Caught in the "NEET Trap": The Intersection Between Vocational Inactivity and Disengagement From an Early Intervention Service for Psychosis

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Objective: Given the benefits of early intervention for psychosis and the social disengagement of youths not in education, employment, or training (NEET), this study sought to examine how being vocationally inactive (NEET) affects engagement in early intervention services. Both baseline vocational status and vocational trajectory in the first year of treatment were analyzed.

Methods: Data from 394 patients of a Canadian early intervention service were analyzed using time-to-event and Cox proportional hazards regression analyses. Two-year disengagement rates were compared between patients who were vocationally inactive and active at baseline and between those who remained vocationally inactive until month 12 and those who were vocationally inactive only at baseline. Pertinent sociodemographic (age, sex, visible minority status, social and material deprivation indices, and family involvement), and clinical (duration of untreated psychosis, substance use disorder, medication nonadherence, and baseline positive and negative symptoms) factors were considered.

Results: There was no statistically significant difference between the disengagement rates of those who were vocationally inactive (N=154) and those who were vocationally active (N=240) at baseline. Those who remained vocationally inactive at month 12 (N=77) were likelier to disengage in the second year than those who were vocationally inactive only at baseline (N=48) (χ^2=5.44, df=1, $p<0.05$). This comparison remained significant in the regression analysis (hazard ratio [HR]=8.52, 95% confidence interval [95% CI]= 1.54–47.1). The association of disengagement from services with lack of family contact with the treatment team (HR=3.91, 95% CI=0.98–15.6) and with greater material deprivation (HR=1.03, 95% CI=1.00–1.07) trended toward significance.

Conclusions: The functional recovery of youths who are vocationally inactive when they enter services can affect their long-term service engagement and merits targeting by evidence-based interventions.

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Early intervention services aim to provide high-quality treatment to young people in the early stages of psychosis (1). These services have been shown to yield superior outcomes compared with regular care (2). Although early intervention services focus on keeping patients engaged in services to facilitate clinical and functional recovery (1, 3), disengagement from early intervention services (rates of 20%−40%) remains a concern (4–8). Known predictors of disengagement include racial-ethnic minority status, lack of family involvement, poor medication adherence, and substance abuse (5, 9, 10).

Given their concern with engagement, early intervention service providers would do well to examine how they serve youths who are already disengaged from the major social systems of education and work (11). These individuals, who are not in education, employment, or training (NEET), represent 14% of the youth population in Organisation for Economic Co-Operation and Development (OECD) countries (12) and have been a source of growing concern over the

HIGHLIGHTS

- Individuals with psychosis who were vocationally inactive at entry were at no higher risk of service disengagement over the subsequent 24 months than those who were vocationally active at entry.
- Those who were neither in work nor in school at entry and after a year into treatment were likelier to disengage from treatment during the second year than those who were vocationally inactive only upon entry.
- Early functional recovery can promote longer-term engagement in services for psychosis.

past two decades (13–15). Being NEET, or vocationally inactive, is associated with numerous social and economic costs, along with feeling excluded, discouraged, and disempowered (16). The relationships between mental illness and vocational inactivity may be circular, with each increasing the risk of the other (17–20).

Poorer functional outcomes following treatment have been associated with higher rates of disengagement from early intervention services (5). Individuals who are vocationally inactive are already disengaged from social systems and are economically and socially marginalized (21, 22), which may drive their disengagement from services. This raises the yet unexplored question of whether young individuals who are vocationally inactive at entry into mental health services are more likely to disengage from treatment.

Our objective was therefore to determine if young people who were vocationally inactive (NEET) at entry into an early intervention psychosis service were likelier to disengage from treatment than their vocationally active counterparts. To understand whether prolonged periods of functional inactivity impede engagement, we also investigated the impact on future service engagement of remaining vocationally inactive following treatment. Thus, an additional objective was to examine whether those individuals who remained vocationally inactive after a year of treatment were more likely to disengage from services during the second year of treatment compared with those who started work or school during the first year of treatment.

METHODS

Sample

This study was conducted at the Prevention and Early Intervention Program for Psychosis (PEPP), a publicly funded program for early intervention in psychosis serving a specific catchment area in Montreal. Individuals qualify for entry if they meet *DSM-IV-TR* criteria for a diagnosis of psychosis (nonaffective or affective) that is not secondary to an organic brain disorder, are 14 to 35 years old, have an IQ above 70, and have had less than 1 month of antipsychotic pharmacotherapy. The program's two-year follow-up includes case management, pharmacotherapy, and psychosocial interventions such as family psychoeducation. These core components of treatment are offered to everyone, with additional psychosocial interventions offered on an as-needed or as-available basis. For instance, patients are referred to cognitive-behavior therapy if they are interested in receiving it and present with depression, anxiety, or persistent positive and negative symptoms following 3 months of treatment. Patients are referred for individual placement and support (23) if they express an interest in returning to work or school.

Our study included all individuals who could have received 2 years of treatment between 2003 and February 2018 (i.e., initiated treatment before February 2016) and who provided informed consent. This article used data from a larger study approved by the institutional research ethics board.

Assessments

At both baseline and month 12, patients were classified either as vocationally inactive (NEET) or as vocationally active using an item related to occupational and vocational functioning from the Strauss-Carpenter Scale (24). They were considered vocationally inactive if they were not employed and not in school at all or if they had been employed or in school for less than 6 of the past 12 months. Individuals who were engaged in work or school for less than half the year in their first year of treatment were classified as vocationally inactive at 12 months, regardless of their work or school status at the 12-month mark.

To categorize only those who were vocationally disengaged for a substantial period (more than 6 months) as vocationally inactive, our time frame of inactivity was longer than the OECD time frame of 1 week that is commonly used in the literature. Individuals who were vocationally inactive at both baseline and month 12 were considered to be vocationally inactive on a sustained basis, whereas those who were vocationally inactive at baseline but vocationally active at month 12 were considered transiently vocationally inactive.

Participants were considered to have disengaged from the service following 3 consecutive months of no clinical contact (10). Time to disengagement was calculated as the time from program entry until the beginning of the 3 months of no contact. Participants who moved or were transferred during treatment were not considered to have disengaged from the service and were censored at the time of the move or transfer. Those who completed 24 months of treatment were censored at that time.

We assessed sociodemographic and clinical variables known to be associated with disengagement from early intervention services (4, 5). These included age; sex; visible minority status (white or nonwhite and non-Aboriginal [25]), Social Deprivation Index and Material Deprivation Index of patients' neighborhoods (i.e., census-based geographic area) as proxy measures of their socioeconomic status (26); family involvement in treatment (defined as presence or absence of contact with the treatment team); duration of untreated psychosis (DUP), log-transformed to account for skewed values; baseline Structured Clinical Interview for DSM-IV-TR diagnosis of substance use disorder (yes/no); and modal medication adherence in the first year of treatment (yes/no).

DUP was defined as the time in weeks between the onset of the first psychotic episode and the commencement of adequate treatment. Adequate treatment was defined as taking antipsychotic medication for 1 month or until significant reduction in symptoms, whichever came first. The Social Deprivation Index combines three indicators from the Canadian census: the proportion of the population aged

15 and over living alone; the proportion of the population aged 15 and over who are separated, divorced, or widowed; and the proportion of single-parent families. The Material Deprivation Index combines three indicators from the Canadian census: the proportion of the population 15 years and over without a high school diploma (or equivalent), the employment-to-population ratio for the population 15 years and over, and the average income of the population aged 15 years and over. Both indices are based on individuals' postal codes and are reported as continuous variables based on centiles, with higher scores denoting greater deprivation (26). Participants were considered medication nonadherent if they were adherent for <75% of the time for at least 6 months during the first year of treatment. We assessed baseline positive symptoms by using the total score on the Scale for the Assessment of Positive Symptoms (27). For negative symptoms, we used the total score on the Scale for the Assessment of Negative Symptoms (28), excluding the item assessing impersistence at work or school to remove overlap with vocational status.

Analysis

Descriptive statistics are presented as proportions for count data and means with standard deviations for continuous data. Group differences between vocationally inactive and vocationally active participants were determined using independent-samples t tests and Pearson's chi-square tests for continuous and dichotomous variables, respectively.

Kaplan-Meier time-to-event analyses were conducted using the log-rank test to compare rates of disengagement between participants who were vocationally inactive and vocationally active at baseline and between participants who were vocationally inactive at both baseline and month 12 (vocationally inactive on a sustained basis) and vocationally inactive only at baseline but not at month 12 (transiently vocationally inactive). Multivariate Cox proportional hazards regression analysis was used to identify predictors of service disengagement. This analysis included vocational trajectory, age, gender, substance use disorder, visible minority status, social deprivation index, material deprivation index, family involvement, DUP, and baseline positive and negative symptom severity. Results are presented as hazard ratios (HRs) with 95% confidence intervals (95% CIs). Analyses were performed using SPSS version 24.

RESULTS

At baseline, 61% (N=240) of our sample was vocationally active and 39% (N=154) was vocationally inactive (NEET). Overall, the sample was 60% white with a mean age of 22.6±3.62 years and a median DUP of 16.1±96.3 weeks. Social and material deprivation indices were 75.9±20.0 and 62.0±30.3, respectively, suggesting that a substantial proportion of our sample was socially and materially deprived. Families of 80% of patients were in contact with the treatment team, and 74% of patients were medication-adherent during the first year.

Vocationally Inactive Versus Vocationally Active at Baseline

Vocationally inactive (NEET) participants, compared with vocationally active participants (Table 1), were likelier to be male (79% versus 68%; χ^2=5.68, df=1, p<0.02), to not have completed high school (49% versus 31%; χ^2=11.24, df=1, p<0.001), to have a longer DUP (60.2±82.4 weeks versus 46.4±103.8 weeks; t=−2.95, df=351, p<0.01), to have a substance use disorder diagnosis (66% versus 54%; χ^2=5.46, df=1, p<0.02), and to have higher baseline negative symptom burden (31.0±15.0 versus 22.9±14.0; t=−5.33, df=383, p<0.001). Kaplan-Meier time-to-disengagement analysis comparing participants who were vocationally inactive and vocationally active at baseline found no statistically significant difference in their 2-year disengagement rates (Figure 1).

Sustained Versus Transient Vocational Inactivity

Of the 154 participants who were vocationally inactive at baseline, month 12 vocational status data were available for 125. Of these, 77 (62%) participants were classified as vocationally inactive on a sustained basis (i.e., had worked or been in school for less than half of their first year in treatment) and 48 (38%) as transiently vocationally inactive (i.e., had worked or been in school for more than half of their first year in treatment). Comparing groups with transient and sustained vocational inactivity on baseline demographic and clinical characteristics (Table 1), the only statistically significant difference was that those whose vocationally inactive status (NEET) was sustained were less likely to have completed high school (57% versus 35%; χ^2=5.56, df=1, p<0.02).

The Kaplan-Meier time-to-event analysis comparing the groups with transient and sustained vocational inactivity found that participants who were vocationally inactive (NEET) on a sustained basis were likelier to disengage during the second year of treatment (χ^2=5.44, df=1, p<0.05; Figure 1). This finding remained significant in the Cox proportional hazards regression analysis that included vocational trajectory along with other relevant predictors (HR=8.52, 95% CI=1.54–47.1). No other predictors were statistically significant; however, the association of service disengagement with lack of family contact (HR=3.91, 95% CI=0.98–15.6) and with greater material deprivation (HR=1.03, 95% CI=1.00–1.07) trended toward significance (Table 2).

As a post-hoc test, we considered the possibility that all those who were vocationally inactive at month 12 (i.e., those who were vocationally inactive at baseline and during the first year, as well as those who became vocationally inactive during the first year; N=146) were likelier to disengage in the second year than those who were vocationally active at month 12 (N=200). However, a corresponding Kaplan-Meier time-to-event analysis found no significant difference in their rates of service disengagement.

TABLE 1. Baseline characteristics of participants in a program for early intervention for psychosis, by baseline vocational status and vocational trajectory[a]

	Baseline vocational status					Vocational trajectory				
	Non-NEET (N=240)[b]		NEET (N=154)[c]			Transient NEET (N=48)[d]		Sustained NEET (N=77)[e]		
Characteristic	N	%	N	%	p	N	%	N	%	p
Age (M±SD)	22.5±3.8		22.9±3.3		.237	23.0±3.5		23.0±3.2		.872
Sex					.017					.417
Female	78	33	33	21		13	27	16	21	
Male	162	68	121	79		35	73	61	79	
Visible minority					.582					.328
No (white)	144	63	92	66		26	59	47	68	
Yes (nonwhite)	85	37	48	34		18	41	22	32	
Education					.001					.018
Completed high school	156	69	74	51		30	65	30	43	
Did not complete high school	71	31	70	49		16	35	40	57	
Diagnosis					.062					.255
Affective psychosis	68	29	31	20		35	73	62	82	
Nonaffective psychosis	169	71	122	80		13	27	14	18	
Substance use disorder					.019					.280
No	106	47	47	34		20	44	23	34	
Yes	122	54	91	66		25	56	44	66	
DUP in weeks (log-transformed)					.003					.905
M±SD	1.10±.73		1.34±.74			1.30±.78		1.32±.71		
Median	1.13		1.42			1.32		1.27		
Range	−.85, − 3.00		−.85, −2.66			−.85, −2.41		−.54, −2.66		
Social deprivation (M±SD)	75.2±21.3		76.8±17.8		.456	75.5±18.4		78.2±17.3		.427
Material deprivation (M±SD)	60.4±29.8		64.4±30.9		.214	62.6±35.0		63.8±30.4		.855
Year 1 medication adherence[f]					.545					.947
Adherent	181	79	111	76		38	81	61	81	
Nonadherent	49	21	35	24		9	19	14	19	
Family in contact with treatment team					.695					.520
Yes	194	81	122	79		37	77	63	82	
No	46	19	32	21		11	23	14	18	
Baseline SAPS (M±SD)	34.4±14.8		33.6±14.6		.581	32.4±13.2		34.6±16.3		.454
Baseline SANS (M±SD)	22.9±14.0		31.0±15.0		<.001	28.4±15.0		32.9±15.3		.107

[a] Abbreviations: NEET, not in education, employment, or training; DUP, duration of untreated psychosis; SAPS, Scale for the Assessment of Positive Symptoms; SANS, Scale for the Assessment of Negative Symptoms. Means were compared by t tests (two-tailed significance values reported), and proportions were compared by chi-square tests.
[b] Non-NEET, vocationally active for more than half the year before entering the program. Ns may not add up to 240 because of missing data.
[c] NEET, vocationally inactive for less than half the year before entering the program. Ns may not add up to 154 because of missing data.
[d] Vocationally inactive only at baseline but not at month 12. Ns may not add up to 48 because of missing data.
[e] Vocationally inactive at both baseline and month 12. Ns may not add up to 77 because of missing data.
[f] Considered nonadherent if medication adherent for <75% of the time for at least 6 months during the first year of treatment.

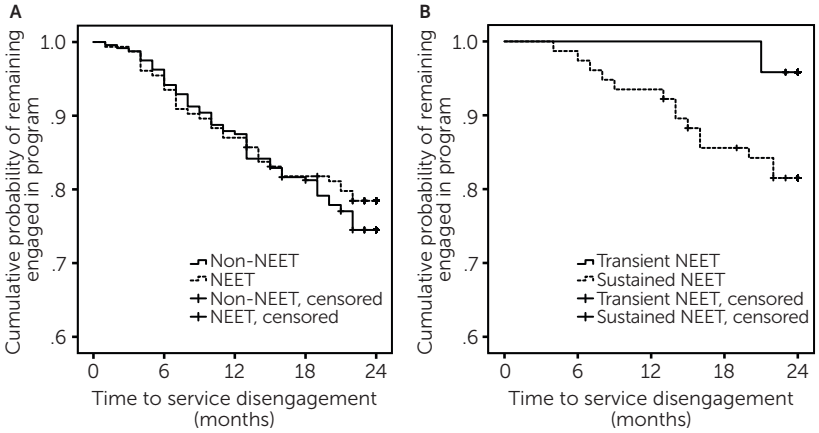
DISCUSSION

To our knowledge, this is the first study to examine the relationship between vocational activity status and disengagement from an early intervention service for psychosis. We found that individuals who were vocationally inactive (NEET) at baseline were at no higher risk of service disengagement over the subsequent 24 months than those who were vocationally active at baseline. However, those who remained vocationally inactive (NEET) throughout their first year in treatment had an eightfold higher risk of disengaging during the second year than those who were vocationally inactive only at baseline. Notably, all those who were vocationally inactive at month 12 were not at a higher risk for service disengagement than all those who were vocationally active at that time point.

It was not initial vocational activity status but the trajectory of work and school functioning early in treatment that was associated with eventual service engagement or disengagement. Our findings suggest that youths who remain in the "NEET trap" are doubly disadvantaged not only in suffering socioeconomic exclusion but also in missing out on the potential benefits of early intervention.

This implies that by assertively connecting young people who are not vocationally active when they enter services to meaningful education, training, or work opportunities within the first year of treatment, we could decrease their

FIGURE 1. Time to service disengagement in the first year of treatment in a program for early intervention for psychosis, by (A) baseline vocational activity status and (B) vocational trajectory[a]



[a] Baseline vocational activity status was categorized as not in education, employment, or training (NEET) (not employed and not in school at all or had been employed or in school for less than 6 out of the past 12 months before entering the program) (N=121) or as non-NEET (had been working or in school for more than half the year before entering the program) (N=179). Vocational trajectory was categorized as transient NEET (vocationally inactive only at baseline but not at month 12) (N=46) or as sustained NEET (vocationally inactive at both baseline and month 12) (N=63). Sample sizes are reported for number of patients remaining in treatment after 24 months and reflect censoring of participants who moved or were transferred during treatment and were not considered to have disengaged.

risk of service disengagement and simultaneously improve their outcomes. A relatively small proportion of patients (30%) in our service receive individual placement and support, for which there is a long waiting list.

Additionally, we had access only to data regarding the number of patients receiving individual placement and support from 2013 onwards, whereas our study cohort goes back to 2003. We were thus unable to examine if receiving this evidence-based supported employment intervention would have positively affected functioning (i.e., fewer individuals remaining vocationally inactive at 12 months) or service engagement trajectories. Nonetheless, given the strength of evidence for individual placement and support (23, 29–31), we recommend that it be offered as a core intervention in early psychosis services. This is also congruent with patients' views that engagement in early psychosis services hinges on receiving help with goal setting and interventions like supported employment (32).

At baseline, youths who were vocationally inactive (NEET) were less likely to have completed high school than those who were vocationally active. Over 60% of those who were vocationally inactive at baseline did not start work or school during the first year of treatment. Notably, those who remained vocationally inactive at 12 months were also less likely to have completed high school than those who were vocationally inactive only at baseline. Their low high school completion rates suggest that those with sustained vocational inactivity may represent a subgroup of patients whose preonset course is characterized by functional decline.

Our earlier work (33) in this same sample indicated that compared with individuals who were vocationally active (not NEET) upon entry, those who were vocationally inactive (NEET) had longer DUPs and longer prodromes and were more likely to remain symptomatic during the period between first psychiatric change and the onset of psychosis. Both these groups had similar educational and social premorbid adjustment scores in childhood and early adolescence. In late adolescence, however, adjustment scores were significantly worse for vocationally inactive youths. Starting in late adolescence, the vocationally inactive group (NEET) thus seems to follow a distinct trajectory of persistent symptoms and functional decline leading up to a psychotic disorder, which, unfortunately, also tends to get detected much later.

Taken together, our earlier work and the present results highlight the need for earlier, broader-spectrum interventions that address youths' educational and occupational concerns along with their mental health needs, potentially reducing the persistence of both mental health symptoms and functional decline, and for educational and occupational supports within early intervention services for psychosis to help individuals emerge from the "NEET trap" and foster their service engagement.

We cannot discount the possibility that those who have persistent difficulty engaging

TABLE 2. Predictors of disengagement from services during the second year of treatment among participants in a program for early intervention for psychosis[a]

Predictor variable	HR	95% CI
Age	.94	.75–1.18
Male (reference: female)	2.98	.40–22.23
Visible minority (reference: white)	1.34	.38–4.81
Substance use disorder (reference: no)	.54	.11–2.62
DUP (log-transformed)	1.53	.65–3.63
Social deprivation	1.01	.97–1.06
Material deprivation	1.03	1.00–1.07
Sustained NEET trajectory (reference: transient)[b]	8.52	1.54–47.14*
Family not in contact with treatment team (reference: in contact with treatment team)	3.91	.98–15.57
Baseline SAPS total	1.05	.99–1.10
Baseline SANS total minus impersistence item	.98	.94–1.02

[a] Abbreviations: HR, hazard ratio; NEET, not in education, employment, or training; DUP, duration of untreated psychosis; SAPS, Scale for the Assessment of Positive Symptoms; SANS, Scale for the Assessment of Negative Symptoms.

[b] Transient NEET, vocationally inactive only at baseline but not at month 12. Sustained NEET, vocationally inactive at both baseline and month 12.

*p<.05.

in school or work may in fact be the ones who also have difficulty engaging in mental health care. In other words, vocational activity status may be an indicator reflecting an intersection of other factors. For instance, at baseline, those who were vocationally inactive were likelier to be male, have poorer educational attainment, have a longer DUP, have more negative symptoms, and have a substance use disorder diagnosis. We found that some factors that underpin vocationally inactive status (gender, substance use disorder, DUP, and negative symptoms) did not contribute to service disengagement. Yet, it is likely that other factors such as childhood or social adversity that we did not assess comprehensively may drive the persistence of both vocational inactivity and service disengagement.

Given our relatively modest sample size, we focused primarily on the functioning and service engagement trajectories of those who entered our service as vocationally inactive. We did not conduct multiple comparisons (e.g., comparing persons who were vocationally inactive only at baseline, only at month 12, and at both time points) or additional follow-up analyses to examine reasons (e.g., response to treatment) for our findings. These may be critical avenues for future research with larger sample sizes. Despite this limitation, our study's strength was that it used a previously unexplored lens—vocational trajectory while in treatment as a predictor of future engagement with services—to further the argument that some patients in early intervention services for psychosis may need vocational services and intensive case management (34).

An additional strength was our conservative approach to classifying individuals as being vocationally inactive. We classified as vocationally inactive at baseline only those who had been out of work or school for 6 months or longer in the year before entering treatment. Thus, our study used a longer timeframe than is commonly used in the NEET literature (15, 20, 35) to include only those facing more persistent vocational problems and not those who were vocationally inactive only immediately prior to entering treatment. Nonetheless, we acknowledge that a limitation of our study was that we are unable to describe the exact causes and onset of vocational inactivity prior to baseline. Our vocationally inactive group (NEET) at baseline may thus include those who had been vocationally inactive for a longer duration, even years, and those who were vocationally inactive for only 6 months or a year prior to entering our service.

Similarly, we classified individuals as being vocationally inactive on a sustained basis at 12 months only if they had not been in work or school for at least 6 months before entering treatment and during the first 12 months of treatment. Thus our group with sustained vocational inactivity did not include individuals who were temporarily out of work or school (e.g., taking a short break). This is in contrast to existing literature that often relies on assessments of vocational functioning at only one point in time (12, 15, 20, 35).

CONCLUSIONS

In addition to being a valuable end in itself, the functional recovery of individuals with first-episode psychosis may also contribute to their service engagement and therefore deserves additional attention (e.g., through interventions like individual placement and support). It is important to identify factors that prevent even engagement-focused, specialized early intervention services from springing individuals with psychosis from the "NEET trap." Further quantitative and qualitative research is needed to elucidate what individuals who are vocationally inactive (NEET) expect from mental health services and why they engage in and disengage from early intervention services. Such work could especially help to sustain the service engagement of those individuals who do not resume or start work or school in the first year, giving them the benefit of early intervention for a longer period and thereby the possibility of making clinical and functional gains later in the course of treatment.

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