



Original article

Not in Education, Employment, or Training Status Among Young Swiss Men. Longitudinal Associations With Mental Health and Substance Use



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A B S T R A C T

Purpose: Not in Education, Employment, or Training (NEET) youth are youth disengaged from major social institutions and constitute a worrying concern. However, little is known about this subgroup of vulnerable youth. This study aimed to 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.

Methods: As part of the Cohort Study on Substance Use Risk Factors, 4,758 young Swiss men in their early 20s answered questions concerning their current professional and educational status, personality, substance use, and symptomatology related to mental health. Descriptive statistics, generalized linear models for cross-sectional comparisons, and cross-lagged panel models for longitudinal associations were computed.

Results: NEET youth were 6.1% at baseline and 7.4% at follow-up with 1.4% being NEET at both time points. 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.

Conclusions: NEET status seemed to be unlikely and transient among young Swiss men, associated with differences in mental health and substance use but not in personality. Causal paths presented NEET status as a consequence of mental health and substance use rather than a cause. Additionally, this study confirmed that cannabis use and daily smoking are public health problems. Prevention programs need to focus on these vulnerable youth to avoid them being disengaged.

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IMPLICATIONS AND
CONTRIBUTION

Not in Education, Employment, or Training youth require special focus because they are more likely to be drug users and to report depressive symptoms. Mental health, cannabis use, and daily smoking also should be at focus among youth because it increases the risk of becoming disengaged from society.

Conflicts of Interest: The authors have no conflicts of interest to declare.

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Nowadays, an increasing number of youth are disengaged from major social institutions such as the education system and the labor force [1], especially in the context of the current economic downturn. These youth are termed “Not in Education,

Employment or Training” (NEET). In 2011, the prevalence rate of NEET youth across Organization for Economic Cooperation and Development (OECD) countries was 16% among the 15–29 year olds (7% inactive and 9% unemployed) and 20% among the 25–29 year olds (12% inactive and 8% unemployed) [2]. Public health literature has recently shown interest in this phenomenon because NEET youth may be a vulnerable and socially excluded subgroup of youth, with increased risky behaviors and poor mental health [3,4]. The at-risk population includes school dropouts, minorities, foster youth, and youth in the justice system. However, little is known about the characteristics of NEET youth and how they are different from other contemporaries.

Indeed, to our knowledge, no study investigated if NEET status is associated with a set of stable characteristics such as personality. Are NEET youth a specific subgroup of youth with permanent traits? Or is there a difference in transient patterns of behaviors and feelings? This study investigated this topic.

Furthermore, a few previous studies associated NEET phenomenon with increased mental health issues, including conduct disorders, mood disorder, and suicidal thoughts [3,4]. However, causal paths from mental health to NEET phenomenon are not clear. Indeed, youth with prior mental health issues are likely to be disengaged from education and employment [5,6]. On the contrary, being disengaged may lead to feeling of hopelessness and mental health issues [3,6,7]. Indeed, being an NEET may have a demoralizing effect for individuals [2].

Being NEET is also associated to increased risk of substance use and crime [3,7]. Longitudinal studies focusing on the relationship between NEET status and substance use are scarce, but unemployment and school disengagement have often been investigated separately. Studies reported reciprocal effects between substance use and unemployment/school disengagement. Indeed, unemployed youth are more likely to use substance, and substance use increases the likelihood of being unemployed [6,8]. School disengagement and academic failure may also be both causes and consequences of substance use [9,10].

NEET youth is a heterogeneous population, and subgroups shared different patterns of related issues. First, previous studies distinguished between short- and long-term NEET youth. Youth disengaged for long periods suffer serious social and economic problems, whereas short-term NEET youth did not. Second, a recent report distinguished “vulnerable” NEET youth and “non-vulnerable” NEET youth. The first ones are marginalized youth, lacking of social, cultural, and human capital (e.g., long-term unemployed youth, disengaged youth with asocial lifestyle, illness). The second ones are voluntary NEET youth, who choose to be NEET and not lack of social, cultural, and human capital (e.g., traveling youth). The latter are more susceptible to be short-term NEET youth.

To our knowledge, no study investigated longitudinal associations between NEET youth with risky behaviors and mental health, although this design is required for the examination of causality and reverse causality [11]. This study aimed to fill in this gap within a sample of young Swiss men. Therefore, the objectives of the study were twofold: (1) to examine if NEET youth differ from other contemporaries in terms of personality, substance use, and mental health and (2) to provide longitudinal examination of NEET status, testing whether NEET status is a transient or a stable phenomenon, including prospective pathways between NEET status, mental health, and substance use to see if there were reinforcing factors for staying or becoming NEET.

Methods

Participants and procedures

The present study analyzed the data collected in the Cohort Study on Substance Use Risk Factors, a longitudinal study designed to assess substance use patterns and their related consequences for young Swiss men. Participants were enrolled during conscription in three of Switzerland's six army recruitment centers; these cover 21 of the 26 Swiss cantons (including all French-speaking cantons) and are located in Lausanne (French speaking), Windisch, and Mels (both German speaking). Army recruitment is obligatory in Switzerland; thus, all young Swiss men around 20 years old were eligible for the study's inclusion. Assessments of baseline (September 2010 to May 2012) and follow-up (March 2012 to April 2013) data were carried out outside the army environment and independently of eligibility for military service. Respectively 5,990 and 5,223 (87.2%) participants filled in the baseline and the follow-up questionnaires. Missing values were deleted listwise, and the final sample consisted of 4,758 participants (91.1% of the follow-up sample). More information on sampling and nonresponse is available from Studer et al. [12,13]. In summary, the results indicated that nonresponse bias was small. There was no significant difference between respondents and nonrespondents regarding the occupational status for any outcome (personality, substance use, mental health). The study protocol (Protocol No. 15/07) was approved by Lausanne University Medical School's Clinical Research Ethics Committee.

Measures

Not in Education, Employment, or Training status. Current occupational status was assessed by asking participants “what is your current professional status?” Answers were aggregated into “studying/working” (including participants in military service or civic service) and “NEET.” These youth included people who are no longer studying and are out of work, including participants currently looking for a job and those not looking for a job (e.g., jobless, at home, sabbatical).

Personality. Six aspects of personality were assessed: traits of neuroticism/anxiety, aggression/hostility, and sociability were measured using the Zuckerman–Kuhlmann Personality scale [14]; the sensation seeking trait was measured with the brief sensation-seeking scale [15]; and the behavioral inhibition system and behavioral approach system were assessed using the behavioral inhibition system/behavioral approach system scale [16].

Mental health. Screening measures for symptomatology of mental health were used. The WHO's Major Depressive Inventory (International Classification of Diseases, Tenth Revision) was used to assess levels of depression [17] during the two previous weeks. The number of depressive symptoms was used because of the small number of participants with major depressive diagnosis. Mental health was assessed using the Short Form Health Survey [18], with the mental component summary, assessed for the four previous weeks. Higher score indicated better mental health.

Alcohol use. Alcohol use was assessed using the extended quantity–frequency measure of alcohol use [19] and following

Rehm et al. [20] to create groups of alcohol users. A first variable with a cutoff of at least 40-g pure alcohol on average per day (i.e., 28 drinks a week) and a second variable with a cutoff of at least 20-g pure alcohol on average per day (i.e., 14 drinks a week) are recommended as a basis for formal therapy and for brief intervention, respectively. The variables were coded 0 if the participants drank less alcohol than the cutoff and 1 otherwise. We also measured binge drinking with the standard question of the Alcohol Use Disorder Identification Test as frequency of six drinks or more on an occasion in the previous 12 months. Weekly or more frequent binge drinking was coded 1, and 0 otherwise.

Tobacco use. Tobacco use was assessed with two variables: smoking status (participants were asked whether they smoked during the previous 12 months, coded 1 if participants smoked and 0 otherwise) and daily smoking (participants who smoked at least one cigarette daily, coded 1 for daily smokers and 0 otherwise).

Cannabis use. Cannabis use was also assessed with two variables: cannabis use (coded 1 if participants used cannabis during the previous 12 months and 0 otherwise) and hazardous cannabis use (coded 1 if participants used cannabis weekly and 0 otherwise).

Other illicit drug use. The use of 15 other illicit drugs (e.g., cocaine, heroin, ecstasy, poppers, ketamine) was assessed for the previous 12 months, coded 1 if participants used at least one illicit drug and 0 otherwise.

Demographic covariate. Language (French or German), perceived family income (“below-average income,” “average income,” “above-average income”), age at baseline, and parents’ level of education (primary, secondary, and tertiary) were assessed.

All variables, except personality and covariates, were investigated at baseline and follow-up.

Statistical analyses

Prevalence rates and descriptive statistics were first computed. Then, two sets of analyses were performed, each one related to a research question.

Examining if Not in Education, Employment, or Training youth differ from other contemporaries in terms of personality, substance use, and mental health. The first set of analyses included cross-sectional comparisons using baseline data. Sixteen generalized linear models were computed, including NEET status as an independent variable and personality (six variables), substance use (eight variables), and mental health (two variables) as dependent variables. We performed linear regression and logistic regression according to the distribution of the dependent variable, controlling for demographic covariates.

Longitudinal investigations of Not in Education, Employment, or Training status. The second set of analyses provided evidence regarding longitudinal associations for NEET youth. First, the change of NEET status over time between baseline and follow-up was assessed with (1) prevalence rates of NEET at baseline and follow-up, (2) a contingency table between the two time points, and (3) a logistic regression with NEET status at baseline

predicting NEET at follow-up, controlling for demographic covariates.

Second, the direction of the relationships between NEET status, substance use, and mental health was investigated using 10 cross-lagged panel models including occupational status and each variable related to substance use and mental health (depression, mental health, candidates for brief intervention, candidates for formal therapy, binge drinking, tobacco use, daily smoking, cannabis use, hazardous cannabis use, and other illicit drug use). These models examined whether one variable predicted subsequent changes in the other variable, that is, causal paths (e.g., NEET status at baseline predicted cannabis use at follow-up) and of the reverse lagged associations, that is, reverse causal paths (e.g., cannabis use predicted NEET status at follow-up). The models were tested controlling autoregression (the relationship between the same variable at both time points), synchronous correlations (the relationship between two variables at the same time point), and for demographic covariates.

For all analyses, a Bonferroni correction was applied for each model to keep a 5% error rate.

As a sensitivity analyses, we also tested models with and without including participants looking for a job in the NEET youth. The results were the same (no change of direction of effects), with some significance level not reaching $p < .05$ because of small sample size.

Analyses were carried out using Mplus 7 [21] and SPSS 21.

Results

Participants were aged 20.0 ± 1.2 years old on average at baseline and 21.3 years old at follow-up (about 15 months of difference). The age range at baseline was 17.9–27.8 year old, with only .5% of participants being 25 years old or older. Table 1 summarizes the prevalence rates and descriptive statistics. At baseline, NEET youth were 6.1%, including 4.0% of unemployed ($N = 192$) and 2.1% of other NEET youth ($N = 100$). At follow-up, NEET youth were 7.4%, including 4.9% of unemployed ($N = 234$) and 2.5% of other NEET youth ($N = 117$).

Examining if Not in Education, Employment, or Training youth differ from other contemporaries in terms of personality, substance use, and mental health

Comparisons between NEET and non-NEET youth showed no significant differences in terms of personality (Table 1; $p > .05$ for all seven variables). In cross-sectional comparisons, NEET status was associated with an increased number of mental health problems (symptoms of depression: $p = .004$) than non-NEET status but not with mental health.

NEET status was associated with increased illicit drug use (cannabis use: $p = .006$, hazardous cannabis use: $p < .001$, and other illicit drug use: $p = .005$) and tobacco use (smoking status: $p = .002$, daily smoking: $p < .001$) but not with alcohol use (candidates for brief intervention, candidates for formal therapy, binge drinking).

Longitudinal associations of Not in Education, Employment, or Training status

Regarding the transient or stable character of NEET status, Table 2 reported longitudinal associations for NEET status. Only 1.4% of all participants were NEET at both baseline and follow-up.

Table 1

Descriptive statistics and cross-sectional comparisons of NEET and non-NEET

	Baseline			p value
	Overall	NEET	Non-NEET	
% (n)	100 (4,758)	6.1 (292)	93.9 (4,466)	
Personality, mean (standard deviation)				
Sensation seeking (1–5) ^a	3.04 (.86)	3.01	3.05	NS
Aggression/hostility (0–1) ^a	.41 (.21)	.44	.41	NS
Sociability (0–1) ^a	.58 (.22)	.55	.58	NS
Neuroticism/anxiety (0–1) ^a	.20 (.20)	.23	.20	NS
Behavioral inhibition system (1–4) ^a	2.42 (.47)	2.40	2.43	NS
Behavioral approach system (1–4) ^a	2.18 (.43)	2.24	2.17	NS
Health status, mean (standard deviation)				
Depression (0–50) ^b	6.98 (7.06)	9.28	6.83	<.001
Mental health (0–100) ^a	47.37 (9.07)	45.40	47.50	NS
Substance use, % (n)				
Candidates for brief intervention (≥ 14 drinks per day) ^c	19.8	20.9	19.7	NS
Candidates for formal therapy (≥ 28 drinks per day) ^c	4.7	4.8	4.7	NS
Binge drinking ^c	22.0	22.1	20.2	NS
Tobacco use ^c	42.1	53.1	41.4	.002
Daily smoking ^c	18.3	30.5	17.5	<.001
Cannabis use ^c	30.0	40.4	29.3	.006
Hazardous cannabis use (\geq weekly) ^c	8.4	20.2	7.7	<.001
Other illicit drug use ^c	10.4	18.8	9.8	.005

A Bonferroni correction was applied.

NEET = Not in Education, Employment, or Training; NS = nonsignificant.

Linear generalized models were performed, comparing “NEET” and “non-NEET.” The analyses controlled for language, age, perceived family income, and parents’ level of education.

^a Linear regression.^b Poisson regression.^c Logistic regression.

A total of 23.3% of the participants who were NEET at baseline were NEET at follow-up (68 of 224).

The results of the logistic regression predicting NEET status at follow-up with NEET status at baseline showed a significant association of NEET status at baseline with NEET status at follow-up ($\beta = .178$, $p < .001$, odds ratio [OR] = 1.20).

Table 3 presents the results of the 10 cross-lagged panel models examining the prospective pathways between NEET status, mental health, and substance use.

Regarding mental health, reverse causal paths were significant. Mental health at baseline increased the risk of being NEET at follow-up (depression: $\beta = .106$, $p < .001$, OR = 1.11; mental component summary: $\beta = -.105$, $p < .001$, OR = .90). Causal

Table 2

Contingency table for NEET status at baseline and follow-up

		Follow-up, % (n)	
		Non-NEET	NEET
Baseline	Non-NEET	87.9 (4,183)	5.9 (283)
	NEET	4.7 (224)	1.4 (68)

NEET = Not in Education, Employment, or Training.

Table 3

Prospective associations between NEET status, mental health, and substance use

V2	Causal paths			Reverse causal paths		
	NEET bl \rightarrow V2 fu			V2 bl \rightarrow NEET fu		
	β	p value	OR	β	p value	OR
Depression ^a	.093	NS	—	.106	<.001	1.11
Mental health ^b	-.028	NS	—	-.105	<.001	.90
Candidates for brief intervention (≥ 14 drinks per day) ^c	-.015	NS	—	.062	NS	—
Candidates for formal therapy (≥ 28 drinks per day) ^c	.049	NS	—	.027	NS	—
Binge drinking ^c	.014	NS	—	.017	NS	—
Tobacco use ^c	.014	NS	—	.076	NS	—
Daily smoking ^c	.032	NS	—	.090	<.001	1.09
Cannabis use ^c	-.002	NS	—	.082	.020	1.09
Hazardous cannabis use (\geq weekly) ^c	.056	NS	—	.082	<.001	1.09
Other illicit drug use ^c	.050	NS	—	.047	NS	—

Example of causal path: depression at fu on NEET status at bl. Example of reverse causal path: NEET status at fu on depression at bl.

Non-NEET status was used as the reference category.

Standardized β are given. A Bonferroni correction was applied.

bl = baseline; fu = follow-up; NEET = Not in Education, Employment, or Training; NS = nonsignificant; OR = odds ratio.

Cross-lagged panel model controlling for language, age, perceived family income, parents’ level of education, autoregression of the same variable within time, and synchronous correlations between NEET status and V2, either at baseline or follow-up.

^a Poisson regression.^b Linear regression.^c Logistic regression.

paths were nonsignificant: NEET status at baseline did not predict mental health at follow-up.

Regarding substance use, three reverse causal paths were significant. Daily tobacco use, cannabis use, and hazardous cannabis use at baseline increased the risk of being NEET at follow-up: daily smoking ($\beta = .090$, $p < .001$, OR = 1.09), cannabis use ($\beta = .082$, $p = .020$, OR = 1.09), and hazardous cannabis use ($\beta = .082$, $p < .001$, OR = 1.09). The other reverse causal paths and all causal paths from NEET status to substance use were nonsignificant.

Discussion

This study aimed to examine if NEET youth differ from other contemporaries in terms of personality, substance use, and mental health and to provide longitudinal examination of NEET youth, including prospective pathways between NEET status, mental health, and substance use and the stability of the NEET phenomenon across time.

First of all, the prevalence rates of the present study were in accordance with those previously reported. NEET youth and unemployed represented 6.1% of the total sample at baseline and 7.3% at follow-up. Disengagement from any institution (education system, labor force) was quite uncommon among young Swiss men. The OECD [2] reported a total of 6.0% of inactive and unemployed Swiss youth in 2013, including 3.5% of the 15–24 year olds being inactive. In the present study, inactive youth (excluding unemployed participants who looked for a job) were a little more than 2% at each separate time point. The number of NEET youth appeared to be very low in Switzerland, in

comparison with the whole OECD countries (12.5% in 2010 and 12.6% in 2012; [2,22]). However, the results are comparable with those of northern OECD countries, which reported such low prevalence rates of NEET youth, such as Netherlands, Denmark, Iceland, Austria, Norway, Sweden, Germany, Finland, and also Japan (i.e., inactive youth <4.9%, inactive and unemployed youth < 8.4%). In contrast, Southern European countries (Greece, Turkey, Italy, and Spain) and Mexico reported the highest prevalence rates of inactive youth (>6.4%) and inactive and unemployed youth (>19.6%). The prevalence rate of NEET youth in the United States was also much greater in 2012 (inactive youth: 5.7%, inactive and unemployed youth: 13.0%). These differences may be associated with cultural and religious questions. Indeed, the northern countries mentioned are historically Protestant countries (except Austria), whereas the other Latin countries are historically Catholic/Orthodox countries. Since Weber [23], it is well known that Protestantism is associated with a specific work ethic, which values hard work and self-discipline. Austria and Japan, even if they have not a Protestant background, have low prevalence rates of unemployment. Because of this unique cultural context, NEET youth may be a less crucial problem in Switzerland than elsewhere.

Second, NEET youth did not differ in any dimensions of personality. However, they were more likely to engage in substance use. This was true for illicit drug use, such as cannabis use and other illicit drug use, and also for tobacco use but not for alcohol use. NEET youth were also more likely to report depressive symptoms. As mentioned in the OECD report [2], being NEET may be associated with demoralizing effects. The result dealing with depressive symptoms should be in line with this assumption. Overall, these results were in line with the hypothesis that being NEET was not a set of characteristics, referring for example to a specific personality of NEET youth.

Regarding longitudinal associations, NEET status was transient, as only 1.4% of the youth were NEET at both baseline and follow-up. Even if some youth were NEET for a while, most of them did not remain NEET for a long time. “Doing nothing” did not seem in the Swiss youth culture of these young men in their 20s. However, the risk of being NEET at follow-up was increased by 1.20 if participants were NEET at baseline, a small but significant effect. Therefore, a specific attention to these vulnerable youth is required to avoid long-term disengagement. Moreover, as NEET status in youth appears to be transitory, including the length of time being an NEET youth as a risk factor in future studies may be very informative. It would also allow identifying whether long-term NEET youth face a trajectory of challenges, especially in Switzerland, where this status was uncommon. Indeed, the follow-up period was quite short.

The prospective pathways from NEET status to mental health showed that youth with prior mental health issues were more likely to become NEET [5,6]. Indeed, having mental health increased the risk of becoming an NEET. On the contrary, the demoralizing effects of being NEET was not found in this study, as NEET status did not increase the risk of developing later mental health issues [2].

Regarding substance use, cannabis use and heavy cannabis use at baseline increased the likelihood of being NEET at follow-up. This result added to the growing evidence on negative consequences associated with cannabis use. Indeed, previous studies reported that repeated cannabis use in teenage and early adulthood increases later adverse consequences on health, school disengagement, unemployment, and more generally,

psychosocial functioning [24–26]. It appeared that cannabis use increased the risk of being disengaged, even if being NEET is uncommon and transient in Switzerland. This result is in line with a recent study showing that cannabis use is a risk factor for job loss [8]. Moreover, not only heavy cannabis use increased the risk of being NEET but being a cannabis user also increased this risk, regardless of the frequency of cannabis use.

Tobacco use also increased the risk of becoming later an NEET, but it concerned only daily smoking and no smoking status (being a smoker or not). Therefore, regular and/or heavy tobacco use seemed to have harmful effects. Deleterious consequences of smoking on health are well known [27], but it has also social consequences such as disengagement. For example, Brook et al. [28] showed that cigarette smoking is a risk factor for unemployment. Smoking-related illnesses, increased absenteeism, financial stress leading to psychological symptoms, and decline in cognitive functioning are possible causes of this relationship. The fact that even youth in their early 20s showed this association is a worrying concern.

No reciprocal associations of NEET status with substance use appeared, as reported in studies focusing separately on unemployment and school disengagement [6].

Alcohol use showed specific patterns, being neither associated with NEET status in cross-sectional nor associated with longitudinal associations. Previous studies reported conflicting results between alcohol use and academic performance, sometimes suggesting that alcohol use decreases the number of years of schooling and graduation and other times reporting negligible or nonsignificant associations [29]. Conflicting associations between alcohol use and unemployment have also been reported [8]. Indeed, unemployment may increase alcohol use because people used alcohol for coping motives, but income effect also may moderate alcohol use. A recent study reported no association between heavy alcohol use/DSM-IV alcohol abuse/dependence and the unemployed subgroup of youth between 18 and 25 year olds [8]. These authors suggested that this finding was due to a high degree of acceptance of alcohol use among youth. It was also may be because alcohol use is widespread among youth, so alcohol use reached a maximum that NEET youth cannot exceed. More studies are needed to elucidate these inconsistent associations.

Overall, these results showed that being NEET had not any long-lasting consequences, even if it was associated with substance use and depressive mood. Indeed, causal paths presented NEET status as a consequence of mental health and substance use rather than a cause. Some issues (mental health, cannabis use, and tobacco use) may have consequences on youths' disengagement, but they did not lead to youths' disengagement and did not show reciprocal reinforcing effects.

Therefore, NEET status among young Swiss men was at the same time unusual, transitory, and without long-lasting consequences. These results may be surprising because NEET status has been associated with various deleterious consequences, even if prospective associations have rarely been at focus. One explanation is that NEET youth represent a heterogeneous population, as reported in the introduction section. In contrary to other countries where NEET status has been associated with long-lasting consequences, Swiss young men may belong to the “non-vulnerable” NEET youth, that is, those who choose to be NEET and do not lack social, cultural, and human capital. Therefore, they are more likely to be short-term NEET without consequences on health and risky behaviors. More investigations

are needed on this topic, including prospective comparisons with other countries.

The most important limitation of this study was that it only included men. To establish whether its findings are consistent for both sexes would require a study including women. Another shortcoming was self-reported data: Even if these are generally considered valid on health issues and substance use, self-reported surveys could introduce various forms of bias. Third, mental health assessment only assessed screening measures of general symptomatology. More studies including measures of diagnosis are needed. Moreover, other relevant disorders such as psychosis, bipolar disorder, and attention deficit hyperactivity disorder were not included and need further investigations. Finally, a last limitation was that men around 20 years of age were included in the study, so the whole age range of NEET youth was not at focus. Indeed, NEET status may concern younger and older youth (from 15 to 29 year olds, as reported in OECD [2]).

In conclusion, NEET youth require special focus as they were heavy drug users and in some ways showed poorer mental health. However, this status seemed to be an unlikely and transient one among young Swiss men emerging into adulthood, and most NEET youth did not become disengaged from society. NEET status seemed to be highly related to the country's context, including culture and economic situation. Moreover, causal paths presented NEET status as a consequence of mental health and substance use rather than a cause. Additionally, this study confirmed that cannabis use and daily smoking are public health problems with adverse consequences, and thus prevention programs need to focus on these vulnerable youth to avoid them being disengaged and excluded in addition to their mental health and/or substance use.

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