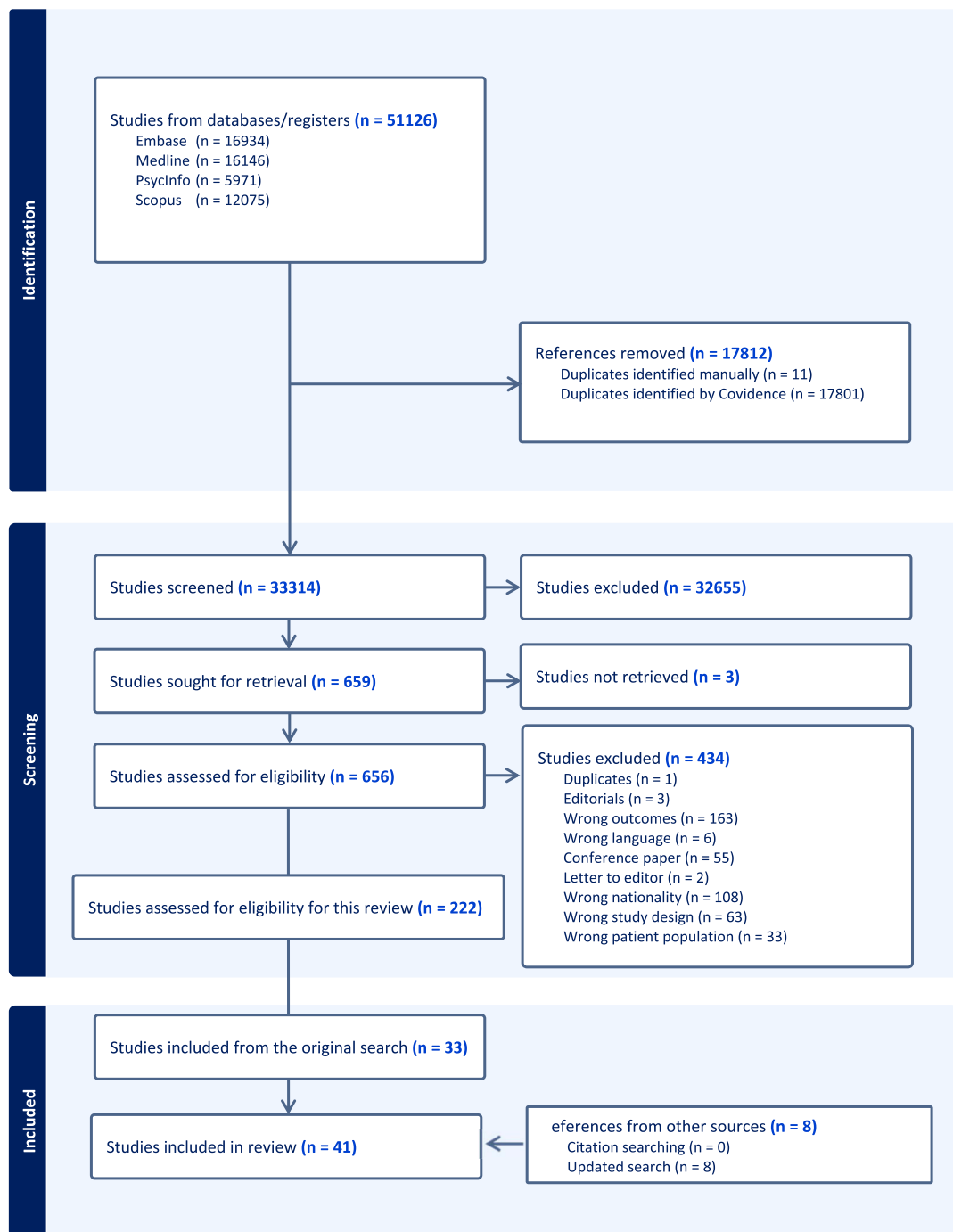


FIGURE 1 Flow diagram of the screening process.

risk were males diagnosed with organic schizophrenia, intellectual disabilities and developmental, and externalizing disorders (Holtinen et al., 2023).

Across the studies, it was consistently observed that young people with common mental disorders like, for example, emotionally challenged, depression, or anxiety were more likely to fail to complete upper secondary education and to lack employment opportunities (Andersén et al., 2018; Arvidsson et al., 2015; Bania et al., 2019; J. Chen et al., 2024; de Groot et al., 2021; Hale & Viner, 2018; Helgesson et al., 2018; Hetlevik et al., 2018; Hjorth et al., 2016; Holmes et al., 2021; Huegaerts et al., 2020; Jensen et al., 2023; Mikkonen et al., 2018). The results from this study suggest a strong focus on early assessment and that self-efficacy should be addressed in the vocational rehabilitation of young adults with disabilities to support their transition and integration into the labor market (Andersén et al., 2018; J. Chen et al., 2024). Low educational level,

TABLE 1 Summary of study details and population (sorted after publication year).

Author(s), year	Title	Aim(s) of the study	Participants; number, age, and nationality	Study design	Main findings
Chen et al. (2024)	Association of medication clusters and subsequent labor market marginalization in refugee and Swedish-born young adults with common mental disorders in Sweden	Identify clusters of individuals with similar psychotropic medication patterns; and examine the relationship between cluster membership with labor market marginalization (LMM) in refugee and Swedish-born young adults with common mental disorders (CMD)	11,018 adolescents and 1454 refugees aged 18–24 with common mental disorders - Sweden	Cohort	Young refugees with CMD experience more frequent periods of unemployment during the follow-up than the Swedish-born youth
Hetlevik et al. (2023)	Young adults with depression: A registry-based longitudinal study of work-life marginalization. The Norwegian GP-DEP study	Explore the association between a depression diagnosis in young adulthood and risk of marginalization at age 29 years, among those who had completed upper secondary school and those who had not completed at age 21	111,558 people from age 22–29 years - Norway	Cohort	For people who had not completed upper secondary school at age 21 years, a depression diagnosis at age 22–26 increased the risk of prolonged unemployment benefit at age 29 compared with those with no depression. Among those who had completed upper secondary school at age 21 years, depression increased the risk of prolonged unemployment benefit compared with those with no depression
Holtinen et al. (2023)	Educational attainment of adolescents treated in psychiatric inpatient care: A register study over 3 decades	Are those admitted to psychiatric hospital during adolescents at risk for not acquiring education beyond compulsory comprehensive school?	14,435 adolescents with mental disorders - Finland	Cohort	Only 50% had completed any post-comprehensive education compared to 84.9% in the same aged general population. Those at higher risk were males, schizophrenia or intellectual or developmental disabilities
Jensen et al. (2023)	Adolescent mental health disorders and upper secondary school completion - The role of family resources	Investigate the relationship between adolescent mental health disorders and completion of upper secondary school	53,187 adolescents. Age 21 years - Norway	Cohort	Adolescents with the mental disorders: internalizing and externalizing disorders and substance use disorders were less likely to complete upper secondary school compared to peers without mental disorders
Karsberg et al. (2023)	Do adverse experiences predict unemployment and need of psychiatric help after treatment for drug use disorders?	Association between adverse experiences (physical abuse, sexual abuse and parental substance use problems), not being employed, in education or training (NEET) and being in need of acute psychiatric help among patients receiving treatment for substance use disorders	580 adolescents and early adults aged 15–25 years enrolled in treatment for drug use disorders - Denmark	Cohort	More than half of the participants in treatment for drug use disorder were NEET 2 years after treatment enrollment

TABLE 1 (Continued)

Author(s), year	Title	Aim(s) of the study	Participants; number, age, and nationality	Study design	Main findings
Liu et al. (2023)	Educational outcomes in children and adolescents with type 1 diabetes and psychiatric disorders	Investigate educational outcomes in children and adolescents with type 1 Diabetes with and without psychiatric disorders	2,454,862 individuals born between 1973 and 1997 - Sweden	Cohort	Individuals with both type 1 diabetes and psychiatric disorders had much lower odds of completing upper secondary high school
Riglin et al. (2023)	Investigating young-adult social outcomes of attention deficit hyperactivity disorder	Associations between broadly defined child-limited and persistent ADHD with social outcomes (e.g., employment)	6439 adolescents aged 25 years - UK	Cohort	Persistent ADHD was associated with an increased likelihood of being not in education, employment, or training
Ringbom, Suvisaari, Kääriälä, et al. (2023)	Psychotic disorders in adolescence and later long-term exclusion from education and employment	Assess labor market outcomes for people diagnosed with psychotic disorders in adolescence	288 people who had been diagnosed with psychotic disorders during 2004–2007, when they were 16–20-year-old, and 55,883 who had not. Data were collected at age 20–28 - Finland	Cohort	NEET for more than 5 years affected 2.2% of those without psychosis, 35.8% of those with any nonaffective psychotic disorder, and 57.0% of those with schizophrenia or schizoaffective disorders. Family-related risk factors were weaker predictors of long-term NEET in subjects with psychotic disorders than other cohort members. Having a psychotic disorder plus long-term NEET was associated with not applying for upper secondary education and not finishing upper secondary education
Ringbom, Suvisaari, Sourander, et al. (2023)	Temporal changes in the associations between diagnosed psychiatric disorders and dropping out of school early	Investigate risk markers for long-term NEET among people who had been diagnosed with a psychotic disorder in adolescence and the general population	25,421 participants born in 1987 and 32,025 born in 1997 - Finland	Cohort	Having any psychiatric diagnosis at 10–16 of age was associated with dropping out of school early in both cohorts. The highest proportions were in the subgroup with autism spectrum disorders
Spangenberg et al. (2023)	A long-term follow-up study of labor market marginalization in psychiatric patients with and without personality disorder	Study labor market marginalization (LMM) and receipt of social welfare benefits during 13 years from age 18 to 25 years in a sample of former psychiatric patients with and without personality disorder (PD)	186 former psychiatric patients who were assessed in 2002–2004, including for PD, and compared them with controls. Follow-up was made 2003–2016 - Sweden	Cohort	Former psychiatric patients had more days of unemployment, sick leave absence, and disability pensioning and received more social welfare benefits than controls during the study period
Strøm et al. (2023)	Terror leaves adolescents behind: Identifying risk and protective factors for high-school completion among survivors of terrorism	Whether exposure to the 2011 Utøya terrorist attack in Norway impacted survivors' ability to complete high school	265 survivors of the Utøya terrorist attack. Age 13–18 years at the time of the attack. - Norway	Cohort	Symptoms of depression were associated with higher odds of failure to graduate from upper secondary school within 5 years

(Continues)

TABLE 1 (Continued)

Author(s), year	Title	Aim(s) of the study	Participants; number, age, and nationality	Study design	Main findings
Hastrup et al. (2022)	Welfare consequences of early-onset Borderline Personality Disorder: a nationwide register-based case-control study	Estimate the educational and employment outcome and healthcare costs of patients with early-onset Borderline Personality Disorder (BPD) compared with matched controls	171 (90.1% female, median age 17 years) diagnosed BPD and 677 (90.4% female, median age 17 years) not diagnosed with BPD - Denmark	Case-control	Patients with BPD reached a significantly lower educational level and employment status compared with the controls. When adjusting for the parents' educational level, patients with BPD were nearly 22 times more likely to be unemployed, and nearly 15 times more likely to be on disability pension than controls Early onset of BPD was associated with lower educational and vocational outcome and increased healthcare costs as early as at the age of 20 years
Tayfur et al. (2022)	Associations between adolescent psychosocial factors and disengagement from education and employment in young adulthood among individuals with common mental health problems	Investigated longitudinal associations between adolescent psychosocial factors (e.g., self-esteem, aspirations, bullying, physical activity) and later NEET status among individuals with common mental health problems (i.e., depression and anxiety)	2,224 participants which 1473 were 15 years and 751 were 16 years. 66.8% were females - UK	Cohort	Lower self-esteem, external locus of control, low/no physical activity, and no job aspirations in adolescence were associated with an increased likelihood of being in NEET status as young adults whereas positive attitudes toward school and not being bullied were associated with a decreased likelihood for being in this status
Wu et al. (2022)	Not in education, employment, and training: Pathways from toddler difficult temperament	Investigates if (1) difficult temperament in toddlerhood associates with NEET status in adulthood and (2) different subdomains of ADHD in late childhood and antisocial behaviors in adolescence partially explain this pathway	6240 participants NEET status at age 18, 20, 22, and 23 - UK	Cohort	Higher level of difficult temperament is associated with an increased probability of being NEET in adulthood
Andersen et al. (2021)	Mental health groups in high school students and later school dropout: a latent class and register-based follow-up analysis of the Danish National Youth Study	To identify mental health groups of high school students using both positive and negative aspects of mental health	60,612 high school students. 61.8% were females. Mean age was 18.0 ± 1.7 years for males and 17.8 ± 1.1 years for females - Denmark	Cohort	Students who are languishing, emotionally challenged or moderate mentally healthy have about 1.5-fold to threefold higher risk of dropping out of high school compared with flourishing students
de Groot et al. (2021)	Does the timing and duration of mental health problems during childhood and adolescence matter for labor market participation of young adults?	Whether and how the timing and duration of mental health problems (MHP) on young adults' labor market participation	141 participants in the age of 26 years. 60.3% were females - Netherlands	Cohort	The results show the long-term impact of MHP. Especially young adults with a long duration of MHP show an increased risk of having no paid job, while young adults with an early onset and a short duration of MHP are not affected

TABLE 1 (Continued)

Author(s), year	Title	Aim(s) of the study	Participants; number, age, and nationality	Study design	Main findings
Helgeson et al. (2023)	Labor market marginalization in young adults diagnosed with attention-deficit hyperactivity disorder (ADHD): a population-based longitudinal cohort study in Sweden	Examine whether ADHD longitudinally predict school dropout	9718 participants aged 19–29 years and diagnosed with ADHD - Sweden	Cohort	Young adults with ADHD had a 10-fold higher risk of disability pension, a nearly three-fold higher risk of long-term sickness absence and a 70% higher risk of long-term unemployment compared to the matched compared to siblings not diagnosed with ADHD
Holmes et al. (2021)	What accounts for the changes in the chances of being NEET in the UK?	Which characteristics are associated with a higher chance of being NEET and how the importance of these drivers has changed over time	Young people between the age of 16 and 29 born between 1975 and 2015 - UK	Cohort	Mental ill health stands out as having a very large effect on the risk of being NEET
Toft et al. (2021)	Assessment of educational attainment and employment among individuals with autism spectrum disorder in Denmark	To evaluate educational attainment and employment among individuals with and without a diagnosis of autism spectrum disorder (ASD) before age 12 years	810 individuals diagnosed autism spectrum disorder and 8100 individuals without ASD - Denmark	Cross-sectional	At age 25 years, individuals with autism spectrum disorder had a lower prevalence of educational attainment beyond ninth grade and lower employment compared with those without autism spectrum disorder
Hegelund et al. (2020)	The modifying influence of family social background on the association between IQ and unsuccessful educational and occupational achievement. A register-based study of 277,938 men in Denmark 1981–2016	Investigated whether family social background modified the association between intelligence and unsuccessful educational and occupational achievement	277,938 men in the age of 25 and 30 years - Denmark	Cohort	Family social background modified the associations of IQ with risk of no youth education at age 25 and gross income at age 30
Heikkala et al. (2020)	Accumulated unhealthy behaviors and psychosocial problems in adolescence are associated with labor market exclusion in early adulthood – A northern Finland birth cohort 1986 study	Explored whether adolescents accumulated unhealthy behaviors and psychosocial problems are associated with later labor market exclusion	6692 adolescents aged 15/16 years and with follow-up at 25 and 29 years - Finland	Cohort	Groups of adolescents with unhealthy behaviors and psychosocial problems were at a significantly higher risk of future exclusion from the labor market
Huegaerts et al. (2020)	Is mental health a predictor for a smooth school-to-work-transition? A 20-month follow-up study of brussels youth	Investigate if mental health status of young urban labor market entrants affects their tractor from education to employment	540 youth (53% female) in the transition from education to employment at 18–29 year; and with follow-up data of 20 months between 2015 and 2017 - Belgium	Cohort	Men with significant poorer mental status experienced more often “delayed employment” than those with no poor mental status

(Continues)

TABLE 1 (Continued)

Author(s), year	Title	Aim(s) of the study	Participants; number, age, and nationality	Study design	Main findings
Jensen et al. (2020)	Psychological resources in adolescence and the association with labor market participation in early adulthood: a prospective cohort study	Investigate the association between psychological resources in adolescents and labor market participation in early adulthood, and whether the associations differed by gender	2982 in the age of 25–29 years - Denmark	Cohort	Associations are indicated between a high level of sense of coherence or mastery in adolescence and high labor market participation in early adulthood. Psychological resources seemed to play a bigger role for females in early adolescence compared to males, for whom a larger impact was seen in late adolescence
Amin et al. (2019)	Associations between adolescents social phobia, sickness absence and unemployment: a prospective study of twins in Sweden	Associations between an onset of serious mental disorders before the age of 25 with subsequent employment, income, and education outcomes	2845 twins were followed at age 8/9, 13/14, 16/17 and 19/20 years - Sweden	Cohort	Social phobia in adolescence was associated with unemployment and sickness absence (SA) in young adulthood. Factors shared by family members (i.e., genetics and shared childhood environment) seemed to play a role in the association between social phobia and unemployment
Bania et al. (2019)	Not engaged in education, employment, or training (NEET) in an Arctic sociocultural context: the NAAHS cohort study	Explore the prevalence and predictors of not engaged in education, employment, or training (NEET) status in a multicultural young adult population	5877 youth aged 15–16 years (83% of the total age cohort from all 87 municipalities participated). The follow-up studies consisted of 3,987 consent giving adolescents (68%), were 365 (9.2%) reported indigenous Sami ethnicity - Norway	Cohort	Among female adolescent peer problems and hyperactivity problems were associated with later NEET status. Peer problems, conduct problems and musculoskeletal problems in male adolescents were associated with later NEET status, whereas emotional problems among males predicted significantly less late NEET status
Hakulinen, Musliner, et al. (2019)	Bipolar disorder and depression in early adulthood and long-term employment, income, and educational attainment: A nationwide cohort study of 2,390,127 individuals	Estimate the associations between bipolar disorder and depression in early adulthood and subsequent employment, income, and educational attainment	2,390,127 born between 1955–1990, - Denmark	Cohort	Severe mood disorders with onset before age 25, particularly bipolar disorder, are associated with persistent poor socioeconomic outcomes across the entire work-life course
Hakulinen, Elovainio, et al. (2019)	Mental disorders and long-term labor market outcomes: nationwide cohort study of 2,055,720 individuals	Association between an onset of serious mental disorders before the age of 25 with subsequent employment, income and education outcomes	2,055,720 (48.8% female) born 1988–2015, who were alive at the end of the year they turned 25 - Finland	Cohort	Serious mental disorders are significant associated with higher rates of not being employed and not having any secondary or higher education
Andersén et al. (2018)	The relationship between self-efficacy and transition to work or studies in young adults with disabilities	Investigate perceived self-efficacy in unemployed young adults with disabilities, and the association between self-efficacy and transition to work or studies	133 women (53%) and 116 Swedish men (47%); the mean age was 24 years - Sweden	Cohort	A lower level of self-efficacy among mentally disabled young was associated with decreased odds for 'transition to work'

TABLE 1 (Continued)

Author(s), year	Title	Aim(s) of the study	Participants; number, age, and nationality	Study design	Main findings
Hale and Viner (2018)	How adolescent health influences education and employment: investigating longitudinal associations and mechanisms	Associations between health in early adolescence and subsequent academic and employment outcomes, exploring potential mediators of these relationships to inform intervention strategies	15,770 adolescents approximately 13 years old ($n = 15,770$) to 2011 and 8682 respondents aged 19 years - UK	Cohort	Adolescent health is a significant predictor of subsequent academic success and employment in young adulthood after accounting for childhood academic performance. Mental health was significantly associated with both poorer later General Certificate of Secondary Education (GCSE) outcomes and higher risk of NEET status, while long term condition predicted poorer GCSE attainments but not NEET status. Associations were similar for both sexes, and the size of associations was largely similar for all outcomes
Helgeson et al. (2018)	Trajectories of work disability and unemployment among young adults with common mental disorders	Describe trajectories of labor-market marginalization (LMM) (both work disability and unemployment) among young adults with and without common mental disorders (CMD), and to elucidate the characteristics associated with these trajectories	7245 19–30 years with an incident diagnosis of a common mental disorder (CMD) in year 2007 and a matched comparison group of 7245 individuals without mental disorders during the years 2004–2007 - Sweden	Cohort	A large share, nearly 50% of young adults with CMDs, substantially higher than in the comparison group of individuals without mental disorders, display increasing or high persistent levels of either work disability or unemployment throughout the follow-up period
Hetlevik et al. (2018)	GP-diagnosed internalizing and externalizing problems and dropout from secondary school: a cross-sectional study	Examine the risk for not finishing secondary education by age 20 when mental health problems were diagnosed during general practitioner (GP) consultations	63,970 inhabitants born in 1991 that were assigned to a GP in 2011 - Norway	Cross-sectional	Both internalizing and externalizing mental health problems are associated with dropout from upper secondary education
Mikkonen et al. (2018)	The population impact of childhood health conditions on dropout from upper-secondary education	To estimate the risk of dropout across various mental health conditions	101,284 adolescents born in 1988–1995 followed for school dropout at ages 17 and 21 - Finland	Cohort	More than one fifth of educational dropout is attributable to childhood health conditions. At each of the examined ages and for both sexes, dropout was more common among youth with any childhood health condition, a somatic condition, a mental disorder, or an injury. Within the group of mental disorders, psychosis presented the largest risk at both ages, and the other individual conditions also showed strong associations, except for eating disorders at age 21 years Whereas at age 21 years the RRs related to a mental disorder were larger for girls than for boys

(Continues)

TABLE 1 (Continued)

Author(s), year	Title	Aim(s) of the study	Participants; number, age, and nationality	Study design	Main findings
Fleming et al. (2017)	Educational and health outcomes of children treated for attention-deficit/hyperactivity disorder	Compare the education and health outcomes of schoolchildren treated for attention-deficit/hyperactivity disorder (ADHD) with their peers	766,244 children attending primary, secondary, and special schools at any point between September 21, 2009, and September 18, 2013. 7413 were treated for ADHD - Scotland	Cohort	Even while receiving medication, children with ADHD fare worse than their peers across a wide range of outcomes relating not only to education but also to health
Goldman-Mellor et al. (2016)	Committed to work but vulnerable: self-perceptions and mental health in NEET 18-years olds from a contemporary British cohort	Compared four types of work-related self-perceptions, as well as vulnerability to mental health and substance abuse problems, among youths not in education, employment or training (NEET) and among their peers	2232 twins born in 1994–1995 - UK	Cohort	Nearly 60% of NEET youths had experienced ≥1 mental health problem in their childhood
Hjorth et al. (2016)	Mental health and school dropout across educational levels and genders: a 4.8-year follow-up study	Examine associations between poor mental health and dropout among students. Special attention was paid to potential gender differences and educational levels	3,146 inhabitants aged 16–29 years - Denmark	Cohort	Poor mental health was associated to dropout in vocational and higher education For males in higher education, poor mental health was a predictor of dropout which was not seen females in higher education
Arvidsson et al. (2015)	Post-school options for young adults with intellectual disabilities in Sweden	Examine life after school for young adults with intellectual disabilities	12,269 individuals who graduated from Special Secondary School between 2001 and 2011. 41.8% were female - Sweden	Cohort	24% of the sample were not in disability programs, not employed, did not attend any education, and were not engaged in any public labor market programs or registered as jobseekers
Baggio et al. (2015)	Not in education, employment, or training status among young Swiss men: longitudinal association with mental health and substance use	Examine if NEET youth differ from other contemporaries in terms of personality, mental health, and substance use and to provide longitudinal examination of NEET status, testing its stability and prospective pathways with mental health and substance use	4758 young people in the age of 17.9–27.8-year-old - Switzerland	Cohort	Comparisons between NEET and non-NEET youth showed significant differences in substance use and depressive symptoms only. Longitudinal associations showed that previous mental health, cannabis use, and daily smoking increased the likelihood of being NEET. Reverse causal paths were nonsignificant
Christiansen et al. (2015)	Youth, suicide attempts and low level of education: A Danish historical register-based cohort study of the outcome of suicide attempt	Analyse the association between suicide attempt and subsequently finishing a secondary education in Danish youth and to analyse whether the association between suicide attempts and secondary education is exclusively mediated by mental illness	355,725 young and 257,234 completed upper secondary education. 5,036 young people had a least one suicide attempt - Denmark	Cohort	Suicide attempt made in the age span 16–20 years is a strong indicator for not finishing secondary education

TABLE 1 (Continued)

Author(s), year	Title	Aim(s) of the study	Participants; number, age, and nationality	Study design	Main findings
Bask and Salmela-aro (2013)	Burned out to drop out: Exploring the relationship between school burnout and school dropout	Examine the development of school burnout, specifically with regard to the following three components: a cynical attitude toward the school, feelings of inadequacy as a student, and exhaustion at school	878 pupils in ninth grade in 2004. Follow-up at the ages of 16, 17, 18 and 21 years - Finland	Cohort	Those with a high level of cynicism were clearly more susceptible to dropout than those with a low level
Homlong et al. (2013)	Can use of healthcare services among 15–16-year-olds predict an increased level of high school dropout? A longitudinal community study	Associations between healthcare seeking in 15–16-year-olds and high school dropout 5 years later	13,964 10th grade secondary school students - Norway	Cohort	Adolescents who were referred to the mental health service had a higher dropout rate
Halmøy et al. (2009)	Occupational outcome in adult ADHD: Impact of symptom profile, comorbid psychiatric problems, and treatment	Compare the education and health outcomes of schoolchildren treated for ADHD with their peers	414 adults aged 18–24 years and diagnosed with ADHD (47.8% female) and 357 comparison group participants (58.8% female) - Norway	Cross-sectional	24% of the patients reported being in work, compared to 79% in a population-based control group Early recognition and treatment of ADHD is a strong predictor of being in work as an adult, independently of comorbidity, substance abuse, and current treatment

comorbidity with other mental disorders and living in rural areas increases the risk for NEET in youths with common mental disorders (Helgesson et al., 2018).

Additionally, two studies indicated that individuals with mental health problems in childhood or a history of mental health issues were at risk for becoming NEET (Baggio et al., 2015; Goldman-Mellor et al., 2016).

Furthermore, personality traits such as difficult temperament (Wu et al., 2022), lower IQ (Hegelund et al., 2020), high levels of cynicism (Bask & Salmela-aaro, 2013) low self-efficacy among individuals with mental disabilities (Andersén et al., 2018), low psychological resources (Jensen et al., 2020), and psychosocial problems (Heikkala et al., 2020) were linked to dropout or unemployment.

Even users of mental health services were studied and found to have an increased risk of dropout among those who sought help at a mental health service (Homlong et al., 2013). Uncommon conditions such as survivors after terrorism (Strøm et al., 2023) or individuals who had attempted suicide (Christiansen et al., 2015) had as well an increased risk of dropout or unemployment.

4 | DISCUSSION

The objective of this review was to explore whether psychological disorders and mental health issues are related to an increasing risk of becoming NEET as a young adult aged 15–29 years. Our main finding is that prior and existing psychological disorders and ill mental health is strongly related to becoming NEET, including dropping out of secondary school.

According to the present review ADHD significantly increase the risk of adverse employment and educational outcomes. Research indicates that even with medication, children with ADHD experience poorer educational and health outcomes compared to their peers without ADHD (Fleming et al., 2017). The findings of this review are supported by another study which revealed that students who receive medication for ADHD experience a higher level in school performance within a mere 3-month period (Jangmo et al., 2019). Our review highlights the importance of early recognition and treatment of ADHD as a strong predictor of adult employment. A Spanish study underscores the significance of teachers being knowledgeable about mental disorders, revealing that 80% of teachers lack specific education on the topic (Granada-López et al., 2023). Moreover, girls with ADHD often face more challenging outcomes compared to their male counterparts, highlighting the importance of paying attention to girls with ADHD, even if they may not exhibit hyperactivity to the same extent (Bania et al., 2019).

Studies regarding autism spectrum disorder are not as conclusive regarding the increased risk of NEET. A qualitative study interviewing young people who dropped out of high school underscores the crucial need for proactive support and the creation of more accessible environments within schools (Cage & Howes, 2020). Another study has documented that school refusal tends to manifest at an earlier age in children with autism compared to those without, emphasizing the critical need for early intervention (Ochi et al., 2020).

The present review emphasizes the connection between depression and the likelihood of school dropout or unemployment. Adolescent depression may stem from various factors, including genetics and social influences (Malhotra & Sahoo, 2018). Moreover, research illustrates a reciprocal relationship between depressive symptoms and academic performance (Verboom et al., 2014). While depression has multifaceted origins, it's crucial to acknowledge that maternal depression medication can impact young children, as evidenced in a study by Kragholm et al. (2018). Early recognition and treatment of depression are widely recognized as crucial for the risk of NEET, yet a 2021 review highlights the absence of widespread dissemination and implementation of school-based depression prevention strategies (Bodicherla et al., 2021).

Andersen et al. have found that students experiencing common mental disorders, such as languishing, emotional challenges, or moderate mental health issues, face a heightened risk of school dropout compared to flourishing students. This risk is especially prominent among first-year students. Consequently, they suggest that implementing mental health interventions may prove to be a promising strategy (Andersen et al., 2021). A Canadian study has documented that experiencing suboptimal mental health at baseline serves as a risk factor for developing high levels of anxiety and depressive symptoms later in life. This highlights the potential effectiveness of assessing mental health as a means of predicting symptoms of mental disorders and underscores the importance of implementing interventions to promote mental well-being (Doré et al., 2020).

This review highlights the association between a diagnosis of psychosis in adolescence and NEET status. A Finnish intervention study involving 1163 young adults diagnosed with severe psychiatric disease revealed that 34% had engaged in psychotherapeutic interventions, a pattern linked to female gender, higher education levels, attachment to employment, and absence of substance abuse (Mattila-Holappa et al., 2018). The study also revealed an unmet need for psychotherapeutic interventions among men, those with lower socioeconomic status, and those with poor attachment to the labor market. Individuals with substance abuse issues are largely excluded from these interventions (Mattila-Holappa et al., 2018). It is imperative to provide vocational rehabilitation to young people with psychosis to prevent them from becoming NEET.

This review revealed that lower self-esteem, an external locus of control, lack of physical activity, and absence of job aspirations during adolescence were correlated with a higher likelihood of being in NEET status. Tayfur et al. (2022)

conclude that preventing mental health problems should prioritize addressing psychosocial factors. They suggest that school-based interventions during secondary education, with a focus on psychosocial factors, especially physical activity, could be beneficial in the regard of support the adolescents in the transitioning to education and work (Tayfur et al., 2022).

The studies underscore the necessity of enhancing early diagnosis of mental illness to provide children and young people with optimal developmental conditions. This proactive approach not only supports academic completion but also ensures favorable conditions for transitioning into the labor market. In addition, it is noteworthy that there is a significant gap in research examining various mental disorders influence on the risk of becoming NEET such as eating disorders, obsessive-compulsive disorders, or anxiety and fear disorders.

4.1 | Limitations

Despite being informed by the most recent research on the subject, our comprehensive review of the literature on psychological risk factors for obtaining NEET status in young adulthood has some limitations. Firstly, even though we screened 33,314 studies in a systematic way and used forward citation searches, there is always a minor risk of missing relevant studies. Despite the sheer volume of studies screened, we strongly believe the risk of missing studies is rather small, thereby not affecting our conclusions. A second limitation of our study is the heterogeneity of outcomes. Some of the studies focus on unemployment, some on NEET status, and some education dropout. It is not entirely clear if all variables on psychological issues affect all outcomes, or to which extent. This leads us to our third limitation, which is that our study does not produce an estimate of effect sizes. A strength of the current review lies in its updated and detailed insights into mental health factors affecting NEET individuals in Europe, rendering the gathered knowledge directly applicable within the European context.

5 | CONCLUSION

In conclusion, it's clear that mental health conditions such as ADHD, autism, depression, and diagnoses like borderline personality disorder or psychosis are closely linked to the risk of NEET.

Policymakers should have a particular focus on the following:

- Young people with ADHD are at high risk of becoming NEET. There should be a particular focus on early intervention for this group, even if they are well-medicated for ADHD. Adolescents with ADHD and comorbidity have an increased risk of NEET.
- There is no clear consensus on whether autism is associated with NEET, though some studies highlight the importance of early intervention, especially for children showing early signs of autism.
- Adolescents with severe mental diseases like schizophrenia are in very high risk of becoming NEET and an even greater effort in psychiatric treatment is needed.
- In generally there is a pressing need to focus on early diagnosis and treatment, ensure understanding of signs and reactions to mental illness.

Prioritizing mental health in schools is paramount, and both governments and educational institutions should implement early intervention programs at all levels. Further research should be directed towards evaluating the effectiveness of interventions aimed at reducing NEET rates among those with mental health challenges.

Future research should further focus on unexplored mental health disorders such as anxiety, eating disorders, and personality disorders.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions. The search strategies from all databases are shown in the Supplementary file.

ETHICS STATEMENT

The present study (review) did not fulfill the criteria and thus did not require formal approval from the ethical board.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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