

## Structured activity and multiple group memberships as mechanisms of increased depression among young people not in employment, education or training

Article (Accepted Version)

Berry, Clio, Easterbrook, Matthew J, Empson, Liza and Fowler, David (2019) Structured activity and multiple group memberships as mechanisms of increased depression among young people not in employment, education or training. *Early Intervention in Psychiatry*. ISSN 1751-7885

This version is available from Sussex Research Online: <http://sro.sussex.ac.uk/id/eprint/82184/>

This document is made available in accordance with publisher policies and may differ from the published version or from the version of record. If you wish to cite this item you are advised to consult the publisher's version. Please see the URL above for details on accessing the published version.

### **Copyright and reuse:**

Sussex Research Online is a digital repository of the research output of the University.

Copyright and all moral rights to the version of the paper presented here belong to the individual author(s) and/or other copyright owners. To the extent reasonable and practicable, the material made available in SRO has been checked for eligibility before being made available.

Copies of full text items generally can be reproduced, displayed or performed and given to third parties in any format or medium for personal research or study, educational, or not-for-profit purposes without prior permission or charge, provided that the authors, title and full bibliographic details are credited, a hyperlink and/or URL is given for the original metadata page and the content is not changed in any way.

**Structured activity and multiple group memberships as mechanisms of increased depression  
among young people Not in Employment, Education or Training.**

**Authors:**

**Dr Clio Berry (corresponding)<sup>1, 2</sup>**

**Dr Matthew J. Easterbrook<sup>1</sup>**

**Liza Empson<sup>1</sup>**

**Professor David Fowler<sup>1</sup>**

<sup>1</sup>School of Psychology, University of Sussex, Falmer, Brighton, BN1 9QH.

<sup>2</sup>Research & Development, Sussex Partnership NHS Foundation Trust, Sussex Education Centre,  
Nevill Avenue, Hove, BN3 7HZ.

**Correspondence to:**

Dr Clio Berry,

Research & Development,

Sussex Education Centre,

Millview Hospital,

Nevill Avenue,

Hove,

BN3 7HY.

Email: [c.berry@sussex.ac.uk](mailto:c.berry@sussex.ac.uk)

Tel: 0300 304 0088

ORCID: 0000-0003-1164-9836

## Abstract

**Aims:** Young people Not in Employment, Education and Training (NEET) are at increased risk of depression, yet mechanisms of this association are poorly understood. We hypothesised that being NEET has both behavioural and social identity consequences and that reductions in structured activity and multiple group memberships underlie increased depression in this group. Our purpose was to assess first whether depression was greater for NEET compared to non-NEET young people from the same geographical locality, and secondly, whether a loss of structured activity leading to a reduction in multiple group memberships explains the NEET-depression association.

**Methods:** The present study was a cross-sectional between-groups design using convenience sampling. Measures of depression, structured activity and multiple group memberships were obtained from 45 'NEET' young people and 190 university students (Non-'NEET').

**Results:** The NEET group reported significantly more depression symptoms compared to the Non-NEET student control group. A path model specifying NEET status as a predictor of depression, with this association mediated by a reduction in structured activity and fewer multiple group memberships (standardised indirect= 0.03, unstandardised indirect= 0.62,  $p = .052$ , 95% Bias Corrected CIs [0.21; 1.44]), provided excellent fit to our data  $\chi^2(3) = 0.26$ ,  $p = .968$ , CFI= 1.00, RMSEA < .01, SRMR= .01, AIC= 2,792.75, BIC= 2,818.20).

**Conclusions:** Our findings suggest depression is elevated amongst NEET young people compared to Non-NEET students from the same locality. The association between NEET status and depression was partially mediated by reduced structured activity and its association with reduced multiple group memberships. Although cross-sectional, our findings suggest social interventions may be a key resource in ameliorating depression amongst NEET young people; through preserving engagement in structured activity and the wellbeing benefits derived from arising multiple group memberships.

**Keywords:** NEET; Time use; Social identity; Group memberships; Depression.

## Author contributions

CB, ME and DF designed the study, with contributions from LE. CB supervised the data collection. LE was involved in the data collection. CB and ME analysed the data and wrote the paper. All authors approved the final version.

## Introduction

Adolescence to young adulthood represents a vulnerable period for developing mental health problems; with the peak onset of anxiety, depression and psychosis between ages 15-25 years (Kessler et al., 2007, 2005; Kim-Cohen et al., 2003). Eleven percent (800,000) of UK 16-24 year olds are NEET; Not in Employment, Education or Training (Office for National Statistics, 2017), which likely compounds the mental health vulnerability during this age period. Indeed, being NEET is associated with an increased risk of mental health problems (Goldman-Mellor et al., 2016; O'Dea et al., 2014; Sellström, Bremberg, & O'campo, 2011), and 40% of young people reporting mental health problems which they perceive are linked to unemployment (Prince's Trust, 2013).

A study comparing 696 NEET and non-NEET young people found that depression—which was elevated in the NEET group—was the mental health problem most strongly associated with being NEET (O'Dea et al., 2014). Furthermore, pre-existing factors do not appear to explain increased depression amongst NEETs; in the E-Risk longitudinal cohort, the concurrent SCID-IV rate of depression remained significantly greater in the NEET group at age 18 years when controlling for prior mental health problems (Attention Deficit and Hyperactivity Disorder and Conduct Disorder age 5-12 years, depression, anxiety and substance use age 12, and suicidality age 12-18), childhood socioeconomic status (age 5-12) and IQ age 5 (Goldman-Mellor et al., 2016). In a cohort of young Mexican people, NEET status aged 12-17 years predicted increased risk of new incident mood disorders and suicidality at 19-26 years (Gutiérrez-García, Benjet, Borges, Méndez Ríos, & Medina-Mora, 2017). Furthermore, continued economic inactivity is associated with greater depression, self-harm and hospitalisation (Sellström et al., 2011), and longer unemployment in youth predicts longer-lasting episodes of depression 20 years later (Bell & Blanchflower, 2011).

Social disability is present before the onset of complex mental health problems (Cross, Scott, & Hickie, 2017; Fowler et al., 2010), and its co-occurrence with—even sub-threshold— affective symptoms increases risk of transition to enduring mental health problems (Cross et al., 2017). Social disability is defined as limited time spent in structured activity, including paid and voluntary employment, education, housework, childcare, sports and leisure (Fowler et al., 2017). Under 30

weekly hours of structured activity represents a clinically meaningful cut-off for social disability, with less than 15 hours per week representing severe social disability (Hodgekins et al., 2015). The ability to 'fill a day' with varied activities is linked to reduced depression and anxiety during unemployment (McLean, Carmona, Francis, Wohlgemuth, & Mulvihill, 2005). Thus, a loss of structured activity could explain increased depression among NEET young people.

One reason why structured activities could benefit mental health is through providing opportunities to form or join social groups. The social identity approach to health suggests group memberships benefit health and wellbeing by furnishing people with *social identities* that connect them to others, provide meaning and structure to social relationships, and satisfy important psychological needs (Greenaway, Cruwys, Haslam, & Jetten, 2016; Jetten, Haslam, & Haslam, 2012; Sani et al., 2015). A greater number of important group memberships—and thus a greater number of subjectively important social identities—provides a wider range of psychological resources people can draw from, and is associated with increased wellbeing (Cruwys et al., 2013).

Empirical research suggests a greater number of group memberships (used as a proxy for the number of psychologically important social identities) protects against depression among clinical and non-clinical populations (Cruwys et al., 2013; Cruwys, Haslam, Dingle, Haslam, & Jetten, 2014; Cruwys, South, Greenaway, & Haslam, 2015), and longitudinal or experimentally-induced decreases in group memberships increase depression symptoms (Greenaway et al., 2016). Amongst young people experiencing social isolation and affective problems—problems akin to those faced by NEETs—a manualised five-module Groups 4 Health (G4H; Haslam, Cruwys, & Haslam, 2014) intervention has been found to improve mental health and social connectedness six months later through the mechanism of increased group memberships.

We suggest that NEET young people engage in few structured activities, and thus have reduced opportunities to establish or maintain group memberships, leading to increased depression (Cruwys et al., 2014). We hypothesised that depression symptoms would be elevated in NEET, compared to non-NEET, young people (H1). We also hypothesised that elevated depression symptoms would be mediated by a loss of structured activity leading to a reduction in multiple group memberships (H2).

With cross-sectional data, path modelling precludes making causal conclusions, but does facilitate a comparative test of fit for two opposing directional models with estimation of direct and indirect effects. We hypothesised that the mediation model specified in H2 would better fit the data compared to a reverse model in which the positions of the two putative mediators were reversed.

### **Methods**

#### *Participants.*

A convenience sample was recruited from the city of Brighton and Hove, UK. NEET participants were referred by their NEET service practitioner or directly approached by a student researcher at a NEET drop-in service. Non-NEET participants were approached via email or in-person on a local university campus, including emails to 'study swap' initiatives, poster advertisement materials within the university campus, and through presentations to student lectures. The two participant groups were matched in geographical location and the age inclusion criterion (16-25 years).

#### *Design and Procedure.*

The present study was a cross-sectional between-groups design. Assessments occurred in a quiet university or youth service location over one or two sessions at participant preference. Time use was captured using a semi-structured interview on which student researchers—trained by the first author—achieved excellent inter-rater reliability (ICC= .97). Weekly calculations were also cross-checked using an expert-developed calculator. All other measures were standardised questionnaires; either self-administered or verbally-administered by the student researcher at participant preference.

#### *Measures.*

*NEET.* All but one NEET participant was recruited from a service only accessible to current NEETs. Self-reported status was obtained at consent and in all cases matched the correct sample subgroup.

*Time use.* Hours per week in structured activity were captured with the short Office for National Statistics Time Use Survey (TUS;(Short, 2006); a semi-structured interview capturing time spent in paid employment (including casual employment), education (including informal and practical education and training e.g. music and driving lessons), formal voluntary employment and informal caregiving, childcare, housework, sports (within and outside of the home) and structured leisure activities (e.g. going to the cinema and heritage sites). Time spent in these activities is recorded for the past month and averaged into weekly hours. The shortened TUS has been validated in clinical and non-clinical populations (Hodgekins, et al., 2015).

*Multiple group membership.* Multiple group memberships was captured using a 4-item self-report scale derived from the Exeter Identity Transition Scale (EXITS; Haslam et al., 2008), a measure often used as a proxy for the number of psychologically important social identities an individual possesses. Participants were asked to rate the items (e.g. 'I belong to lots of different groups') in relation to their 'in-person' social groups, from 1= Strongly disagree to 7= Strongly agree. The 4-item sum total score was used ( $\alpha = .88$ ).

*Depression.* Symptoms of depression over the past two weeks were measured using the self-report Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996) which is regarded as an internally consistent and valid measure (typical  $\alpha = .92-.94$ ) with good specificity and sensitivity to change (Stockings et al., 2015). The 21 items are scored from 0 to 3, e.g. 'Sadness' is rated as 0= I do not feel sad, 1= I feel sad much of the time, 2= I feel sad all the time, 3= I am so sad or unhappy that I can't stand it. The total score for all items was used ( $\alpha = .92$ ).

*Covariates.* Age and gender were captured using a demographic questionnaire. Participants provided their date of birth—from which age was calculated—and selected their gender from Male, Female, Transgender, Intersex, Other and Prefer not to say.

*Data analytic strategy.*

INSERT FIGURE 1 HERE

Hypotheses were tested using an independent t-test in SPSS 23.0 (IBM Corp, 2015) and path analysis in Mplus 7.04 (Muthén & Muthén, 2015). An independent t-test was used to compare between-group depression scores. Next, a path model was specified in which NEET status predicted Time Use, group memberships (MGM), and depression symptoms (BDI); Time Use predicted MGM and BDI, and MGM predicted BDI. Age and gender were covaried with all variables. This statistically separated and produced estimates for the focal direct effects (representing the relationship between two variables) and indirect effects (the product of paths connecting two variables via intermediary variables). The conceptual and statistical models are shown in figure 1. We first estimated the model using Maximum Likelihood Robust (MLR) estimation to account for non-normal variable distributions, then with bootstrapping (5,000 sample replicates) and Maximum Likelihood (LM) estimation to produce standard errors and bias-corrected confidence intervals for the indirect effects (Preacher & Hayes, 2008). Standardised coefficients were computed based on the outcome variable (depression symptoms) only. Finally, we specified the hypothesised model with just the core indirect effects (similar to the conceptual model in Figure 1a) and compared the fit of that model to an alternative in which the position of the two mediators was reversed. This allowed us to investigate which model better fit the data. Although these data are cross-sectional and thus preclude causal conclusions, path analyses empirically evaluates the model's fit to the data and allows statistical tests of direct and indirect associations.

## Results

INSERT TABLE 1 HERE

Two hundred and thirty-five participants were recruited; 45 NEET and 190 Non-NEET (see Table 1). NEET participants were mainly male (66.7%) and White British (95.6%) with a mean age of 19.70 years ( $SD= 1.99$ ). Non-NEET participants were mainly female (68.9%), White British (69.5%) and 20.81 years on average ( $SD= 1.39$ ). Descriptive characteristics and bivariate correlations are shown in Table 2. An independent t-test suggested significantly greater depression symptoms amongst



NEET young people ( $BDI$ ;  $M= 17.20$ ,  $SD= 12.60$ ) than non-NEETs ( $M=11.58$ ,  $SD= 8.73$ ). The mean difference, 5.61, 95% CIs [1.46, 9.77], was significant,  $t(48.80)= 2.71$ ,  $p= .009$ ) and a medium effect size,  $d= .52$ .

INSERT TABLE 2 HERE

The specified mediation model is shown in Figure 2. NEET status was strongly associated with decreased Time Use;  $\beta= -0.33$ ,  $b= -16.55$ ,  $p< .001$ ; 95% CIs [-23.71; -9.59]. NEET status was not significantly associated with MGM,  $\beta= -0.08$ ,  $b= -1.24$ ,  $p= .420$ ; 95% CIs [-4.07; 1.40] but was significantly associated with higher BDI scores  $\beta= 0.21$ ,  $b= 5.11$ ,  $p= .01$ ; 95% CIs [1.60; 8.47]. Time use was significantly associated with higher MGM scores,  $\beta= 0.25$ ,  $b= 0.08$ ,  $p= .004$ ; 95% CIs [0.03; 0.12], but not BDI,  $\beta= 0.10$ ,  $b= 0.05$ ,  $p= .161$ ; 95% CIs [-0.01; 0.11]. Higher MGM scores were significantly associated with lower BDI scores,  $\beta= -0.30$ ,  $b= -0.50$ ,  $p= .002$ ; 95% CIs [-0.78; -0.22]. Finally, there was a fairly small indirect effect from NEET status to higher BDI via decreased Time Use and higher MGM scores; standardised indirect= 0.03, unstandardised indirect= 0.62,  $p= .052$ , 95% Bias Corrected CIs [0.21; 1.44]. Notably, the 95% confidence intervals around the point estimate of the indirect effect do not contain zero suggesting this effect is robust. The model explains 13.5% of the variance in BDI, 10.6% in Time Use, and 8.5% in MGM scores.

INSERT FIGURE 2 HERE

We next compared the fit of a reduced version of our theoretical model to an alternative reversed-mediator model. We first specified a reduced theoretical model with only the indirect pathway from NEET to Time Use to MGM to BDI and using listwise deletion. The model provided excellent fit to the data,  $\chi^2(3)= 0.26$ ,  $p= .968$ , CFI= 1.00, RMSEA< .01, SRMR= .01, AIC= 2,792.75, BIC= 2,818.20. We then specified an alternative model containing only the indirect pathway from NEET to MGM to Time Use to BDI. This model provided poor fit to the data  $\chi^2(3)= 21.83$ ,  $p< .001$ , CFI= .298, RMSEA= .22, SRMR= .11, AIC= 2,818.41, BIC= 2,843.86. Furthermore, the AIC and BIC comparative fit indices were lower—indicating a better fit to the data—for our theoretical model than for the alternative model ( $\Delta AIC= 25.66$ ,  $\Delta BIC= 25.66$ ).

## Discussion

We found that depression symptoms, as we hypothesised and in line with previous studies (Goldman-Mellor et al., 2016; O'Dea et al., 2014; Sellström et al., 2011), are significantly elevated amongst NEET young people. Our study provides additional novel evidence of greater depression symptoms amongst NEETs compared to an age and geographical location-matched control group who are engaged in constructive economic activity. Despite high variability in depression scores within both subsamples, the mean 5-point group difference is clinically meaningful; the mean for non-NEETs lies within the 'minimal' range whereas the NEET group average a mild depression score (Beck et al., 1996). Mild depression is associated with reduced academic performance (DeRoma, Leach, & Leverett, 2009), cardiovascular risk, reduced sleep quality and reduced quality of life (Okajima et al., 2015). Furthermore, even mild depression in adolescence with co-present emergent social decline increases risk of transition to serious mental health problems and persistent social disability (Cross et al., 2017; Kessler et al., 2005, 2007; van Os, 2013).

We also found—in accordance with our second hypothesis—that our data suggest that the link between NEET status and depression symptoms is mediated by structured activity and multiple group memberships. These associations did not alter when covarying age and gender. Our findings are in keeping with the premise that NEET mental health is influenced by a loss of daily structure (Breslau, Miller, Chung, & Schweitzer, 2011; Fergusson, John Horwood, & Woodward, 2001; Kantomaa, Tammelin, Ebeling, & Taanila, 2008; Rethon, Goodwin, & Stansfeld, 2012), with structured activity hypothesised to mitigate negative mental health outcomes (Ryan & Deci, 2000). Our findings add to the body of work demonstrating that multiple groups memberships protect against depression symptoms (Cruwys et al., 2014), and make the novel suggestion that structured activity affords group memberships. This hypothesised model fit our data better than an alternative reversed-mediator model, in which group membership predicts depression through structured activity. The indirect effect from NEET status to depression through time use to group memberships—in absence of a significant direct association between NEET status and group memberships—suggests group memberships might be more strongly associated with actual time use than NEET status per se. Our findings are

consistent with clinical research positing low structured activity as a risk factor for the emergence of serious mental health problems (Fowler et al., 2017) and suggest that structured activities can scaffold protective social identities.

The lack of a direct association between structured activity and depression is surprising. It could be that different types of structured activity are differentially associated with depression (Glass & Fujimoto, 1994); perhaps precisely because some structured activities better facilitate group memberships. This is in keeping with studies involving older adults which suggest that organised group—but not individual—activities correlate with increased health and wellbeing (Gleibs, Haslam, Haslam, & Jones, 2011) and group—but not interpersonal—engagements prospectively predict cognitive health (Haslam, Cruwys, Haslam, Dingle, & Chang, 2016). Future research could focus on identifying which structured activities confer most benefits in reducing depression and promoting group memberships. The lack of a direct association between structured activity and depression nevertheless lends credence to our theoretical model of depression arising via a complex process involving both behavioural activity and social identity-focused consequences of NEET status.

### **Limitations**

Our cross-sectional design limits conclusions regarding the direction or causal nature of associations between variables in our model; as is often the case when studying hard-to-reach populations. We did however compare the fit to the data of two directional alternatives (Kline, 2015), which lent some support to our theoretical model over an alternative. Nevertheless, future longitudinal and experimental research is best placed to address questions of directionality amongst these variables. Another limitation is our use of the EXITS MGM measure (Haslam et al., 2008) as a proxy for the number of psychologically important social identities individuals possess. Research suggests that only groups one subjectively identifies with are related to wellbeing and health (e.g. Sani, Madhok, Norbury, Dugard, & Wakefield, 2015). Thus future research should more comprehensively measure the psychological importance of groups through techniques like social identity mapping (Cruwys et al., 2016).

Our study is also limited by not capturing participants' prior educational attainment; for this is linked to NEET status (O'Dea et al., 2014) and depression (Steptoe, Tsuda, Tanaka, & Wardle, 2007). Nevertheless, prior research suggests the NEET-depression association is independent of prior family and neighbourhood socioeconomic status (SES), childhood IQ and reading skill at age 12 (Goldman-Mellor et al., 2016). Compared to SES—which is closely linked with educational attainment—group identification has been found to be more strongly associated with psychological distress (Cientanni et al., 2017). Therefore, we suggest the impact of educational attainment on our findings would likely be limited. The unequal representation of NEET versus non-NEET participants within our sample is a further limitation. Recruitment of NEET young people is challenging (Russell, 2013) hence our small NEET subsample size. The present small sample size may have precluded observation of small direct effects (Rucker, Preacher, Tormala, & Petty, 1986). Furthermore, the gender imbalance in our NEET sample being primarily male and our student sample predominantly female may have led to an underestimation of the between-group difference in depression. Depression tends to be more common in women, especially those aged 14 to 25 years (Albert, 2015) and the NEET population is now fairly balanced between males and females (Powell, 2018), thus in actuality, average levels of depression amongst NEETs are likely to be greater and average levels amongst students may be lesser than observed in the current samples. Additionally, our NEET sample was recruited from youth and youth employability service drop-ins and thus are potentially 'economically active', i.e. preparing for or actively seeking EET activities. National data suggest 41% of NEET young people are economically active, with 59% economically inactive; not available or not looking for work, or both (Office for National Statistics, 2017). Thus, our sample may not reflect the latter group. As continuing economic inactivity is itself a risk factor for depression (Sellström et al., 2011), future work should seek to explore profiles of NEET subgroups and cross-validate the presently tested pathway to depression. Within a complex clinical population, trajectories of persistent social disability and profiles of individuals most at risk have been elucidated (Hodgekins, et al., 2015). Replication of this methodology within a large NEET sample would facilitate earlier identification of young people at particular risk of persistent economic inactivity and emergence of depression.

### **Conclusions and implications**

The current findings suggest that NEET young people are vulnerable to experiencing depression through a loss of time spent in structured activity and a reduction in their perceived multiple group memberships. Our findings are in keeping with the need suggested elsewhere to explore interventions which target not only constructive economic activity, but also psychological wellbeing and self-beliefs; which may be influenced by NEET status and also compound existing social disability (Oliver et al., 2014). Social Recovery Therapy (SRT; Fowler et al., 2017) focuses on enhancing the time spent in structured activity; including but not limited to EET activities. Thus interventions such as SRT and G4H (Haslam et al., 2016) could be effective at mitigating social disability and mental health problems by facilitating group memberships among NEETs. In conclusion, our findings are in keeping with the premise that impoverished social worlds underlie NEET vulnerabilities and thus *social* interventions could be a key resource to enhance their social inclusion and mental health.

### **Ethical standards**

Ethical approval for the study was provided by the local university ethics committee (Reference ER/CB321/7). Participants provided written informed consent before commencing research procedures.

### **Conflict of interest**

The authors declare that they have no conflict of interest.

### **Acknowledgements**

We are extremely grateful to the following research students for all their efforts in collecting data used in this study; Ross Robinson, Amy Howes, Sadie Rodell, Danielle Smith, Frances Yelf, Robin Goldthorpe, Emogen Campbell, Amy Goodwill, Maud Leese, Poppy Gardiner and Bethan Lawrence-Matthews. We are also very thankful to the Brighton Youth Employability Service, notably Kathryn Strange, Dean Coussens and Elle Dyson, for all the support and help provided to us. We also would like to thank the Brighton Youth Centre for their support. We thank Sophie Parker for developing the Time Use calculator.

## References

- Albert, P. R. (2015). Why is depression more prevalent in women? *Journal of Psychiatry & Neuroscience : JPN*, *40*(4), 219–221. <https://doi.org/10.1503/JPN.150205>
- Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Beck Depression Inventory-II (BDI-II)*. San Antonio, TX: Psychological Corporation. Retrieved from <http://blog.naver.com/PostView.nhn?blogId=mistyeyed73&logNo=220427762670>
- Bell, D. N. F., & Blanchflower, D. G. (2011). Youth underemployment in the UK in the Great Recession. *National Institute Economic Review*, *215*, R23–R33. <https://doi.org/https://doi.org/10.1177/0027950111401141>
- Breslau, J., Miller, E., Chung, W.-J. J., & Schweitzer, J. B. (2011). Childhood and adolescent onset psychiatric disorders, substance use, and failure to graduate high school on time. *Journal of Psychiatric Research*, *45*(3), 295–301. <https://doi.org/10.1016/J.JPSYCHIRES.2010.06.014>
- Cientanni, F., Power, K., Sani, F., Wright, C., Baty, F., Hustings, K., ... Tanner, G. (2017). Comparing social group identifications and socioeconomic deprivation as predictors of psychological distress: Evidence from a Scottish primary care sample. *British Journal of Social Psychology*, *56*(4), 705–722. <https://doi.org/10.1111/bjso.12210>
- Cross, S. P. M., Scott, J., & Hickie, I. B. (2017). Predicting early transition from sub-syndromal presentations to major mental disorders. *British Journal of Psychiatry Open*, *3*(5), 223–227. <https://doi.org/10.1192/bjpo.bp.117.004721>
- Cruwys, T., Dingle, G. A., Haslam, C., Haslam, S. A., Jetten, J., & Morton, T. A. (2013). Social group memberships protect against future depression, alleviate depression symptoms and prevent depression relapse. *Social Science & Medicine*, *98*(98), 179–186. <https://doi.org/10.1016/j.socscimed.2013.09.013>
- Cruwys, T., Haslam, S. A., Dingle, G. A., Haslam, C., & Jetten, J. (2014). Depression and social identity. *Personality and Social Psychology Review*, *18*(3), 215–238. <https://doi.org/10.1177/1088868314523839>
- Cruwys, T., South, E. I., Greenaway, K. H., & Haslam, S. A. (2015). Social identity reduces depression by fostering positive attributions. *Social Psychological and Personality Science*, *6*(1), 65–74. <https://doi.org/10.1177/1948550614543309>

- Cruwys, T., Steffens, N. K., Haslam, S. A., Haslam, C., Jetten, J., & Dingle, G. A. (2016). Social Identity Mapping: A procedure for visual representation and assessment of subjective multiple group memberships. *British Journal of Social Psychology*, *55*(4), 613–642.  
<https://doi.org/10.1111/bjso.12155>
- DeRoma, V. M., Leach, J. B., & Leverett, J. P. (2009). The relationship between depression and college academic performance. *College Student Journal*, *43*(2), 325–335. Retrieved from <http://go.galegroup.com/ps/anonymous?id=GALE%7CA201608594&sid=googleScholar&v=2.1&it=r&linkaccess=fulltext&issn=01463934&p=AONE&sw=w&authCount=1&isAnonymousEntry=true>
- Fergusson, D. M., John Horwood, L., & Woodward, L. J. (2001). Unemployment and psychosocial adjustment in young adults: causation or selection? *Social Science & Medicine*, *53*(3), 305–320.  
[https://doi.org/https://doi.org/10.1016/S0277-9536\(00\)00344-0](https://doi.org/https://doi.org/10.1016/S0277-9536(00)00344-0)
- Fowler, D., French, P., Banerjee, R., Barton, G., Berry, C., Byrne, R., ... Hodgekins, J. (2017). Prevention and treatment of long-term social disability amongst young people with emerging severe mental illness with social recovery therapy (The PRODIGY Trial): study protocol for a randomised controlled trial. *Trials*, *18*(1), 315. <https://doi.org/10.1186/s13063-017-2062-9>
- Fowler, D. G., Hodgekins, J., Arena, K., Turner, R., Lower, R., Wheeler, K., ... Wilson, J. (2010). Early detection and psychosocial intervention for young people who are at risk of developing long term socially disabling severe mental illness: should we give equal priority to functional recovery and complex emotional dysfunction as to psychotic symptom. *Clinical Neuropsychiatry*, *7*(2), 63–72. Retrieved from <http://go.galegroup.com/ps/anonymous?id=GALE%7CA315370787&sid=googleScholar&v=2.1&it=r&linkaccess=fulltext&issn=17244935&p=AONE&sw=w&authCount=1&isAnonymousEntry=true>
- Glass, J., & Fujimoto, T. (1994). Housework, paid work, and depression among husbands and wives. *Journal of Health and Social Behavior*, *35*(2), 179. <https://doi.org/10.2307/2137364>
- Gleibs, I. H., Haslam, C., Haslam, S. A., & Jones, J. M. (2011). Water clubs in residential care: Is it the water or the club that enhances health and well-being? *Psychology & Health*, *26*(10), 1361–1377. <https://doi.org/10.1080/08870446.2010.529140>
- Goldman-Mellor, S., Caspi, A., Arseneault, L., Ajala, N., Ambler, A., Danese, A., ... Moffitt, T. E.

- (2016). Committed to work but vulnerable: Self-perceptions and mental health in NEET 18-year olds from a contemporary British cohort. *Journal of Child Psychology and Psychiatry*, *57*(2), 196–203. <https://doi.org/10.1111/jcpp.12459>
- Greenaway, K. H., Cruwys, T., Haslam, S. A., & Jetten, J. (2016). Social identities promote well-being because they satisfy global psychological needs. *European Journal of Social Psychology*, *46*(3), 294–307. <https://doi.org/10.1002/ejsp.2169>
- Gutiérrez-García, R. A., Benjet, C., Borges, G., Méndez Ríos, E., & Medina-Mora, M. E. (2017). NEET adolescents grown up: Eight-year longitudinal follow-up of education, employment and mental health from adolescence to early adulthood in Mexico City. *European Child & Adolescent Psychiatry*, *26*(12), 1459–1469. <https://doi.org/10.1007/s00787-017-1004-0>
- Haslam, C., Cruwys, T., & Haslam, S. A. (2014). “The we’s have it”: Evidence for the distinctive benefits of group engagement in enhancing cognitive health in aging. *Social Science & Medicine*, *120*(120), 57–66. <https://doi.org/10.1016/j.socscimed.2014.08.037>
- Haslam, C., Cruwys, T., Haslam, S. A., Dingle, G. A., & Chang, M. X.-L. (2016). Groups 4 Health: Evidence that a social-identity intervention that builds and strengthens social group membership improves mental health. *Journal of Affective Disorders*, *194*, 188–195. <https://doi.org/10.1016/J.JAD.2016.01.010>
- Haslam, C., Holme, A., Haslam, S. A., Iyer, A., Jetten, J., & Williams, W. H. (2008). Maintaining group memberships: Social identity continuity predicts well-being after stroke. *Neuropsychological Rehabilitation*, *18*(5–6), 671–691. <https://doi.org/10.1080/09602010701643449>
- Hodgekins, J., Birchwood, M., Christopher, R., Marshall, M., Coker, S., Everard, L., ... Fowler, D. (2015). Investigating trajectories of social recovery in individuals with first-episode psychosis: a latent class growth analysis. *The British Journal of Psychiatry*, *207*(6), 536–543. <https://doi.org/10.1192/bjp.bp.114.153486>
- Hodgekins, J., French, P., Birchwood, M., Mugford, M., Christopher, R., Marshall, M., ... Fowler, D. (2015). Comparing time use in individuals at different stages of psychosis and a non-clinical comparison group. *Schizophrenia Research*, *161*(2–3), 188–193. <https://doi.org/10.1016/j.schres.2014.12.011>
- IBM Corp. (2015). IBM SPSS Statistics for Windows. Armonk, NY.
- Jetten, J., Haslam, C., & Haslam, S. A. (2012). *The social cure: Identity, health and well-being*.



Psychology Press. Retrieved from

[https://books.google.co.uk/books?hl=en&lr=&id=EeB4AgAAQBAJ&oi=fnd&pg=PR3&dq=The+social+cure:+Identity,+health+and+well-being.+&ots=OZ5Su2k0zW&sig=PdBm\\_HBzC4fAcCA3nmnqODFjoDk#v=onepage&q=The+social+cure%3A+Identity%2C+health+and+well-being.&f=false](https://books.google.co.uk/books?hl=en&lr=&id=EeB4AgAAQBAJ&oi=fnd&pg=PR3&dq=The+social+cure:+Identity,+health+and+well-being.+&ots=OZ5Su2k0zW&sig=PdBm_HBzC4fAcCA3nmnqODFjoDk#v=onepage&q=The+social+cure%3A+Identity%2C+health+and+well-being.&f=false)

Kantomaa, M. T., Tammelin, T. H., Ebeling, H. E., & Taanila, A. M. (2008). Emotional and behavioral problems in relation to physical activity in youth. *Medicine and Science in Sports and Exercise*, 40(10), 1749–1756. <https://doi.org/10.1249/MSS.0b013e31817b8e82>

Kessler, R. C., Angermeyer, M., Anthony, J. C., DE Graaf, R., Demyttenaere, K., Gasquet, I., ... Ustün, T. B. (2007). Lifetime prevalence and age-of-onset distributions of mental disorders in the World Health Organization's World Mental Health Survey Initiative. *World Psychiatry: Official Journal of the World Psychiatric Association (WPA)*, 6(3), 168–176. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/18188442>

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey replication. *Archives of General Psychiatry*, 62(6), 593. <https://doi.org/10.1001/archpsyc.62.6.593>

Kim-Cohen, J., Caspi, A., Moffitt, T. E., Harrington, H., Milne, B. J., & Poulton, R. (2003). Prior juvenile diagnoses in adults with mental disorder. *Archives of General Psychiatry*, 60(7), 709. <https://doi.org/10.1001/archpsyc.60.7.709>

Kline, R. B. (2015). The mediation myth. *Basic and Applied Social Psychology*, 37(4), 202–213. <https://doi.org/10.1080/01973533.2015.1049349>

Mclean, C., Carmona, C., Francis, S., Wohlgemuth, C., & Mulvihill, C. (2005). *Worklessness and health—what do we know about the causal relationship? Evidence review*. London: Health Development Agency.

Muthén, L. K., & Muthén, B. (2015). Mplus user's guide. Version 7.04. 1998-2015. Los Angeles, CA: Muthén & Muthén.

O'Dea, B., Glozier, N., Purcell, R., McGorry, P. D., Scott, J., Feilds, K.-L., ... Hickie, I. B. (2014). A cross-sectional exploration of the clinical characteristics of disengaged (NEET) young people in primary mental healthcare. *BMJ Open*, 4(12), e006378. <https://doi.org/10.1136/bmjopen-2014->

006378

- Office for National Statistics. (2017). Young people not in education, employment or training (NEET), UK - Office for National Statistics. Retrieved October 30, 2017, from <https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/unemployment/bulletins/youngpeoplenotineducationemploymentortrainingneet/august2017>
- Okajima, K., Yamanaka, G., Oinuma, S., Kikichi, T., Yamanaka, T., Otsuka, K., & Cornelissen, G. (2015). Even mild depression is associated with among-day blood pressure variability, including masked non-dipping assessed by 7-d/24-h ambulatory blood pressure monitoring. *Clinical and Experimental Hypertension*, 37(5), 426–432. <https://doi.org/10.3109/10641963.2015.1013114>
- Oliver, E. J., Mawn, L., Stain, H. J., Bambra, C. L., Torgerson, C., Oliver, A., & Bridle, C. (2014). Should we ‘hug a hoodie’? Protocol for a systematic review and meta-analysis of interventions with young people not in employment, education or training (so-called NEETs). *Systematic Reviews*, 3(1), 73. <https://doi.org/10.1186/2046-4053-3-73>
- Powell, A. (2018). *NEET: Young people Not in Education, Employment or Training (Briefing Paper, Number SN 06705)*. London.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891. <https://doi.org/10.3758/BRM.40.3.879>
- Prince’s Trust. (2013). Youth Index 2014. London: Prince’s Trust. Retrieved from <http://www.voced.edu.au/content/ngv:60376>
- Rothon, C., Goodwin, L., & Stansfeld, S. (2012). Family social support, community “social capital” and adolescents’ mental health and educational outcomes: a longitudinal study in England. *Social Psychiatry and Psychiatric Epidemiology*, 47(5), 697–709. <https://doi.org/10.1007/s00127-011-0391-7>
- Rucker, D. D., Preacher, K. J., Tormala, Z. L., & Petty, R. E. (1986). Mediation analysis in social psychology: Current practices and new recommendations. *Social and Personality Psychology Compass*, 6(10), 359–371. <https://doi.org/10.1111/j.1751-9004.2011.00355.x>
- Russell, L. (2013). Researching marginalised young people. *Ethnography and Education*, 8(1), 46–60. <https://doi.org/10.1080/17457823.2013.766433>
- Sani, F., Madhok, V., Norbury, M., Dugard, P., & Wakefield, J. R. H. (2015). Greater number of group

identifications is associated with lower odds of being depressed: Evidence from a Scottish community sample. *Social Psychiatry and Psychiatric Epidemiology*, 50(9), 1389–1397. <https://doi.org/10.1007/s00127-015-1076-4>

Sellström, E., Bremberg, S., & O'campo, P. (2011). Yearly incidence of mental disorders in economically inactive young adults. *European Journal of Public Health*, 21(6), 812–814. <https://doi.org/10.1093/eurpub/ckq190>

Short, S. (2006). *Review of the UK 2000 Time Use Survey*. London. Retrieved from [https://scholar.google.co.uk/scholar?cluster=12647302265002400979&hl=en&as\\_sdt=0,5](https://scholar.google.co.uk/scholar?cluster=12647302265002400979&hl=en&as_sdt=0,5)

Stephoe, A., Tsuda, A., Tanaka, Y., & Wardle, J. (2007). Depressive symptoms, socio-economic background, sense of control, and cultural factors in university students from 23 countries. *International Journal of Behavioral Medicine*, 14(2), 97–107. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/17926438>

Stockings, E., Degenhardt, L., Lee, Y. Y., Mihalopoulos, C., Liu, A., Hobbs, M., & Patton, G. (2015). Symptom screening scales for detecting major depressive disorder in children and adolescents: A systematic review and meta-analysis of reliability, validity and diagnostic utility. *Journal of Affective Disorders*, 174, 447–463. <https://doi.org/10.1016/j.jad.2014.11.061>

Table 1. Sample characteristics

	NEET			Non-NEET			Sample		
	N (%)	M (SD)	Range	N (%)	M (SD)	Range	N (%)	M (SD)	Range
Age		19.70 (1.99)	16-25		20.81 (1.39)	18-25		20.61 (1.58)	16-25
Gender									
<i>Female</i>	15 (33.3)			131 (68.9)			88 (37.4)		
<i>Male</i>	30 (66.7)			58 (30.5)			146 (62.1)		
Transgender	-			1(0.5)			-		
Accommodation									
<i>Owner occupied</i>	14 (31.1)			13 (6.8)			27 (11.5)		
<i>Rented (Private Landlord)</i>	12 (26.7)			142 (74.7)			154 (65.5)		
<i>Rented (Local Authority)</i>	12 (26.7)			34 (17.9)			46 (19.6)		
<i>Accommodation with Support</i>	7 (15.6)			1 (0.5)			8 (3.4)		
Ethnicity									
<i>White British</i>	43 (95.6)			132 (69.5)			175 (74.5)		
<i>White Other</i>	1 (2.2)			19 (10.0)			20 (8.5)		

Pathways to depression amongst NEET young people

<i>Irish</i>	-	1 (0.5)	1 (0.4)
<i>Caribbean</i>	1 (2.2)	4 (2.1)	5 (2.1)
<i>African</i>	-	6 (3.2)	6 (2.6)
<i>Mixed</i>	-	4 (2.1)	4 (1.7)
<i>Other Black</i>	-	1 (0.5)	1 (0.4)
<i>background</i>			
<i>White and</i>	-	7 (3.7)	7 (3.0)
<i>Asian</i>			
<i>Other Asian</i>	-	4 (2.1)	4 (1.7)
<i>background</i>			
<i>Chinese</i>	-	3 (1.6)	3 (1.3)
<i>Indian</i>	-	2 (1.1)	2 (0.9)
<i>Pakistani</i>	-	1 (0.5)	1 (0.4)
<i>Bangladeshi</i>	-	2 (1.1)	2 (0.9)
<i>Other Ethnic</i>	-	4 (2.1)	4 (1.7)
<i>group</i>			
Relationship			
status			
<i>Single</i>	39	153	192
	(86.7)	(80.5)	(81.7)
<i>Partner</i>	6 (13.3)	37	43
		(19.5)	(18.3)

---

Pathways to depression amongst NEET young people

Table 2. Descriptive statistics and bivariate correlations

	NEET			Non-NEET			Sample			Sample bivariate correlations		
	N (%)	M (SD)	Range	N (%)	M (SD)	Range	N (%)	M (SD)	Range	Time Use	MGM	BDI
Time spent in structured activity (Time Use)	44 (97.8)	30.76 (24.29)	4.33- 97.96	189 (99.5)	47.22 (17.61)	10.67- 108.55	223 (94.9)	44.12 (20.06)	4.33- 108.55	1		
Multiple group membership (MGM)	21 (46.7)	17.67 (7.19)	4-28	108 (56.8)	19.26 (5.58)	7-28	129 (67.9)	19.03 (5.87)	4-28	.31*** (n= 134)	1	
Depression (BDI)	41 (91.1)	17.20 (12.60)	0-47	186 (97.9)	11.58 (8.73)	0-52	227 (96.6)	12.59 (9.75)	0-52	-.12 <sup>†</sup> (n=230)	-.37*** (n= 130)	1

Notes: Data for multiple group membership were available for a subset of the sample as this measure was a later addition to the battery. \*\*\*p<.001. <sup>†</sup>= marginal (p =0.06).

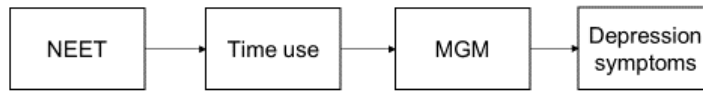


Figure 1a: Conceptual model

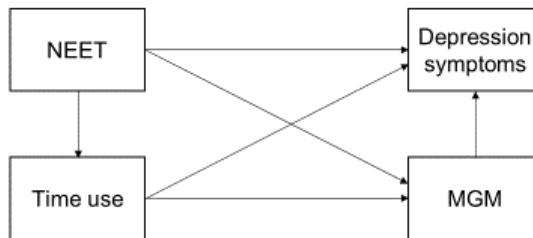


Figure 1b: Statistical model. Note: Age and gender are omitted for visual clarity

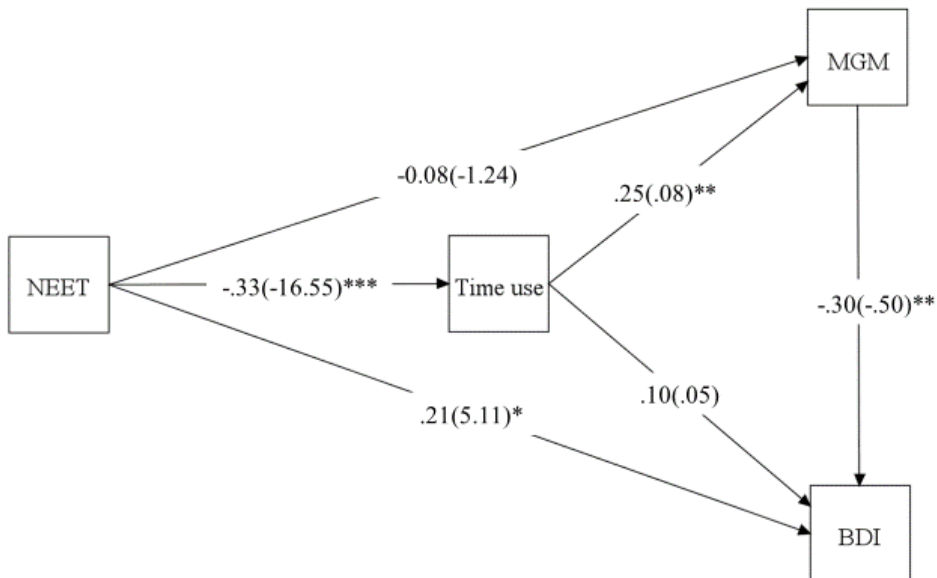


Figure 2: Path model showing the standardized *b* paths, with unstandardized *b* paths in parentheses. Note: \*\*\**p* < .001, \*\**p* < .01, \**p* < .05.