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J Child Psychol Psychiatry. 2016 February ; 57(2): 196–203. doi:10.1111/jcpp.12459.**Committed to work but vulnerable: Self-perceptions and mental health in NEET 18-year-olds from a contemporary British cohort****Sidra Goldman-Mellor^{*1,2}, Avshalom Caspi^{3,4,5}, Louise Arseneault⁵, Nifemi Ajala⁵, Antony Ambler⁵, Andrea Danese^{5,6,7}, Helen Fisher⁵, Abigail Hucker⁵, Candice Odgers⁸, Teresa Williams⁹, Chloe Wong⁵, and Terrie E. Moffitt^{3,4,5}**

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Abstract

Background—Labour market disengagement among youths has lasting negative economic and social consequences, yet is poorly understood. We 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.

Methods—Participants were from the Environmental Risk (E-Risk) longitudinal study, a nationally representative U.K. cohort of 2,232 twins born in 1994–95. We measured commitment to work, job-search effort, professional/technical skills, “soft” skills (e.g., teamwork, decision-making, communication), optimism about getting ahead, and mental health and substance-use disorders at age 18. We also examined childhood mental health.

Results—At age 18, 11.6% of participants were NEET. NEET participants reported themselves as committed to work and searching for jobs with greater diligence than their non-NEET peers. However, they reported fewer “soft” skills ($B = -0.98, p < .001$) and felt less optimistic about their likelihood of getting ahead in life ($B = -2.41, p < .001$). NEET youths also had higher rates of concurrent mental health and substance-abuse problems, but these did not explain the relationship with work-related self-perceptions. Nearly 60% of NEET (vs. 35% of non-NEET)

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ACCESS TO DATA

SGM (corresponding author) confirms that she had full access to all the data in the study, and takes responsibility for the integrity of the data and the accuracy of the data analysis.

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youths had already experienced 1 mental health problem in childhood/adolescence. Associations of NEET status with concurrent mental health problems were independent of pre-existing mental health vulnerability.

Conclusions—Our findings indicate that while NEET is clearly an economic and mental health issue, it does not appear to be a motivation issue. Alongside skills, work-related self-perceptions and mental-health problems may be targets for intervention and service provision among this high-risk population.

INTRODUCTION

The current generation of young people faces the worst labour market prospects in decades (Eurofound, 2012; Shierholz, Sabadish, & Wething, 2012). The legacy of the Great Recession, as well as longer-term structural changes to the global economy, have disproportionately affected young people (Eurofound, 2012; Shierholz et al., 2012). Disengagement from the labour market in young adulthood is particularly concerning because it may lead to long-term negative economic consequences for the individual (e.g., wage “scarring;” Gregg & Tominey, 2005) as well as social problems such as criminal offending (Carmichael & Ward, 2001). The effects of youth unemployment also inflict large economic costs on society (ACEVO Commission on Youth Unemployment, 2012). Research is needed to help governments minimize youth labour market disengagement (Eurofound, 2012).

In the U.K. and Europe, social research and policymaking around youth unemployment has focused on a particular subset of young people: Those who, in the transition out of compulsory schooling, find themselves not in education, employment, or training (NEET) (Social Exclusion Unit, 1999). We report data from interviews conducted in 2012–2014 with a population-representative 1994–95 birth cohort of over 2000 British young people transitioning out of compulsory schooling and into early adulthood. An examination of how NEET youths appraise their own economic abilities and prospects is currently lacking. Societies tend to view NEET youth in a largely negative light, but little is known about how these young people see themselves. Understanding their self-perceived economic potential may clarify what factors present the best targets for intervention and support among NEET youth, as well as for the larger population of young people who are trying to find their path forward in life.

The transition to young adulthood also coincides with the age of peak prevalence of psychiatric disorder, and young people on the margins of society are known to be at risk for mental ill-health (Baggio et al., 2015; Benjet et al., 2012; Bynner & Parsons, 2002; Patel, Flisher, Hetrick, & McGorry, 2007; Veldman, Reijneveld, Almansa Ortiz, Verhulst, & Bultmann, 2015; Waghorn, Chant, Lloyd, & Harris, 2011). It is thus crucial to understand whether NEET youths experience more than their share of mental health problems and substance abuse, and whether knowledge of their mental health histories can inform the services provided to them during this vulnerable period.

Here we investigated how NEET status is related to self-reported commitment to work, job-search behaviour, skills, and economic optimism. We also tested the hypothesis that NEET

youth would have elevated rates of mental health and substance abuse difficulties. Our aim was not to establish the causal direction of any link between NEET status and mental health (which likely affect each other reciprocally). Rather, we think that the descriptive data here provide valuable, and otherwise scarce, insight into the lives of these young people, helping provide a needed evidence base for service provision and policymaking.

METHODS

Study cohort

Participants were members of the Environmental Risk (E-Risk) study, which tracks the development of a birth cohort of 2,232 British children. The sample was drawn from a register of twins born in England and Wales in 1994–95 (Trouton, Spinath, & Plomin, 2002). Full details about the sample are reported elsewhere (Moffitt, 2002). Briefly, the sample was constructed in 1999–2000, when 1116 families with 5-year-old twins participated in home-visit assessments. The sample includes 55% monozygotic and 45% dizygotic same-sex twin pairs (49% are male). Families were recruited to represent the U.K. population of families with newborns in the 1990s, on the basis of residential location throughout England and Wales and mother's age. Teenaged mothers were over-selected to replace high-risk families selectively lost to the register through non-response. Older mothers having twins via assisted reproduction were under-selected to avoid an excess of well-educated older mothers. Participants gave written informed consent after a complete description of the study. Ethical approval was granted by the Joint South London and Maudsley and the Institute of Psychiatry NHS Ethics Committee (U.K.).

At follow up, the study sample represents the full range of socioeconomic conditions in the U.K., as reflected in the families' distribution on a neighbourhood-level socioeconomic index (ACORN [A Classification of Residential Neighbourhoods], developed by CACI Inc. for commercial use in Great Britain)(Odgers et al., 2012). ACORN uses census and other survey-based geodemographic discriminators to classify enumeration districts (~150 households) into socioeconomic groups ranging from "wealthy achievers" (Category 1) with high incomes, large single-family houses, and access to many amenities, to "hard pressed" neighbourhoods (Category 5) dominated by government-subsidized housing estates, low incomes, high unemployment, and single parents. ACORN classifications were geocoded to match the location of each E-Risk study family's home. E-Risk families' ACORN distribution closely matches that of households nation-wide: 25.9% of E-Risk families live in "wealthy achiever" neighbourhoods compared to 25.3% nation-wide; 5.3% vs. 11.6% live in "urban prosperity" neighbourhoods; 29.4% vs. 26.9% live in "comfortably off" neighbourhoods; 13.5% vs. 13.9% live in "moderate means" neighbourhoods; and 26.0% vs. 20.7% live in "hard-pressed" neighbourhoods. E-Risk underrepresents "Urban Prosperity" because such households are significantly more likely to be childless.

Follow-up home visits took place when study participants were aged 7 (98% participation), 10 (96%), 12 (96%), and, most recently in 2012–2014, at 18 years (93%). At the time of data collection, age 18 is when most young people in the U.K. would have completed compulsory schooling and attained legal adulthood. At age 18, E-Risk participants who did not participate in the study did not differ from those who did on initial age-5 measures of

family socioeconomic status (SES) ($\chi^2 = 0.86, p = 0.65$), IQ scores ($t = 0.98, p = 0.33$), or internalizing or externalizing behaviour problems ($t = 0.40, p = 0.69$ and $t = 0.41, p = 0.68$, respectively). Home visits at ages 5, 7, 10, and 12 years included assessments with participants and primary caretakers; the visit at age 18 included interviews only with participants. Each twin was assessed by a different interviewer.

Not in Education, Employment, or Training (NEET)

At the time of their age-18 interview, participants were classified as NEET if they reported that they were neither studying, nor working in paid employment, nor pursuing a vocational qualification or apprenticeship training. Participants were queried to ensure that NEET status was not simply a function of being on summer holiday, or of being a parent. Employment- and education-related queries were from the Longitudinal Study of Young People in England (LSYPE). This operationalization of NEET status follows that used by the U.K. Office of National Statistics and the International Labor Organization (Office for National Statistics, 2013).

Work-related self-perceptions

At age 18, we interviewed participants about their attitudes to work (e.g., “Having a job means more to me than just the money,” “I would get bored without a job”) and their job-search efforts. We also interviewed participants about their skill sets; specifically, whether they possessed professional/technical skills (e.g., computer programming, sales skills, construction skills) and “soft” skills (behavioural competencies such as teamwork, decision-making, communication, and leadership). Finally, we asked the participants about their future likelihood of getting ahead in life (e.g., “If I work hard, I will get ahead”, “As I get older, things will get better”). Each work-related self-perception measure was a score derived from summing the participant’s responses to the individual sub-queries. Measures are described in more detail in Supplemental Table 1.

Mental health and substance problems

Mental health and substance problems at age 18—Participants were evaluated at the age-18 interview for the presence of depressive disorder, generalized anxiety disorder, alcohol dependence, cannabis dependence, and conduct disorder (at least moderate) over the previous 12 months according to *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) criteria. For the generalized anxiety disorder diagnosis, we did not require the six-month symptom duration criterion because of the youth of our study sample. Assessments were conducted in face-to-face interviews using the Diagnostic Interview Schedule (Robins, Cottler, Bucholz, & Compton, 1995). The assessment of conduct disorder was conducted as part of a computer-assisted module.

Mental health and substance problems in childhood/adolescence—We considered attention-deficit/hyperactivity disorder (ADHD) or conduct disorder to be present if the child had met criteria for these disorders at any of the age-5, -7, -10 and -12 E-Risk assessments, because these disorders onset and become common during this childhood age period. As previously described (e.g., Polanczyk et al., 2010), at each assessment age, ADHD and conduct disorder were ascertained on the basis of teacher and mother reports of

symptoms according to DSM-IV. Symptoms were reported for the preceding 6 months. Symptom endorsement was based on teachers' responses to a rating scale of symptoms in a mailed questionnaire, and, for parental reports, on their responses in a face-to-face standardized interview.

By age 12, the children had grown old enough to ascertain depression, anxiety, and substance use, which tend to onset and become common as children enter adolescence. Children were interviewed with the 10-item Multidimensional Anxiety Scale for Children (MASC; March, Parker, Sullivan, Stallings, & Conners, 1997) and the Children's Depression Inventory (CDI; Kovacs, 1992). Children scoring at or above the 95th centile on the MASC (score ≥ 13) were categorized as having clinically significant anxiety (Fisher et al., 2012). Based on validation studies, a total score of ≥ 20 on the CDI was used to identify children with clinical depression (Danese et al., 2011; Kovacs, 1992a). Children were considered to engage in harmful substance use if they reported that they had tried drinking alcohol or smoking cigarettes on more than two occasions, or had tried cannabis, taken pills to get high, or sniffed glue/gas on at least one occasion.

Lastly, we assessed childhood/adolescent suicidal behavior using measures from the age-12 and age-18 phases of the study. At age 12, participants' mothers were asked whether each child had ever deliberately harmed him/herself or attempted suicide in the previous six months (Fisher et al., 2012). (We asked only mothers to report at this age because of ethical considerations.) Mothers' descriptions of the event were later coded by an independent rater. At the age-18 interview, participants were interviewed about suicide attempts occurring between ages 12 and 18, using a life calendar. We used a 5-year reporting period for this behaviour because suicide attempt is a rare event. Interviewers differentiated between suicide attempts and nonsuicidal self-harm; for this analysis we focus on incidents accompanied by self-reported intent to die. The age-12 and age-18 reports were combined into one dichotomous variable indicating whether the participant had engaged in any suicidal behavior between ages 12 and 18.

Childhood covariates

All analyses controlled for participants' childhood socioeconomic context. Family socioeconomic status was defined using a standardized composite of parents' income, education and social class ascertained at childhood phases of the study, which loaded significantly onto one latent factor (Trzesniewski et al., 2006). Neighbourhood-level socioeconomic index was defined using the ACORN classification as described above.

A clinical question is whether work-related self-perceptions and concurrent mental health problems continue to be associated with NEET status once measures of early-life ability are taken into account. For these analyses, we additionally controlled for participants' childhood intelligence and reading skill. Intelligence was individually tested at age 5 using a short form of the Wechsler Preschool and Primary Scale of Intelligence-Revised (WPPSI-R; Wechsler, 1990) comprising Vocabulary and Block Design subtests. IQs were prorated (i.e., the full-scale IQ score was estimated from two subscales) following procedures described by Sattler (1992, pp. 998–1004). Reading skill was individually tested at age 10 using the Test of Word Reading Efficiency (TOWRE; Torgesen, Wagner, & Rashotte, 1999), which measures

children's ability to recognise whole words, to pronounce them quickly and accurately, and to sound out unfamiliar words (Trzesniewski et al., 2006). Raw scores were standardized and grouped into ranked categories following procedures described by Torgesen et al. (1999).

Statistical analysis

First, we tested whether NEET study participants showed differences in work-related self-perceptions at age 18 compared to their non-NEET peers, using ordinary least-squares regression models with robust standard errors. Second, we tested whether NEET participants were more likely than their peers to have concurrent mental health problems at age 18. Following the recommended approach (Cummings, 2009), these sets of models used modified Poisson regression models with robust standard errors to estimate NEET youths' risk ratios for poor mental health. All models controlled for participants' sociodemographic characteristics (sex, family socioeconomic status, and neighbourhood socioeconomic context (ACORN classification)), childhood IQ, and childhood reading skill. Next, we evaluated whether NEET youths were more likely than their peers to have had mental health and substance use problems in childhood/adolescence, using logistic regression models to estimate odds ratios and adjusting for participants' sociodemographic characteristics. Analyses were conducted in Stata (v12.1, StataCorp LP) and accounted for non-independence of the clustered twin observations using the Huber/White variance estimator (Williams, 2000).

RESULTS

At age 18, approximately one in nine E-Risk study participants (11.6%, $n=239$) were neither studying nor working, and were classified as NEET (Table 1; see Supplemental Table 2 for additional descriptive data on participants' education and work activities at age 18). NEET youths were significantly more likely than their non-NEET peers to come from families of low socioeconomic status and poor neighbourhoods (Table 1), as previously established (Eurofound, 2012). Nevertheless, in keeping with other surveys, approximately one-third of NEET youths were from non-disadvantaged backgrounds (Department for Education, 2011). Of the 1044 twin pairs seen at age 18, 98% had information on NEET status for both twins. Risk for being NEET was shared by monozygotic twins (tetrachoric $r = 0.76$, 95% CI = 0.65–0.87) and dizygotic twins ($r = 0.62$, 95% CI = 0.47–0.76), suggesting that NEET status was strongly influenced by family-wide environmental risk factors and not under strong genetic influence.

Do NEET youth exhibit poorer work-related self-perceptions?

At age 18, NEET E-Risk participants largely viewed themselves as committed to work, and reported searching for jobs with more diligence than their non-NEET peers (Table 2, Model A). However, although NEET youth were engaged in looking for work, they appeared less prepared than their non-NEET peers to succeed in the labour force. NEET youths reported having fewer "soft" skills (such as problem-solving, leadership, and time management) compared to non-NEET youths. Moreover, NEET youths were much more pessimistic than their non-NEET peers when reflecting upon their future likelihood of getting ahead in life.

We next examined whether these associations were attributable to NEET youths' concurrent mental health problems, which could bias their perceptions of their own abilities. Table 2, Model B shows that after controlling for number of psychiatric diagnoses at age 18, NEET participants continued to report greater job-search activity, fewer professional/technical and "soft" skills, and greater pessimism about their economic futures.

Do NEET youth have worse mental health?

Eighteen-year-old NEETs had higher rates of all concurrent diagnosed psychiatric and substance disorders compared to their peers, and they were significantly more likely to smoke (Table 3, Model A). This "snapshot in time" suggests that NEET youths are, on average, burdened to an excess degree by mental health and substance-use problems.

In addition to concurrent mental health problems, we observed that NEET youth also tended to have had mental health problems earlier in life, prior to confronting the difficult transition into the labour force. Table 4 shows that 18-year-old NEET participants were, as children, more likely than their peers to have exhibited high levels of depression and to have been diagnosed with ADHD or conduct disorder. They were also more likely to have engaged in substance use and self-harm behavior as young adolescents. These associations persisted after controlling for confounding sociodemographic variables. In total, more than half of NEET youths had already experienced a serious mental health problem by early adolescence (Figure 1).

We further examined whether the associations between NEET status and age-18 mental health problems were entirely attributable to pre-existing mental health vulnerabilities. Table 3, Model B shows that while the associations between NEET status and age-18 mental health problems were slightly reduced in magnitude after controlling for childhood mental-health problems, they remained large and statistically significant in nearly all cases. These results suggest that even after accounting for prior vulnerability to poor mental health, as well as for childhood social class and ability (powerful predictors of both early mental health problems and educational success), NEET youths were at high risk for serious disorder.

Sex differences

We evaluated sex differences by using interaction terms to assess whether the associations in Tables 2–4 varied between male and female E-Risk study members. Sex-specific results were very similar. The exception was diagnosis of generalized anxiety disorder at age 18: Only male NEET youths were at significantly higher risk for this mental health problem ($RR_{adj} = 3.11, p = .002$), although the association for female NEET youths trended towards significance ($RR_{adj}: 1.65, p = .083$).

DISCUSSION

This study suggests that the majority of contemporary 18-year-old NEET youths are endeavoring to find jobs and are committed to the idea of work. However, they feel hampered by their low skill levels and are discouraged about their future economic prospects. Compared to their peers, NEET youths are also contending with substantial

mental health problems, including depression, anxiety, substance abuse, and aggression control. Many of these youths already exhibited such mental health problems in childhood, years before attempting to transition into the labour market. However, childhood psychological vulnerabilities do not fully explain the concurrent association between NEET status and poor mental health; nor do concurrent mental health problems explain the association between NEET status and work-related self-perceptions. Group differences in social class, IQ and reading ability also did not account for NEET youths' worse self-perceptions and mental health. This glimpse into the lives of NEETs indicates that while NEET is clearly an economic and mental health issue, it does not appear to be a motivational issue.

Methodological strengths of our study include its use of a representative birth cohort with good retention, prospective measures of mental health beginning early in life, and a comprehensive interview assessment of young people's attitudes about work and their own economic abilities. Our study is relevant for current unemployment-related policy efforts, as these youths are part of the "lost generation" struggling to enter the labour force during the worst economic climate in decades.

There are limitations to our study. Our analysis was restricted to 18-year-olds, a subset of the larger NEET population. We could not examine whether the associations between NEET status, self-perceived economic prospects, and mental health are similar among previous cohorts of young people. Our sample comprised twins, and whether their experience of NEET matches that of singletons is unknown. However, the NEET rate among our twins (11.6%) is similar to the official 12.5% rate reported by the U.K. Department for Education (Department for Education, 2013), and base rates of mental health problems in twins are very similar to population prevalence estimates (Kendler, Martin, Heath, & Eaves, 1995). Our findings are also consistent with earlier work showing that NEET youths are much more likely to come from socioeconomically deprived families and neighborhoods (e.g., Benjet et al., 2012; Bynner & Parsons, 2002). The E-Risk study was not designed purposely to investigate NEET, as youth unemployment rose after the study began. As a result, we lacked information on how long participants have been NEET, and lacked the month-to-month assessments needed to pin down sequential order between onset of 18-year-olds' NEET status and changes in their mental status. Nevertheless, prospective study waves revealed that some NEET youths' mental health problems were of long standing.

The goal of this report was not to infer causal relations between NEET status and mental health problems. Indeed, there is extensive evidence for reciprocal influence, including recent studies showing that childhood mental health problems precede and may lead to vulnerability to becoming NEET (Baggio et al., 2015; Catalano et al., 2011; Veldman et al., 2015). We think that NEET status and mental health problems often co-occur in young people while they make the transition from school to work because (1) the stress of wanting to work, but being unable to, can be harmful to mental health (Cook, 2006), (2) employers tend to preferentially hire applicants who seem healthier, especially when jobs are scarce (McGorry, 2013; Yelin & Katz, 1994), and (3) early manifestations of serious mental illness can include disengagement from education and employment (Scott et al., 2013). Similarly, there may be reciprocal influences between NEET status and self-perceptions if pessimism

and lacking skills lead to being unemployed, while being unemployed fosters pessimism and prevents opportunities to master new skills. Moreover, we recognize that levels of opportunity for employment rise and fall in conjunction with national economic circumstances, and are not caused by the circumstances of individuals. Causal relationships can be investigated with experimental studies that treat mental health, or provide employment, as their intervention (e.g., Tandon et al., 2015).

The objective of our report was to draw attention to the lives of NEET youths and their mental health needs. Our results suggest that these needs take three primary forms. First, NEET participants' self-perception that they lack skills is probably accurate. More young people should be trained in professional/technical and "soft" skills, which may also enhance optimism. Second, it will be crucial to provide mental health services to NEET youth as part of comprehensive ongoing efforts to support their transition into work or further education (Nelson & O'Donnell, 2012; Scott et al., 2013; U.K. Commission for Education and Skills, 2011). Reducing NEET youths' depression, anxiety, and substance abuse problems may enable them to more effectively cope with challenges, develop confidence in their abilities, and take better advantage of training and back-to-work opportunities (Cook, 2006). Third, it will also be critical to identify and provide enhanced educational guidance to young adolescents (i.e., 18 years) with mental health problems (Scott et al., 2013). It should be appreciated that these adolescents are at high risk for future economic disengagement.

It is not our intention to foster stigma or damage the prospects of NEET youth by adding the stereotype of "mentally ill" to the stereotype of "unmotivated." Instead, our view is that treating their mental health problems early may be an intervention target with long-term dividends for the children themselves as well as society (McGorry, 2013). Recent reports suggest that most British adolescents visit their GPs several times per year, which could provide opportunities to query mental health and substance abuse issues in primary care settings (Hagell, Coleman, & Brooks, 2013). However, the level of investment in child and adolescent mental health services in the U.K. is low and has further decreased in the face of the economic downturn (UK Department for Children & Health, 2010); moreover, coordination of care for young people transitioning out of adolescent mental health services into adult services is poor (Singh et al., 2010). Health service models that increase engagement and provide intensive employment support among economically inactive youths with mental health problems may be a more useful approach (Bond, Drake, & Becker, 2012; Scott et al., 2013).

The current high levels of youth unemployment in Europe and the United States are of grave concern. Policymakers and social welfare advocates continue to look for ways to improve the labour market outcomes of economically inactive young people (Eurofound, 2012). Our study contributes to this effort by highlighting the necessity of incorporating mental health services into youth career support initiatives. NEET youths are often assumed to be lazy or unwilling to work (e.g., "Private companies to get up to £2,200 for getting lazy teenagers out of bed," *Metro*, 2012). Our analyses suggest, instead, that NEETs are as motivated as their peers, but many face long-standing psychological challenges that put them at a disadvantage when seeking employment. In an economic context that presents structural barriers to *all*

would-be workers, NEET youths' psychological vulnerabilities place them at even greater risk for a constellation of long-term socioeconomic perils.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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KEY POINTS

NEET youth are a prevalent and highly stigmatized group in the United Kingdom

NEET youth are at high risk for long-term economic and social adversity, and are costly to government

Our study suggests that most NEET youth are endeavoring to find jobs and are committed to the idea of work

However, NEET youth feel hampered by their low skill levels and are discouraged about their future economic prospects

NEET youth are also contending with more mental health and substance abuse problems (past and concurrent) when compared to their peers

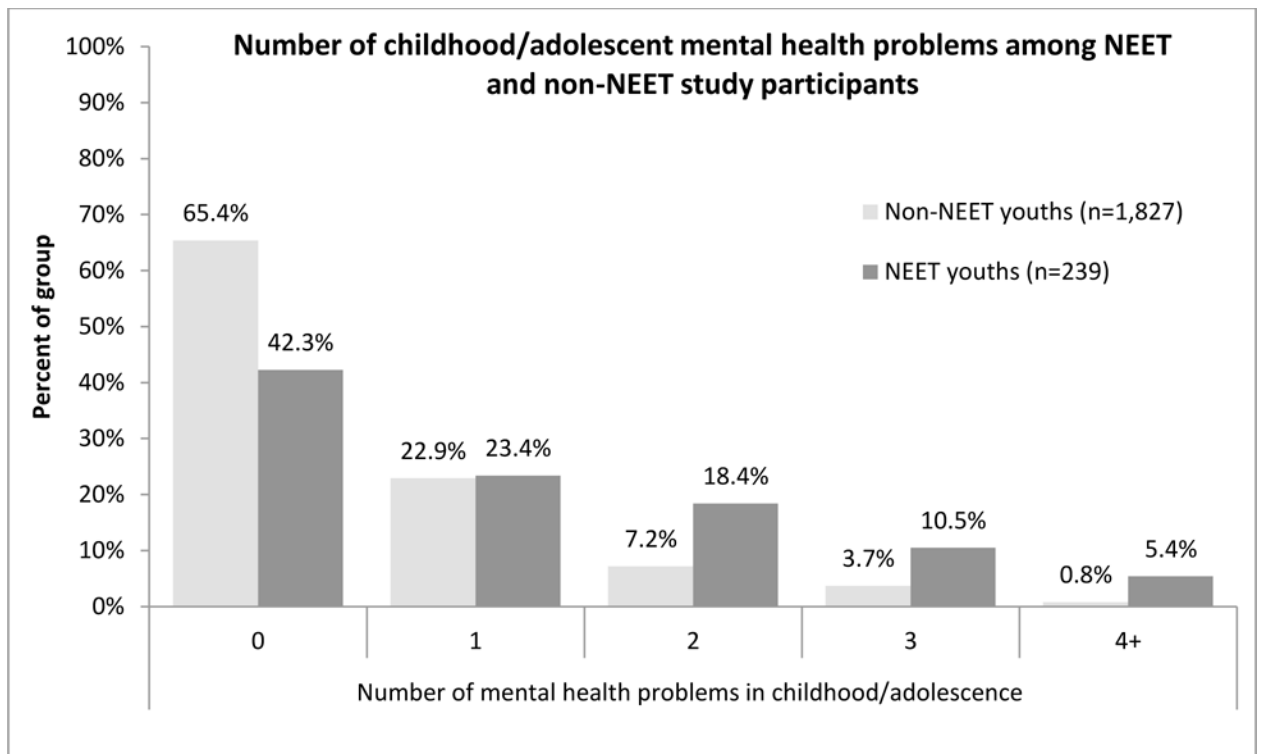


Figure 1.

Bars show the percentage of 18-year-old NEET and non-NEET E-Risk study participants who had had a serious mental health problem during childhood or early adolescence. Mental health problems include ADHD and conduct disorder diagnoses made between ages 5 and 12; depression, anxiety, and substance use at age 12; and suicidal behavior between ages 12 and 18.

Table 1

Demographic characteristics of non-NEET and NEET E-Risk youth

| | Not NEET (n=1,827) | NEET (n=239) | <i>p</i> |
|------------------------------------|-------------------------------|-------------------------|----------|
| Sex (n (% female)) | 954 (52.2%) | 131 (54.8%) | 0.450 |
| Low family social class (n (%)) | 535 (29.3%) | 156 (65.3%) | <0.001 |
| ACORN neighbourhood classification | | | |
| Wealthy Achievers (n (%)) | 483 (27.9%) | 28 (12.2%) | |
| Urban Prosperity (n (%)) | 86 (5.0%) | 8 (3.5%) | |
| Comfortably Off (n (%)) | 522 (30.2%) | 56 (24.5%) | <0.001 |
| Moderate Means (n (%)) | 228 (13.2%) | 42 (18.3%) | |
| Hard Pressed (n (%)) | 411 (23.8%) | 95 (41.5%) | |

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Table 2

Work-related self-perceptions at age 18 among non-NEET and NEET youth

| | Not NEET (n=1,827) Mean (SE) | NEET (n=239) Mean (SE) | Model A ^a B [95% CI] | Model B ^b B [95% CI] |
|-------------------------------------|------------------------------------|------------------------------|------------------------------------|------------------------------------|
| Commitment to work | 9.79 (0.07) | 9.39 (0.23) | -0.45 [-0.98, 0.10] | -0.49 [-1.03, 0.05] |
| Job search effort | 4.94 (0.06) | 5.73 (0.16) | 0.72 [0.33, 1.10] | 0.46 [0.07, 0.84] |
| Professional/technical skills | 5.01 (0.04) | 4.65 (0.12) | -0.17 [-0.47, 0.13] | -0.30 [-0.59, -0.004] |
| “Soft” skills | 17.08 (0.06) | 15.87 (0.22) | -0.98 [-1.45, -0.50] | -0.82 [-1.29, -0.35] |
| Perceptions of ability to get ahead | 16.46 (0.07) | 13.24 (0.26) | -2.41 [-3.01, -1.81] | -1.99 [-2.56, -1.43] |

Coefficients are from OLS regression analyses with robust SEs, estimating the association between NEET status and work-related self-perceptions. Model controls for participants' sex, family social class, and ACORN neighbourhood classification. *P* values are corrected for clustering of observations within twin pairs. Estimates in bold indicate a statistically significant association.

^a Model controls for sex, IQ, reading ability, family social class, and ACORN neighbourhood classification.

^b Model controls for sex, IQ, reading ability, family social class, ACORN neighbourhood classification, and number of psychiatric diagnoses at age 18 (depression, anxiety, alcohol dependence, cannabis dependence, and conduct disorder).

Table 3

Associations between NEET status and psychological disorder at age 18

| | Not NEET (n=1,827) N (%) with disorder | NEET (n=239) N (%) with disorder | Model A ^{*a} RR [95% CI] | Model B ^{*b} RR [95% CI] |
|------------------------------|--|--|--------------------------------------|--------------------------------------|
| Major depressive episode | 330 (18.1%) | 84 (35.4%) | 1.91 [1.52, 2.41] | 1.68 [1.33, 2.13] |
| Generalized anxiety disorder | 121 (6.4%) | 32 (13.5%) | 2.11 [1.37, 3.25] | 1.84 [1.19, 2.86] |
| Alcohol dependence | 221 (12.1%) | 42 (17.7%) | 1.67 [1.20, 2.34] | 1.42 [1.01, 2.01] |
| Cannabis dependence | 50 (2.7%) | 39 (16.3%) | 4.90 [2.91, 8.26] | 3.93 [2.31, 6.68] |
| Conduct disorder | 241 (13.2%) | 68 (29.1%) | 1.90 [1.47, 2.45] | 1.46 [1.12, 1.89] |
| Daily smoker | 405 (22.2%) | 135 (56.5%) | 1.85 [1.55, 2.21] | 1.51 [1.27, 1.80] |

* Results show adjusted risk ratios with NEET status as the main predictor of each age-18 psychological disorder. *P* values are corrected for clustering of observations within twin pairs. Estimates in bold indicate a statistically significant association.

^a Model controls for sex, IQ, reading ability, family social class, and ACORN neighbourhood classification.

^b Model controls for sex, IQ, reading ability, family social class, ACORN neighbourhood classification, and number of childhood mental health problems (conduct disorder diagnoses made between ages 5 and 12; depression, anxiety, and substance use at age 12; and suicidal behavior between ages 12 and 18).

Table 4

Mental health problems in childhood/adolescence among non-NEET and NEET youth

| | Not NEET (n=1,827) N (%) with problem | NEET (n=239) N (%) with problem | OR [95% CI][*] |
|--------------------------------|--|--|--------------------------------|
| ADHD, ages 5–12 | 188 (10.4%) | 60 (25.9%) | 2.79 [1.90–4.10] |
| Conduct disorder, ages 5–12 | 251 (13.7%) | 73 (30.5%) | 2.36 [1.62–3.44] |
| Depression, age 12 | 54 (3.0%) | 19 (8.3%) | 2.57 [1.40–4.72] |
| Anxiety, age 12 | 99 (5.6%) | 22 (9.6%) | 1.38 [0.81–2.37] |
| Harmful substance use, age 12 | 262 (14.8%) | 61 (26.8%) | 1.89 [1.29–2.77] |
| Suicidal behaviour, ages 12–18 | 91 (5.0%) | 38 (15.9%) | 3.30 [2.07–5.27] |

* Results are from logistic regression analyses estimating NEET vs. non-NEET participants' odds of having had each respective mental health problem in childhood, controlling for sex, family social class, and ACORN neighbourhood classification. *P* values are corrected for clustering of observations within twin pairs. Estimates in bold indicate a statistically significant association.