

Mental Health Improves After Transition From Comprehensive School to Vocational Education or Employment in England: A National Cohort Study

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Underpinned by stage-environment fit and job demands–resources theories, this study examined how adolescents' anxiety, depressive symptoms, and positive functioning developed as they transferred from comprehensive school to further education, employment or training, or became NEET (not in education, employment, or training), at age 16 years, in the longitudinal English national cohort study *Next Steps* ($N = 13,342$). Controlling for childhood achievement, socioeconomic status, ethnicity, and gender, we found that NEET adolescents had the largest losses in mental health. This pattern was similar to adolescents staying on at school who had increased anxiety and depression, and decreased positive functioning, after transition. In comparison, adolescents transferring to full-time work, apprenticeships, or vocational college experienced gains in mental health.

Keywords: school-to-work transition, school transition, mental health, anxiety, depression

In England, just over 8 million adolescents (Department for Education, United Kingdom, 2013) are educated in the mainstream state system where they attend compulsory, comprehensive secondary schools from 11/12 to 15/16 years of age, hereon referred to as “comprehensive schools.” Afterward, they enter one of several post-16 (i.e., after 16 years old) destinations where they engage in further education, training or employment or become NEET (not in education, employment, or training). We argue here that the post-16 transition changes the conditions for person–environment interactions that are linked to mental health development, based on stage–environment fit (Eccles & Midgley, 1989) and demands–resources models (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). Using data from the longitudinal English national cohort study *Next Steps*, we operationalized mental health as depression, anxiety, and positive functioning in accordance with factors extracted from the General Health Questionnaire (GHQ; Goldberg, 1969). In line with the American Psychiatric Association (2004), adolescent's depressive symptoms regarded a loss of happiness, motivation, concentration, and self-worth, while their anxiety was marked by feelings of worry and tension. Furthermore, adolescents' positive functioning comprised items tapping

self-efficacy and life satisfaction. Controlling for background factors, we observed how those domains developed as a function of the post-16 transition in England.

Theoretical Perspective

Person–Environment Interaction and Mental Health

Stage–environment fit theory (Eccles & Midgley, 1989) holds the premise that adolescents will flourish when their aptitude and abilities are suited to their proximal environment. In the theory, typical adolescent development (e.g., increased focus on identity) is envisioned as one trajectory, and the changes in environment (e.g., the amount of career counseling across school grades) as another. The fit, or harmony between the trajectories, is represented by the quality of person–environment interactions; for example, when an adolescent is assisted by a careers' guidance counselor to develop their career identity, at a time when they need it and are interested in that activity. This should result in positive outcomes, such as the adolescent choosing school subjects that will help them to achieve their desired career goal. The theory originated out of an observed mismatch between adolescents' developmental needs and the typical features of middle school environment in the United States, which associated with declines in motivation (Eccles et al., 1993).

The job demands–resources model (Demerouti et al., 2001), when applied in the school-to-work context (Salmela-Aro & Upadhyaya, 2014), connects the amount of fit between adolescents and their working environment, to mental health. In this model, work environments (such as school, employment, or training) comprise resources (including support and self-enhancement opportunities) and demands (those aspects of environment that require a “sus-

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tained physical or mental” response; Demerouti et al., 2001, p. 501). Individuals also bring their own set of personal resources to the person–environment interaction, such as self-efficacy, that help them manage the environmental resources and demands (Salmela-Aro & Upadaya, 2014). Anxiety and depression are proposed to ensue when people have inadequate work resources and are too pressurized by work demands, relative to their personal needs and ability to cope.

In the present context, the models provide a theoretical basis for assuming that adolescents interested in vocational pathways will experience poorer quality person–environment interactions at comprehensive school, and better quality person–environment interactions after they transfer to vocational education, work-based training, or employment. This should be accompanied by improved mental health. Our assumptions are based on the following comparison of comprehensive secondary schools, post-16 destinations, and the interests and aptitudes of adolescents later transferring to vocational routes.

Characteristics of School/Transition Environments and Adolescents

In England, the majority of adolescents attend state-funded comprehensive secondary schools from age 11/12 to 16 years (United Kingdom Years 7–11, U.S. Grades 6–10). The curriculum comprises academic and vocational subjects; however, English, mathematics, and science are prioritized as core subjects, over the vocational subjects of information and communication technology, physical education, and citizenship.¹ Adolescents must study all of these and one other subject (e.g., foreign languages) for their end of school examinations in Year 11 (Grade 10). During this time, adolescents are typically streamed by achievement within the same school, for their core subject classes.

After finishing comprehensive school, many adolescents (45%) study for the Advanced Level qualification, which requires a letter Grade C or above, from the range G to A* (one grade above an A), in five subjects including English and mathematics from their end of school examinations (Department for Education, United Kingdom, 2013). They mostly do this in the same school in Years 12 and 13 (Grades 11 and 12), or at independent sixth form (SF) colleges for 16- to 18-year-olds. SF colleges differ from comprehensive schools in that they are private businesses with tuition fees, serving just adolescents in Years 12 and 13. This creates a more homogenous age range. These institutions also offer adolescents more autonomy by allowing several hours of independent study time per day, during which students are not required to be on school premises. In comparison, many comprehensive schools require students to stay on campus and give fewer hours of independent study (Symonds & Hagell, 2011).

The majority of adolescents (55%) transfer out of the school system to vocational education, employment or training, or become NEET (Department for Education, United Kingdom, 2013). Vocational education is mainly provided by further education (FE) colleges that charge tuition fees for certain courses and specialize in subjects such as agriculture, hospitality, and tourism. Adolescents can also learn a trade on the Government’s apprenticeship program, which collaborates with businesses to provide and supervise apprenticeship placements. Other common vocational options are to enter full- or part-time employment. Accordingly, the

post-16 transition marks the first opportunity for adolescents to invest the majority of their time in a vocational career.

Prior work with national data found significant differences between adolescents following the vocational pathways of FE college, apprenticeship, and full- or part-time employment (hereon termed “vocational adolescents”), and those remaining in schools or transferring to SF colleges (“academic adolescents”). Vocational adolescents were more likely to be White, male, have lower school achievement, and be more socially disadvantaged (Ross, 2009, Department for Education, United Kingdom 2013). These characteristics have come about historically, through immigration and the reproduction of class differences. Typically, working class parents have poorer attitudes toward school education and less academic involvement with their children, which contributes to their children experiencing cumulative academic disadvantage and aspiring to low-income jobs (Gorard & Huat See, 2013; Reay, 2011). The greater prevalence of White adolescents in vocational routes is likely because of ethnic minority adolescents having higher educational aspirations and school engagement (Ross, 2009), relating to the positive attitudes of their first-generation immigrant parents (Strand, 2007). Accordingly, ethnic minority adolescents have also been found to surpass their White peers from similar socioeconomic backgrounds in achievement by the end of secondary school (Dustmann, Machin, & Schönberg, 2008).

Change in Mental Health at the Post-16 Transition

As we have outlined, in England, vocational adolescents typically have lower school achievement and socioeconomic status (e.g., Reay, 2011; Ross, 2009). In addition, many aspire to vocational careers at comprehensive school and prefer to take a vocational route (Blenkinsop, McCrone, Wade, & Morris, 2006), despite the government subsidizing 2 further years of secondary schooling. These personal factors might interact with the resources and demands issued by school and post-16 environments through psychological processes such as self-efficacy, competence beliefs, goal orientations and motivation; eventuating a poorer fit at comprehensive school and a better fit after transfer to vocational education, work or training, and hence influencing mental health; as predicted by the stage–environment fit (Eccles & Midgley, 1989) and demands–resources models (Demerouti et al., 2001; Salmela-Aro & Upadaya, 2014).

There are many ways that comprehensive schooling could be a poor fit with vocational adolescents’ psychology, leading to increased depression and reduced positive functioning. As discussed, comprehensive schools prioritize academic core subjects and schedule them more often in the school timetable (Symonds & Hagell, 2011). This presents a possible mismatch with any vocational goals and perceived ability strengths that vocational adolescents might hold, because they find less support for those in the academic environment. From a time use perspective, this could present a situation of having less time to generate positive self-related information because of spending more time in academic learning, which can precipitate lower self-esteem (Markus & Wurf, 1987), higher depressive symptoms (Rosenberg, Schooler, & Schoenbach, 1989), and lower self-efficacy (Marsh & Parker, 1984; Marsh & Seaton, 2013).

¹ <https://www.gov.uk/government/collections/national-curriculum>.

Also experiencing a mismatch between academic subjects and perceived aptitudes and goals could lead vocational adolescents to be less invested in those academic subjects, negatively impacting their motivation and achievement (Wigfield, Eccles, Schiefele, Roeser, & Davis-Kean, 2007). This might result in less positive feedback for achievement, leading vocational adolescents to develop negative self-competencies in those subjects which can associate with elevated depressive symptoms (Roeser, Eccles, & Sameroff, 2000) and emotional exhaustion (Salmela-Aro, Kiuru, & Nurmi, 2008).

Furthermore, as prior data suggest (Department for Education, United Kingdom, 2013; Ross, 2009), it is possible that many vocational adolescents have lower levels of achievement, and are therefore in lower ability classes. Accordingly they might develop lower academic self-concepts than their academic peers, as in many countries, adolescents in lower streams compare themselves negatively to adolescents who are taught in higher ability classes (Chmielewski, Dumont, & Trautwein, 2013) or in the same class (Marsh & Seaton, 2013), within the same school.

Being in low ability groups, or perceiving oneself as less competent than others, might also create feelings of anxiety for vocational adolescents. Being less confident about one's academic abilities associates with increased perceptions of academic threat, which in turn relates to higher levels of stress in educational environments (Chemers, Hu, & Garcia, 2001). However, being a lower achiever can also relate to reduced feelings of school-related strain; for example, if vocational adolescents disengage strategically to reduce their stress (Demerouti et al., 2001; Heckhausen, Wrosch, & Schulz, 2010), which could result in them having lower anxiety than their academic peers. Also, being taught in lower ability classes might be accompanied by less work pressure from teachers (Chmielewski et al., 2013), and easier work that lower ability vocational adolescents do not feel threatened by. Finally, vocational adolescents might feel less anxious than their academic peers, if they do not seek to achieve the high grades in their end-of-school examinations that are required for continuation to Advanced Level education. Accordingly, it is unclear whether vocational adolescents should feel more or less anxious than their academic peers in comprehensive school.

In comparison, their academic counterparts might feel less depressed and more efficacious at school, because they find numerous opportunities for self-concept enhancement while studying the mainly academic curriculum; for example, developing their academic competency beliefs from the environmental stimulus of receiving higher school grades (Gniewosz, Eccles, & Noack, 2012). They might also have more positive perceptions of their abilities, because they compare themselves favorably to lower ability students studying for the same school leaving examinations, which can elicit higher feelings of academic self-concept (Chmielewski et al., 2013; Marsh & Seaton, 2013).

However, academic students might be more invested in their end-of-school examinations than vocational students, because those examinations determine their entry to Advanced Level education. In similar situations of high-stakes testing, academic adolescents have felt elevated strain and anxiety at the end of the school period in Ireland (Banks & Smyth, 2015). Also in Finland, adolescents entering an academic educational track have experienced greater school burnout than their vocational counterparts (Salmela-Aro et al., 2008). Therefore, in the present sample, aca-

demic adolescents might report higher levels of anxiety during comprehensive schooling.

The transition to post-16 destinations presents a change to either a more vocational environment for vocational adolescents, or a pressurized academic environment for academic adolescents. After their transition, vocational adolescents might experience better stage-environment fit (Eccles & Midgley, 1989) and subsequent improvement in mental health (Salmela-Aro & Upadaya, 2014) because they spend more time in vocational learning or activity, such as studying agriculture or working as an apprentice. The environment might better support their career goals and interests, encouraging them to invest more in that activity and obtain positive feedback as they succeed at tasks they believe they are capable of attaining (Brandtstädter, 2009; Dietrich, Parker, & Salmela-Aro, 2012). This in turn could associate with reduced depressive symptoms (Roeser et al., 2000) and a greater sense of self-efficacy.

Furthermore, vocational adolescents might experience less academic pressure in their post-16 destination than their counterparts, because there their main activity might be directed more toward short-term goals such as mastering a specific technique rather than on long-term attainment goals such as examinations. In turn, this could create more time for pursuing mastery related goals, which as an orientation associates with lower anxiety and higher self-esteem (Tuominen-Soini, Salmela-Aro, & Niemivirta, 2008). Becoming employed also returns a wage which many adolescents aspire to (Levine & Hoffner, 2006) and associates with increased mental health (Paul & Moser, 2009) perhaps because it offers opportunities for autonomous functioning in adult society.

In comparison, academic adolescents might experience deteriorations in mental health after transition. There, they move into a more homogenous achievement group, losing the reference base of lower ability adolescents (Chmielewski et al., 2013) who they were previously taught alongside, which can lead to feelings of reduced self-worth and depression (Roeser et al., 2000). Furthermore, being in this high achieving peer group might encourage adolescents to evaluate their self-worth using performance markers, such as receiving a high letter grade for a piece of schoolwork, so that they can differentiate themselves from their peers and reestablish their sense of themselves as a high achiever (Gniewosz et al., 2012). Accordingly, being a highly motivated, engaged student who adheres to performance goals in postcomprehensive academic school is associated with more emotional exhaustion and feelings of personal academic inadequacy (Tuominen-Soini et al., 2008).

As they begin to study for their Advanced Levels, academic adolescents might also intensify their focus on academic achievement and competition. Transferring to an academic school after comprehensive education in Finland has associated with increased school burnout (Salmela-Aro & Upadaya, 2014), which we might also expect in England as those work demands increase, taxing academic adolescents' personal coping and self-regulation resources to a greater level than before. Following transactional models of development, those adolescents might also be prone to feeling stressed about their new environment, owing to their higher levels of anxiety expected at the end of comprehensive school because of their commitment to high stakes testing, because prior stress predicts posttransition stress, even when the influence of environment on stress alters at school transition (Compas, Wagner, Slavina, & Vannatta, 1986).

A special group in the postcomprehensive transition is adolescents who are not in education, employment, or training (hereon referred to as NEET adolescents). NEET adolescents might have poorer mental health at comprehensive school, because adolescents with higher levels of depressive symptoms and anxiety have been less likely to graduate from comprehensive school (McLeod & Fettes, 2007) and in studies with adults, people diagnosed with mental illness have higher chances of becoming unemployed (Baron & Salzer, 2002). One mechanism for this is that lacking personal resources in terms of self-efficacy and having negative emotions can diminish adolescents' ability to manage the complicated process of planning a successful post-16 transition (Spielhofer et al., 2009). Furthermore, once NEET adolescents become unemployed, their mental health might become poorer, as entering unemployment associates with increased anxiety, depression, and a loss of subjective life satisfaction across studies (Paul & Moser, 2009). We account for these potential qualities of NEET adolescents by creating separate hypotheses for them.

The Present Study

Using data from the nationally representative *Next Steps* study, we examined whether adolescents' mental health differed at comprehensive school and changed across transition as a function of their post-16 destination, focusing on whether they transferred to an academic route ("academic adolescents") or vocational route ("vocational adolescents") or became NEET.

(1) Does Mental Health in Comprehensive School Differ Depending on Adolescents' Post-16 Destination?

At comprehensive school, we expected that vocational adolescents (later transferring to FE college, apprenticeships, or employment) had greater depressive symptoms (hereon termed as depression) than academic adolescents (remaining at school or entering SF college; Hypothesis 1a). This presumes that vocational adolescents had less access to school psychological and emotional resources because of a misfit with the academic curriculum, potentially lower levels of personal resources in terms of academic competency beliefs, more negative feedback for their self-esteem, and a lowered likelihood of achieving high grades. Second, we expected that there would be a difference in anxiety levels between vocational and academic adolescents, but did not hypothesize which group would have higher anxiety, because vocational adolescents might feel more or less anxious depending on how invested and stressed they were in their schoolwork and end of school examinations (Hypothesis 1b). Third, we expected that vocational adolescents would have lower positive functioning than academic adolescents (Hypothesis 1c) because of experiencing less support for their skills and interests at comprehensive school. Fourth (Hypothesis 1d), we expected that NEET adolescents would have poorer mental health on each variable given the prospective links between poorer mental health, mental illness and obtaining a post-16 destination.

(2) How Does Mental Health Change Across Transition?

After transition, we expected that depression should decrease for vocational adolescents because of an improved stage-environment

fit and fit between personal and job resources and job demands, but increase for academic adolescents as they transferred to more demanding and academically homogenous environments (Hypothesis 2a). Second, we expected academic adolescents to have increased anxiety as their work demands became greater, whereas vocational adolescents' anxiety should increase or decrease, depending on whether they felt more or less pressured by, and invested in, their new occupation (Hypothesis 2b). Here we did not predict the direction of change of anxiety for vocational adolescents, only the occurrence of change. Third, we expected an increase in vocational adolescents' positive functioning because of greater self-concept enhancement opportunities and more environmental support in the post-16 destination, whereas academic adolescents' positive functioning should decrease (Hypothesis 2c). Fourth, we expected that mental health should become poorer for NEET adolescents (Hypothesis 2d) based on prior research on the transition to unemployment. In our analysis, we controlled for socioeconomic status, ethnicity, gender, and childhood achievement because these are precursors of both mental health and post-16 destinations (e.g., Chowdry, Crawford, & Goodman, 2011; Langton, Collishaw, Goodman, Pickles, & Maughan, 2011).

Method

Participants and Procedure

The *Next Steps* study, also known as the Longitudinal Study of Young People in England (LSYPE; Department for Education, United Kingdom, n.d.), gathered data on the academic and career pathways and aspirations of a nationally representative sample of adolescents in a seven-wave annual survey beginning in 2004 (age 14) and ending in 2010 (age 20). The current study utilized the second (age 15, $N = 13,539$) and fourth waves (age 17, $N = 11,801$) where the General Health Questionnaire (GHQ) was administered, one year pre- and posttransition. We refer to those datasets as Wave 1 (W1) and Wave 2 (W2). The sample changed between those waves with the attrition of 2,094 adolescents and the addition of 356 adolescents. This latter group could not be tested against the original sample as they were lacking data on background characteristics. Compared with retained adolescents, the attrition group had lower socioeconomic status (SES; $t = -9.06$, $df = 2733$, $p < .001$), lower achievement ($t = -11.08$, $df = 2325$, $p < .001$), and were more likely to be White ($\chi^2 = 57.10$, $df = 1$, $p < .001$).

Our final sample utilized only those cases who had mental health data at W1 ($N = 13,342$) or W2 ($N = 11,732$), or both. The total sample size was 13,678 cases. The case wise deletions at W1 ($N = 197$), compared with the final W1 sample, had lower SES ($t = -3.90$, $df = 13315$, $p < .001$), lower achievement ($t = -5.06$, $df = 143$, $p < .001$), and were more likely to be male ($\chi^2 = 10.81$, $df = 1$, $p = .001$). However there were no ethnic differences. Compared with the final W2 sample, the W2 case wise deletions ($N = 69$) had similar SES and ethnicity, but were more likely to be male ($\chi^2 = 7.66$, $df = 1$, $p = .006$) and had lower achievement ($t = -2.16$, $df = 10,651$, $p = .031$). In W2, 11,082 adolescents (81% of the final sample) reported their post-16 destination or whether they were NEET.

Measures

12-item General Health Questionnaire (GHQ). The GHQ was first developed to identify psychiatric illness in general practice patients (Goldberg, 1969) but is now used in epidemiological studies internationally. Participants respond to twelve items on a 4-point Likert scale ranging from 1 (*much more than usual*) to 4 (*much less than usual*). In Next Steps, these items are: "Have you lately" . . . (1) *Been able to concentrate on things?* (2) *Lost much sleep over worry?* (3) *Felt you were playing a useful part in things?* (4) *Felt capable of making decisions about things?* (5) *Felt constantly under strain?* (6) *Felt you couldn't overcome your difficulties?* (7) *Been able to enjoy your normal day to day activities?* (8) *Been able to face up to problems?* (9) *Been feeling unhappy and depressed?* (10) *Been losing confidence in yourself?* (11) *Been thinking of yourself as a worthless person?* (12) *Been feeling reasonably happy, all things considered?*

The 12-item GHQ is often analyzed as a single construct but generally converges into a two- or three-factor solution (Campbell, Walker, & Farrell, 2003). To determine the optimal factor structure in this study, we conducted an exploratory factor analysis (EFA) for each wave using principal axis factoring and direct oblimin rotation, then compared those results to a principal components analysis (PCA) using varimax rotation. The EFA and PCA yielded identical solutions of two, three, and four factors at each wave with similar loadings and explained variance. Hereon we report the EFA results.

Like in prior studies (Campbell et al., 2003) the unrestrained extraction yielded two factors. The three-factor solution split the negative items into depression (9. *depressed*, 10. *no confidence*, 11. *worthless*) and anxiety (2. *no sleep*, 5. *strain*, 6. *cannot overcome difficulties*), while the four factor solution splintered a self-efficacy factor (3. *feel useful*, 4. *feel capable of making decisions*) from the happiness items (e.g., 7. *enjoy activities*, 12. *feel reasonably happy*). Although the loadings for self-efficacy were reasonable (between .526 and .709), the Cronbach's alpha was below .6 at each wave, suggesting a return to the larger positive valence factor. Accordingly, we settled on a three-factor solution of depression, anxiety and positive functioning, where we reversed the items scores for depression and anxiety, so that 1 = *much less than usual*, and 4 = *much more than usual*. The solution explained around 60% of the variance. Cronbach's alphas were at W1: depression = .85, anxiety = .76, positive functioning = .71; and at W2: depression = .83, anxiety = .75, positive functioning = .70.

Post-16 destinations. In W2, adolescents reported their main activity. Responses were coded into the minor groups of (1) school, (2) SF college, (3) FE college, (4) apprenticeship, (5) full-time (FT) work (6) part-time (PT) work, or (7) NEET. Responses of caring full-time for families ($n = 60$) or other ($n = 183$) were omitted because of their small number and occupational ambiguity for the latter category. These first six minor groups were collapsed to create two additional major groups of *academic* (school or SF college: 1 and 2) and *vocational* (those transferring to FE college, apprenticeships, or employment: 3–6).

SES. The *Next Steps* administration used the National Statistics Socioeconomic Status Classification method to code parents' open-ended reports of occupation, supervisory status, and number of employees into eight ordinal categories ranging from higher

managerial and professional occupations (8) to long-term unemployed (1). At the time of the survey, this method was the national standard for coding SES in the United Kingdom.

Gender. Participants' gender was coded as 1 (*female*) and 0 (*male*).

Childhood achievement. The mean of participants' age 11 years scores on standard achievement tests for English, mathematics, and science (level 1 to 5 for each subject) represented childhood achievement.

Ethnicity minority. Responses to a seven-option item were simplified into three ethnic minority groups: Mixed, Asian (Indian, Pakistani, Bangladeshi), and Black (Black Caribbean, Black African). We collapsed those groups because adolescents in the subgroups (e.g., Indian, Pakistani) might have had similar discrimination experiences relating to their physical appearance. Also, India, Pakistan and Bangladesh are core South Asian countries that although are diverse, have many cultural similarities (Bose & Jalal, 2011) that immigrant children might be affected by. Separate binary variables for Asian, Black and Mixed adolescents were created, that compared each ethnic minority (1) to all other adolescents (0).

Data Analysis

We tested our hypotheses using paired samples t tests to ascertain the development of mental health within each major and minor group, and then applied structural equation modeling (SEM) in Mplus version 7.0 to examine the influence of background characteristics and group differences in mental health. In the SEMs, we constructed the measurement model of mental health as three latent variables reflecting depression, anxiety, and positive functioning, in line with the EFA results. Imposing strong measurement invariance across time; that is, setting item loadings and intercepts equal across waves (e.g., Little, 2013), ensured that the latent variables had the same meaning before and after transition, so quantitative change could be interpreted meaningfully.

Next, we ascertained the effects of gender, childhood achievement, SES, and being of Asian, Black, or Mixed ethnicity on mental health at W1 and W2 (Model 1), and on being in a specific post-16 destination compared with all other destinations (Model 2). Here, single models were run for each wave of mental health data, and for individual post-16 destinations, with all predictors entered simultaneously in those models (Tables 3 and 4).

Then, we tested our hypotheses about the mental health development of vocational versus academic groups in a series of autoregressive models. Mental health at W2 was regressed on mental health at W1, thus the W2 scores reflected change in mental health occurring across the transition. Mental health at comprehensive school (W1) and its change (W2) were then regressed on individual post-16 destinations (Model 3). We compared each minor group (e.g., FT work) to the remaining adolescents within the major group (e.g., vocational) to look for within-group differences in the academic or vocational groups, and compared each minor group (e.g., FT work) to the opposing major group (academic) to look at the differences between being in an academic and vocational group. Then we compared NEET adolescents (7) with the vocational and academic major groups. These models also controlled for gender, childhood achievement, SES, and being of Asian, Black, or mixed ethnicity.

Because of computational constraints in models with several categorical variables, we constructed separate models for depression, anxiety, and positive functioning, resulting in a total of 14 models for our hypothesis tests.² Coefficients from these models are shown in Tables 5 and 6.

Models were computed using full information maximum likelihood estimation (FIML) and Monte Carlo integration. FIML accounts for missing data by using all available data points for model estimation. Note that χ^2 -based model fit statistics and standardized coefficients are not available in models with categorical outcome variables (Models 2 and 3). We report the SEM unstandardized regression coefficients (B); and Cohen's *d* effect sizes, calculated using the unstandardized regression coefficients, sample sizes of each post-16 comparison group and the standard deviation of the dependent variable (Fritz, Morris & Richler, 2012). For Model 2 we report odds ratio (OR) effect sizes.

Results

Background Characteristics, Mental Health, and Post-16 Destinations

We first computed correlations for all variables (Table 1), frequency distributions, means and standard deviations (Table 2). After comprehensive school, most adolescents continued in full-time education at school (40%), SF college (12%), or FE college (29%). A minority transferred to an apprenticeship (4%) or entered FT (7%) or PT (3%) work. Five percent became NEET. These percentages fit with other national data (Department for Education, United Kingdom, 2013).

Tables 3 and 4 present the effects of background characteristics on mental health development and post-16 destination. Our findings were that females had worse mental health at school and more negative change in mental health after transition. Females were also slightly more likely to remain on an academic route or engage in vocational education and far fewer became apprentices, entered FT work, or became NEET. There were no effects of gender on PT work.

Higher achievement in childhood was also characteristic of poorer mental health at comprehensive school and more negative mental health growth, especially for anxiety. Higher achievers were more likely to remain at school or transition to SF college, and less likely to transfer to vocational routes including FE college, apprenticeships, FT work and PT work, or become NEET.

Having higher SES did not associate with depression across transition, or positive functioning at W1; however, it weakly corresponded with greater anxiety at comprehensive school and more growth in anxiety, and slightly higher positive functioning at W2. The effects of SES on post-16 destinations were far stronger, with higher SES positively associating with staying on stay on at school, and negatively associating with entering FE college, FT work, or become NEET. SES did not associate with entrance to SF college, PT work, or becoming an apprentice.

Compared with all other adolescents, Asian adolescents had slightly lower depression and higher positive functioning at W1. These effects dissipated at W2 and were replaced by higher levels of anxiety. Asian adolescents were more likely to remain at school or transfer to SF college, and fewer entered vocational routes or

became NEET. Black adolescents also had slightly higher positive functioning at W1 and had higher anxiety and depression at W2. Similar to Asian adolescents, proportionally more Black adolescents remained at school or entered SF college, and were far less likely to engage in FT or PT work, become apprentices, or NEET. However, slightly more Black adolescents transferred to FE college than other adolescents. Adolescents of Mixed ethnicity were different to these two other ethnic groups, by having higher depression and greater anxiety at W1, and poorer mental health after the post-16 transition. Mixed adolescents had a similar profile to other adolescents for entering post-16 destinations, except that they were less likely to enter FT work.

Comprehensive School Mental Health and Post-16 Destinations

As Table 5 shows, after controlling for the different ethnic groups, gender, SES, and prior achievement, as expected, academic adolescents had higher anxiety (Hypothesis 1b) and lower positive functioning than vocational adolescents at W1 (Hypothesis 1c), whereas there were no differences in depression between academic and vocational adolescents (Hypothesis 1a) (Table 5). As expected, NEET adolescents had poorer mental health at W1, with higher depressive symptoms and lower positive functioning than academic and vocational adolescents, and higher anxiety than vocational adolescents (Hypothesis 1d).

Looking at the minor groups, of the vocational adolescents, future FT workers displayed consistent differences to other post-16 groups in mental health at Wave 1. FT workers had higher depressive symptoms and lower positive functioning than both academic and other vocational adolescents. Another difference was that the, future FE college students had lower anxiety than academic adolescents, and lower depression than vocational adolescents. Finally, school students had lower positive functioning than their SF college counterparts. Overall, there were few comprehensive school differences in mental health between the vocational and academic groups.

We further explored the issue of why FT workers reported poorer mental health at W1 than other adolescents, using analysis of variance (ANOVA) to compare their background characteristics with those of the other vocational groups. There were significant differences for gender ($F = 22.749, p < .001$), with FT workers being more likely to be male than FE college students, ($p < .001$), and PT workers ($p = .002$). There were also differences in achievement ($F = 10.459, p < .001$) where FT workers had lower achievement than FE college students ($p < .001$). FT workers were also less likely to be Asian ($F = 12.517, p < .001$), Black ($F = 12.544, p < .001$) or Mixed ($F = 12.575, p < .001$) and were more likely to be White ($F = 9.553, p < .001$) than FE college students (all post hoc p values = $< .001$). Together, these findings demonstrated a general prevalence of risk factors for educational disengagement for FT workers.

² A more fine-grained method of modeling would have been to compare pairs of post-16 destinations (e.g., school vs. apprenticeship). However, this would have required 49 separate models (7×7 models). Not only would this have been cumbersome, but also would have generated large amounts of data that would reveal the same patterns as those elicited by triangulating the comparisons of minor groups with the major groups (academic or vocational).

Table 1
Correlations Between Background Characteristics and Mental Health Variables

| Characteristics | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1. Female | | | | | | | | | | | |
| 2. Socioeconomic status | -.002 | | | | | | | | | | |
| 3. Achievement | .072** | .329** | | | | | | | | | |
| 4. Asian | -.026** | .026* | .026** | | | | | | | | |
| 5. Black | -.022* | .234** | .080** | .289** | | | | | | | |
| 6. Mixed | -.022** | .267** | .122** | .379** | .688** | | | | | | |
| 7. Depression W1 | .207** | .029** | .041** | -.032** | .013 | .038** | | | | | |
| 8. Anxiety W1 | .192** | .078** | .132** | -.025** | -.002 | .014 | .650** | | | | |
| 9. P. functioning W1 | -.152** | -.030** | -.048** | -.006 | -.047** | -.073** | -.498** | -.423** | | | |
| 10. Depression W2 | .200** | .028* | .070** | -.040** | -.018 | -.009 | .402** | .358** | -.230** | | |
| 11. Anxiety W2 | .204** | .103** | .171** | -.035** | -.047** | -.036** | .354** | .422** | -.211** | .640** | |
| 12. P. functioning W2 | -.142** | -.024 | -.099** | .010 | -.016 | -.022* | -.232** | -.211** | .263** | -.555** | -.452** |

Note. Mental health variables measured as the mean value of items. W1 = Wave 1; W2 = Wave 2; P. functioning = positive functioning.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Post-16 Destination and Change in Mental Health

Overall, comparison of the raw means of mental health across the transition showed that mental health increased for most vocational adolescents and decreased for academic and NEET adolescents from W1 to W2 (Table 2). Figure 1 displays these changes in mean value for anxiety, depression and positive functioning, across and within the groups. The SEM comparisons depicted in Table 6 showed that these patterns of development were different between most groups, after controlling for background characteristics.

Our expectations were that depression would decrease for vocational adolescents but increase for academic adolescents (Hypothesis 2a). Using paired samples t tests to estimate the significance of change across time, we found that vocational adolescents (except for PT workers) had decreased depressive symptoms, whereas school students' depressive symptoms increased. Only PT workers and SF college students had stable depressive symptoms which was unexpected. The SEM between-groups comparisons revealed that those trajectories were different between the academic major group and the vocational minor groups of FE college students, apprentices, and FT workers. Within the vocational major group, the decrease in depression was most marked for apprentices.

We further expected an increase in anxiety for academic adolescents but did not predict the direction of growth for vocational adolescents (Hypothesis 2b). Our findings on the raw scores (Table 2) confirmed that anxiety increased for both academic pathways and also for FE college students which was unexpected. However, apprentices, FT and PT workers had stable anxiety, which was unexpected (Hypothesis 2d). The SEMs demonstrated that anxiety development differed between school and SF college students, with school students having a greater increase in anxiety. Anxiety development also differed between the major academic group and the minor vocational groups of FE college students, apprentices, and FT workers. Within the vocational major group, FE college students had different anxiety development to their vocational counterparts.

Third, we presumed that academic adolescents would have less positive functioning across transition, while vocational adolescents would have more positive functioning (Hypothesis 2c). The mean

score changes (Table 2) generally supported our hypothesis. Positive functioning decreased for the major academic group, but increased for the major vocational group. Of the minor groups, positive functioning decreased for school and SF college students, was stable for FE college students and PT workers, and increased for FT workers and apprentices. In the SEMs, those developments in positive functioning were different between the academic and vocational major groups, and between the academic major group and all minor vocational groups.

Finally, we expected that NEET adolescents would have decreases in mental health across the transition (Hypothesis 2d). The t tests confirmed this hypothesis, with NEET adolescents having increased depression and anxiety, and decreased positive functioning. This development was significantly different to the vocational adolescents, and to the academic adolescents; except for that anxiety growth was similar between NEET adolescents, and school and SF college students.

Discussion

This study classified adolescents by which post-16 destination they transferred to after finishing compulsory, comprehensive school in England. It examined whether their mental health, defined as depression, anxiety and positive functioning, differed as a function of this grouping at comprehensive school and after the transition. Using stage-environment fit (Eccles & Midgley, 1989) and job demands-resources models (Demerouti et al., 2001; Salmela-Aro & Upadyaya, 2014), we expected that mental health should be supported by environments that offered adequate resources, manageable demands, and self-enhancement opportunities, and were a good match with adolescents' personal resources such as self-efficacy. Based on those theories, we predicted that vocational adolescents (those transferring to further education, an apprenticeship or employment) would have greater depression and lower positive functioning and a difference in anxiety at comprehensive school compared with academic adolescents (those remaining at school or transferring to SF college). We also predicted that vocational adolescents would have better mental health after transition, compared with academic adolescents. Finally, we expected that

Table 2
Descriptive Statistics

| Variable | Total | (1) School | (2) SFC | (3) FEC | (4) Ap | (5) FTW | (6) PTW | (7) NEET |
|----------------------|-------------------|------------|---------|---------|----------|----------|---------|----------|
| Total | <i>N</i> 13,678 | 4,437 | 1,368 | 3,259 | 424 | 765 | 280 | 571 |
| | % 100 | 40 | 12.3 | 29.3 | 3.8 | 6.9 | 2.5 | 5.1 |
| Female | % 49 | 52.5 | 54.8 | 50.5 | 32.5 | 37.1 | 50 | 41 |
| White | % 69.4 | 66.9 | 58.4 | 68.9 | 85.3 | 93.4 | 86.9 | 80 |
| Asian | % 17.9 | 5.2 | 5.1 | 5.7 | 4.3 | 2.8 | 5.8 | 5.4 |
| Black | % 7.4 | 21.9 | 27.2 | 16.9 | 8.8 | 2.7 | 5.1 | 10.3 |
| Mixed | % 5.4 | 6 | 9.3 | 8.4 | 1.7 | 1.2 | 2.2 | 3.6 |
| Socioeconomic status | <i>M</i> 4.8 | 5.5 | 5.0 | 4.5 | 4.6 | 4.5 | 4.9 | 3.9 |
| | <i>SD</i> 2.3 | 2.2 | 2.4 | 2.3 | 2.1 | 2.0 | 1.9 | 2.1 |
| Achievement | <i>M</i> 4.1 | 4.4 | 4.3 | 3.9 | 3.8 | 3.8 | 3.9 | 3.6 |
| | <i>SD</i> .8 | .6 | .6 | .8 | .8 | .8 | .8 | .8 |
| Depression W1 | <i>M</i> 1.70 | 1.70 | 1.69 | 1.68 | 1.62 | 1.73 | 1.72 | 1.75 |
| | <i>SD</i> .80 | .77 | .75 | .80 | .82 | .86 | .81 | .87 |
| Depression W2 | <i>M</i> 1.68 | 1.72 | 1.69 | 1.65 | 1.47 | 1.59 | 1.68 | 1.87 |
| | <i>SD</i> .78 | .76 | .77 | .77 | .67 | .76 | .82 | .92 |
| Anxiety W1 | <i>M</i> 1.86 | 1.93 | 1.90 | 1.82 | 1.73 | 1.82 | 1.82 | 1.83 |
| | <i>SD</i> .76 | .74 | .74 | .76 | .74 | .79 | .75 | .80 |
| Anxiety W2 | <i>M</i> 1.98 | 2.11 | 2.05 | 1.89 | 1.72 | 1.78 | 1.89 | 1.90 |
| | <i>SD</i> .75 | .74 | .74 | .74 | .69 | .70 | .77 | .79 |
| P. Functioning W1 | <i>M</i> 3.14 | 3.13 | 3.16 | 3.15 | 3.19 | 3.11 | 3.14 | 3.12 |
| | <i>SD</i> .45 | .41 | .42 | .46 | .43 | .50 | .50 | .51 |
| P. Functioning W2 | <i>M</i> 3.13 | 3.11 | 3.13 | 3.17 | 3.25 | 3.20 | 3.08 | 3.01 |
| | <i>SD</i> .45 | .44 | .45 | .44 | .41 | .43 | .45 | .53 |
| Depression W1–W2 | <i>t</i> −1.39 | 2.27* | .29 | −2.20* | −3.63*** | −4.25*** | −.72 | 3.23** |
| | <i>df</i> 10,777 | 4,185 | 1,266 | 2982 | 400 | 711 | 262 | 524 |
| | <i>d</i> .01 | .03 | .00 | .04 | .20 | .17 | .05 | .13 |
| Anxiety W1–W2 | <i>t</i> 14.75*** | 15.42*** | 7.44*** | 4.85*** | −.55 | −1.14 | 1.12 | 1.97* |
| | <i>df</i> 10,835 | 4,198 | 1,271 | 3,004 | 404 | 716 | 261 | 531 |
| | <i>d</i> .15 | .24 | .20 | .09 | .01 | .05 | .09 | .09 |
| Functioning W1–W2 | <i>t</i> −1.41* | −2.81** | −2.38* | 1.20 | 2.51* | 4.19*** | −1.41 | −3.99*** |
| | <i>df</i> 10871 | 4204 | 1280 | 3018 | 408 | 720 | 262 | 531 |
| | <i>d</i> .02 | .05 | .07 | .04 | .14 | .19 | .13 | .21 |

Note. SFC = sixth form college; FEC = further education college; Ap = apprentice; FTW = full-time work; PTW = part-time work; NEET = not in employment, education, or training; W1 = Wave 1; W2 = Wave 2; P. functioning = positive functioning; *d* = Cohen's *d* effect size; school = postcomprehensive school.

* $p < .05$. ** $p < .01$. *** $p < .001$.

NEET adolescents would have poorer mental health than other adolescents at comprehensive school, and after transition.

Comprehensive School Mental Health

As expected, vocational adolescents had a different anxiety level compared with academic adolescents at comprehensive school (Hypothesis 1b). Their anxiety was lower, perhaps because they felt under less pressure to achieve the high grades necessary for continuing on an academic track. However, although we expected greater depression and lower positive functioning for vocational adolescents at comprehensive school (Hypotheses 1a and 1c), this pattern was only true for FT workers. Our post hoc analysis found that FT workers were more likely to be White, male and have lower achievement than many other vocational groups, including FE college students and apprentices. Being an ethnic minority in England has coincided with a more positive aptitude for schooling and better school results than White students, in part because of high academic expectations from parents (Strand, 2007); while being male has associated with lower school enjoyment and a distain for 'emasculative' academic pursuits (Whitehead, 2006). Having low achievement in schools that employ within-school streaming has associated with lower self-concept (Chmielewski et al., 2013); and in prior qualitative research, teachers

have discriminated against children who want to leave school for employment, because those children were perceived as a "lost cause" (Gow & McPherson, 1980). Possibly these are some of the mechanisms by which comprehensive schooling impacted FT workers' mental health.

Our hypothesis that NEET adolescents would have poorer mental health than their vocational and academic peers at comprehensive school (1d) was generally supported, with NEET adolescents having higher depression and lower positive functioning than academic and vocational adolescents, and higher anxiety than vocational adolescents. This could indicate a greater prevalence of anxiety disorders and depression in this subgroup at comprehensive school, as people diagnosed with mental illness have had a higher chance of becoming unemployed (Baron & Salzer, 2002). It could also demonstrate a general lower level of personal resources such as self-efficacy and motivation, and related higher levels of school burnout and apathy, in adolescents who were then unable to obtain a post-16 destination.

Changes in Mental Health in Post-16 Destinations

After transition, apprentices and FT workers had decreased depression (Hypothesis 2a) and increased positive functioning (Hypothesis 2c), relative to academic adolescents as expected,

Table 3
Background Influences on Mental Health

| Variable | Depression W1 | | CI | | Depression W2 | | CI | |
|-------------|-------------------|-----------|----------|----------|-------------------|-----------|----------|----------|
| | <i>b</i> * | <i>SE</i> | Lower 5% | Upper 5% | <i>b</i> * | <i>SE</i> | Lower 5% | Upper 5% |
| Female | .23*** | .01 | .21 | .25 | .22*** | .01 | .20 | .24 |
| Achievement | .03** | .01 | .01 | .06 | .08*** | .01 | .06 | .10 |
| SES | .01 | .01 | -.02 | .03 | .01 | .02 | -.01 | .04 |
| Asian | -.06*** | .01 | -.08 | -.04 | .02 | .01 | .00 | .05 |
| Black | -.02 | .01 | -.04 | .00 | .04* | .01 | .01 | .06 |
| Mixed | .04** | .01 | .02 | .06 | .05*** | .01 | .03 | .08 |
| | Anxiety W1 | | CI | | Anxiety W2 | | CI | |
| | <i>b</i> * | <i>SE</i> | Lower 5% | Upper 5% | <i>b</i> * | <i>SE</i> | Lower 5% | Upper 5% |
| Female | .22*** | .01 | .20 | .24 | .23*** | .01 | .20 | .25 |
| Achievement | .13*** | .01 | .11 | .16 | .18*** | .02 | .16 | .21 |
| SES | .04** | .01 | .02 | .07 | .08*** | .02 | .06 | .11 |
| Asian | .00 | .01 | -.02 | .02 | .10*** | .02 | .08 | .13 |
| Black | .02 | .01 | -.01 | .04 | .03* | .01 | .01 | .05 |
| Mixed | .04** | .01 | .02 | .06 | .05*** | .01 | .03 | .08 |
| | P. Functioning W1 | | CI | | P. Functioning W2 | | CI | |
| | <i>b</i> * | <i>SE</i> | Lower 5% | Upper 5% | <i>b</i> * | <i>SE</i> | Lower 5% | Upper 5% |
| Female | -.20*** | .01 | -.22 | -.18 | -.18*** | .01 | -.20 | -.16 |
| Achievement | -.09*** | .01 | -.11 | -.06 | -.13 | .02 | -.16 | -.11 |
| SES | .01 | .01 | -.02 | .03 | .01*** | .02 | -.02 | .03 |
| Asian | .10*** | .01 | .08 | .13 | .01 | .02 | -.01 | .04 |
| Black | .04** | .01 | .02 | .06 | -.01 | .02 | -.03 | .02 |
| Mixed | -.01 | .01 | -.04 | .01 | -.03* | .02 | -.06 | -.01 |

Note. CI = confidence interval; SES = socioeconomic status; P. functioning = positive functioning. Separate SEM models run for Waves 1 and 2 with mental health measured as latent variables. W1 = Wave 1; Comparative Fit Index (CFI) = .935, Root Mean Square Error of Approximation (RMSEA) = .051, $\chi^2 = 31,472.745$, $df = 138$, $p < .001$. W2 = Wave 2; CFI = .925, RMSEA = .054, $\chi^2 = 25,936.940$, $df = 138$, $p < .001$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

indicating a positive effect of leaving school. Although vocational adolescents' anxiety was stable, contrary to our predictions (Hypothesis 2b), together with the aforementioned changes in depression and positive functioning this indicated overall positive mental health development. As the demands-resources model (Demerouti et al., 2001; Salmela-Aro & Upadyaya, 2014) suggests, this positive development might be accountable to better matched work demands and resources in their vocational route. However, it might also have stemmed from greater satisfaction with their new role because of their socialized expectation to enter a vocational route (Reay, 2011), or to a manufactured compliance with this route as their occupational possibilities narrowed after leaving a comprehensive setting (Buchmann & Dalton, 2002).

It is interesting that the increases in mental health were strongest for apprentices. This might relate to them having better self-perceptions after winning a coveted placement, because apprenticeship positions are limited and often require applicants to sit rigorous aptitude tests (City & Guilds Centre for Skill Development, 2010). Or, apprentices might have received more tailored environmental support after transition than other groups, because of having a close relationship with their mentor and a more personalized program of training. More research in this area is necessary to elucidate our findings.

FE college students were unique in being similar to both academic and other vocational groups. Like academic adolescents, FE college students had increased anxiety after transition, although this increase was less steep. Possibly like adolescents in other

studies, they might have found FE college less stressful than employment but more stressful than school (Hodkinson & Bloomer, 2001). Their depression declined in a similar manner to that of apprentices and FT workers, while their positive functioning remained stable. This might indicate that transfer to FE college (i.e., a more personalized vocational route) allowed adolescents to feel better about themselves, but also pressurized them through a focus on assessment and achievement, similar to school and SF college.

Another special group was PT workers, who had stable mental health across transition. Although we have no data to explain why PT workers did not experience the mental health gains of their vocational peers, as they too left the academic pressures of schooling, it is possible that the stability in their development occurred because they missed some benefit of being on a more involved vocational track. In other studies, adolescents transferring to PT work felt less capable of achieving their goals than they did while at comprehensive school, because part-time work marked their failure to obtain a full-time educational or vocational placement (Hodkinson & Bloomer, 2001).

Both groups on an academic track (school and SF college) had increased anxiety after transition as expected (Hypothesis 2b), different to those involved in employment or training. Academic adolescents might have felt pressurized by studying for their university entrance examinations, as they have done after the post-16 transition in Ireland (McCoy, Smyth, Watson, & Darmody, 2014), a feeling that can encourage school-related stress

Table 4
Background Influences on Post-16 Destinations

| Variable | (1) School | | | (2) SF college | | | (3) FE college | | |
|-------------|----------------|-----|------|----------------|-----|------|----------------|-----|------|
| | b* | SE | OR | b* | SE | OR | b* | SE | OR |
| Female | .031** | .01 | 1.13 | .048** | .02 | 1.20 | .025* | .01 | 1.10 |
| Achievement | .339*** | .01 | 2.41 | .226*** | .02 | 1.74 | -.183*** | .01 | .64 |
| SES | .180*** | .02 | 1.17 | .002 | .02 | 1.00 | -.122*** | .02 | .91 |
| Asian | .186*** | .01 | 2.66 | .167*** | .02 | 2.28 | -.076*** | .01 | .69 |
| Black | .039** | .01 | 1.35 | .109*** | .02 | 2.21 | .041** | .01 | 1.34 |
| Mixed | .014 | .01 | 1.13 | .025 | .02 | 1.23 | .020 | .01 | 1.18 |
| | (4) Apprentice | | | (5) FT work | | | (6) PT work | | |
| | b* | SE | OR | b* | SE | OR | b* | SE | OR |
| Female | -.174*** | .03 | .51 | -.116*** | .02 | .61 | .017 | .03 | 1.07 |
| Achievement | -.192*** | .02 | .62 | -.175*** | .02 | .62 | -.142*** | .03 | .70 |
| SES | -.057 | .04 | .95 | -.118*** | .03 | .90 | -.047 | .05 | .96 |
| Asian | -.227*** | .03 | .31 | -.463*** | .03 | .08 | -.323*** | .05 | .19 |
| Black | -.222*** | .05 | .19 | -.271*** | .04 | .11 | -.191*** | .05 | .24 |
| Mixed | -.044 | .03 | .68 | -.105*** | .02 | .37 | -.012 | .03 | .90 |
| | (7) NEET | | | | | | | | |
| | b* | SE | OR | | | | | | |
| Female | -.075** | .02 | .74 | | | | | | |
| Achievement | -.219*** | .02 | .57 | | | | | | |
| SES | -.241*** | .03 | .81 | | | | | | |
| Asian | -.246*** | .03 | .28 | | | | | | |
| Black | -.136*** | .03 | .36 | | | | | | |
| Mixed | -.016 | .02 | .87 | | | | | | |

Note. SF = sixth form; FE = further education; OR = odds ratio; SES = socioeconomic status; FT = full-time; PT = part-time; NEET = not in education, employment, or training. Separate regression models run for each post-16 destination with all predictors entered simultaneously.

* $p < .05$. ** $p < .01$. *** $p < .001$.

(Murberg & Bru, 2004; Tuominen-Soini & Salmela-Aro, 2014). As higher achievers, they might also have held both high mastery and performance goals, which has associated with increased anxiety when changing schools (Duchesne, Ratelle, & Feng, 2014) and with more emotional exhaustion at school (Tuominen-Soini et al., 2008). Perhaps because of this group's academic characteristics and possible experience of increased academic pressure, our results are at odds with the decreases in school-related anxiety observed across adolescence (Hale, Raaijmakers, Muris, van Hoof, & Meeus, 2008) and at earlier school transitions (Symonds & Galton, 2014).

School students also had increased depression. Possibly this was a function of their elevated work anxiety, which was higher than that of any other academic or vocational group. Or, they might have experienced less support for their needs in traditional schools than in SF colleges, because SF colleges give students more free time and independence (Symonds & Hagell, 2011) allowing adolescents to autonomously configure their lives to support self-enhancement. The lack of both in traditional schools might have interacted with adolescents' developmental risk for depression, for 15- to 18-year-olds have higher depression than younger and older people (Hankin et al., 1998). Finally, both school and SF college students had losses in positive functioning (Hypothesis 2c), that fits the international pattern that adolescents in academic schools have lower academic self-concept than their peers in vocational schools (Chmielewski et al., 2013).

As expected, NEET adolescents became more depressed than both groups after transition, and had increased anxiety and losses in positive functioning (Hypothesis 2d) perhaps because like NEET adolescents in other studies, they were stressed by the loss of immediate opportunities for self-enhancement, financial support and longer term labor market potential (Bynner & Parsons, 2002; McCoy et al., 2014); by not being able to achieve their goals for education or employment (Paul, Vastamäki, & Moser, 2014); and by struggling to find a job or educational placement with no school leaving qualifications (Spielhofer et al., 2009). They would also have had fewer supports for mental health that exist in the more structured environments of full-time education, employment or training (Jahoda, 1981). The differences between NEET adolescents and other groups were far stronger after the post-16 transition, fitting with common pattern that becoming NEET is a stronger influence on mental health development, than prior mental health is on becoming NEET (e.g., Paul & Moser, 2009).

Limitations and Future Research Directions

A main limitation of the study is its correlational nature. Although we can say that adolescents' mental health changed characteristically of their post-16 destination, we cannot say to what extent their experience of transition as an activity, and the demands and supports of the new environments, influenced this development versus other factors. We attempted to address this deficiency

Table 5
Mental Health at Comprehensive School Regressed on Post-16 Destinations

| Variable | Depression W1 | | | Anxiety W1 | | | Positive functioning W1 | | |
|---|---------------|-----|------|------------|-----|------|-------------------------|-----|------|
| | β | SE | d | β | SE | d | β | SE | d |
| Overall comparisons | | | | | | | | | |
| AC vs. VOC | -.02 | .02 | -.03 | .08* | .04 | .11 | -.05** | .02 | -.10 |
| Specific post-16 destinations compared with all (other) academic groups | | | | | | | | | |
| School-SF college | .01 | .02 | .01 | .02 | .03 | .03 | -.03* | .01 | -.07 |
| FE college | .01 | .02 | .01 | -.04* | .02 | -.06 | .01 | .01 | .02 |
| Apprentice | .01 | .04 | .01 | -.02 | .04 | -.03 | -.01 | .02 | -.02 |
| FT work | .09** | .03 | .11 | .02 | .03 | .03 | -.05** | .02 | -.13 |
| PT work | .06 | .05 | .08 | .02 | .05 | .03 | -.05 | .03 | -.11 |
| NEET | .10** | .04 | .12 | .07 | .04 | .10 | -.06** | .02 | -.14 |
| Specific post-16 destinations compared with all (other) vocational groups | | | | | | | | | |
| School | -.01 | .02 | -.02 | .06** | .02 | .07 | -.01 | .01 | -.02 |
| SF college | -.02 | .02 | -.02 | .05 | .03 | .07 | .00 | .01 | .00 |
| FE college | -.05* | .02 | -.06 | -.02 | .03 | -.03 | .02 | .01 | .05 |
| Apprentice | -.01 | .03 | -.01 | -.03 | .04 | -.04 | .01 | .02 | .03 |
| FT work | .08** | .03 | .09 | .06 | .03 | .08 | -.04** | .02 | -.09 |
| PT work | .03 | .05 | .03 | -.01 | .05 | -.01 | -.01 | .02 | -.01 |
| NEET | .07* | .03 | .09 | .08* | .04 | .11 | -.05* | .02 | -.10 |

Note. W1 = Wave 1; AC = academic; VOC = vocational; SF = sixth form; FE = further education; FT = full-time; PT = part-time work; NEET = not in education, employment, or training. Models controlled for gender, achievement, socioeconomic status; Asian, Black and Mixed ethnicities.

* $p < .05$. ** $p < .01$. *** $p < .001$.

in part by controlling for adolescents' gender, ethnicity, achievements, and SES, which might otherwise have obscured the unique relationship between mental health and in post-16 destinations. On this note, future research might wish to focus more on these background variables; for example, by configuring individual profiles of gender, SES, and ethnicity, to reveal mainstream and alternate patterns of adaptation. An extant example is the finding that females are more at risk for depressive symptoms at university if their background characteristics (such as SES) do not predict university entrance (Feinstein & Vignoles, 2008). Or, these background factors alone would make for interesting study; for example, into whether mental health changes in similar ways for ado-

lescents of different ethnic groups, as they transition into specific post-16 destinations.

A second limitation is that our inferences about the mechanisms (stage-environment fit and demands-resources) are indirect, because we do not have measures of the adolescents' perceptions of fit or the resources and demands in the pre- and posttransition environments. In future studies it would be fruitful to measure individual and developmental characteristics, and workplace resources and demands, to give more insight on those prospective mechanisms.

Conclusions

Using longitudinal English national cohort data, we observed that in line with person-environment fit theories (Demerouti et al., 2001; Eccles & Midgley, 1989), adolescents transferring to a vocational environment after comprehensive school had more gains in mental health than those staying on at school or entering SF college. This finding presents a similar picture to the development of mental health and self-concept in countries where students are tracked into vocational or academic schools in mid-adolescence (Chmielewski et al., 2013; Salmela-Aro et al., 2008). In England, adolescents became mentally healthier if they transferred to an apprenticeship, FT work, or to FE college.

In comparison, those remaining on an academic track were slightly more anxious before transition and had greater increases in anxiety after transition. This large group of students might have been under more pressure to achieve at comprehensive school, and experienced increased pressure as they prepared for university entrance examinations in a more homogenous group of high achievers after transition. Similarly, transition from comprehensive school into preuniversity academic education has associated

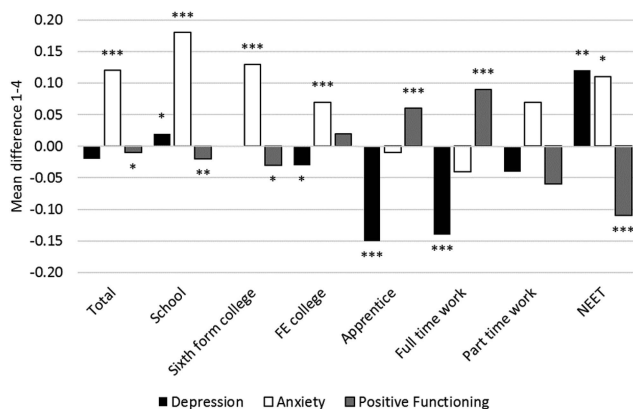


Figure 1. Mental health development at the school-to-work transition. FE = further education; NEET = not in education, employment, or training. *** $p < .001$. ** $p < .01$. * $p < .05$.

Table 6
Change in Mental Health Regressed on Post-16 Destinations

| Variable | Δ Depression | | | Δ Anxiety | | | Δ Positive functioning | | |
|---|--------------|-----|------|-----------|-----|------|------------------------|-----|------|
| | β | SE | d | β | SE | d | β | SE | d |
| Overall comparisons | | | | | | | | | |
| AC vs. VOC | .02 | .01 | .03 | .09** | .04 | .12 | -.15*** | .02 | -.34 |
| Specific post-16 destinations compared with all (other) academic groups | | | | | | | | | |
| School-SF college | .03 | .02 | .03 | .05* | .02 | .06 | -.01 | .01 | -.02 |
| FE college | -.03* | .02 | -.04 | -.12*** | .02 | -.16 | .02* | .01 | .05 |
| Apprentice | -.11*** | .03 | -.14 | -.15*** | .04 | -.20 | .04* | .02 | .09 |
| FT work | -.07** | .03 | -.09 | -.15*** | .03 | -.20 | .04** | .02 | .09 |
| PT work | .00 | .04 | -.01 | -.07 | .05 | -.10 | -.07** | .03 | -.16 |
| NEET | .19*** | .03 | .25 | .00 | .04 | -.01 | -.13** | .02 | -.30 |
| Specific post-16 destinations compared with all (other) vocational groups | | | | | | | | | |
| School | .05** | .02 | .07 | .15*** | .02 | .20 | -.03*** | .01 | -.07 |
| SF college | .02 | .02 | .02 | .09*** | .03 | .13 | -.02 | .01 | -.05 |
| FE college | .04* | .02 | .05 | .06* | .03 | .08 | -.01 | .01 | -.03 |
| Apprentice | -.08** | .03 | -.11 | -.07 | .04 | -.10 | .05** | .02 | .10 |
| FT work | -.01 | .03 | -.02 | -.06 | .03 | -.08 | .02 | .02 | .05 |
| PT work | .05 | .04 | .07 | .03 | .05 | .05 | -.09*** | .03 | -.21 |
| NEET | .26*** | .03 | .34 | .09* | .04 | .12 | -.15*** | .02 | -.35 |

Note. AC = academic; VOC = vocational; SF = sixth form; FE = further education; FT work = full-time; PT work = part-time; NEET = not in education, employment, or training. Models controlled for gender, achievement, socioeconomic status; Asian, Black, and Mixed ethnicities.

* $p < .05$. ** $p < .01$. *** $p < .001$.

with increased work-related strain in Finland (Salmela-Aro et al., 2008) and greater stress in Ireland (McCoy et al., 2014), while in Canada the transition to university has acted as an acute stressor (Gall, Evans, & Bellerose, 2000). Finally, a third group of adolescents who became NEET after transition exhibited the greatest declines in mental health.

Drawing on stage–environment fit theory, we expected that vocational adolescents would have greater misfit at comprehensive school than their academic peers. However, our findings demonstrated this was only the case for future FT workers. This suggests one of two things. First, it might have been possible that the school environment fit academic and vocational students equally well. As discussed in the introduction, there are vocational subjects at comprehensive school, and ability streams for core subjects, meaning that vocational students would find some support for their skills and interests, and experience teaching differentiated to meet their needs, and that this, contrary to our expectations, was enough to ensure their happiness at comprehensive school.

However, a second interpretation is that school environment misfitted with both vocational and academic adolescents to a similar extent. Possible support for this interpretation comes from the vocational adolescents' improved mental health, and the greater anxiety and depression for academic adolescents staying on at school, after transition. This indicates that the state funded school environment was less conducive to mental health than it could have been, as all other environments, including sixth form college, were associated with some mental health gains. To test this assumption, future research would need to compare the mental health of academic and vocational students who were educated in the state secondary schooling system, with that of students who attended other types of schools such as independent schools, or specialist religious or performance schools.

Our findings regarding academic adolescents might encourage researchers and educators to think about the longer term consequences of staying on at school or transferring to SF college for the development of school related strain and anxiety disorders. Although experiencing a degree of work pressure can be productive for motivation and achievement, adolescents in this study experienced an increase in symptoms of school burnout (i.e., losing sleep over worry and feeling constantly under strain), which is counter-productive for school achievement (Hembree, 1988). Although this finding does not have direct policy implications, it does call for a careful evaluation of how to provide a high-quality academic education without tipping the scales from positive to negative stress. It also warrants further study on long term effects of schooling and being on an academic track in adolescence and young adulthood, on the lifetime prevalence of anxiety disorders. On the other hand it is important to consider that any current short term ill effects might be outweighed by longer term gains in mental health, because spending more years in education has associated with higher adult earnings and occupational status (Schoon, 2008): both factors predicting better subjective well-being in later life (Pinquart & Sörensen, 2000).

Finally, we reflect on our findings in relation to the trend in some societies to encourage all adolescents to attempt academic courses designed for university entrance requirements, or to obtain college level education as is the case in the United States (i.e., Symonds, Schwartz, & Ferguson, 2011), given that in England, we found that entering a trade or employment associated with improved mental health, in particular the move to an apprenticeship. In the English context, there is a pressing need to reduce social prejudice against vocational routes from the middle and upper classes (Reay, 2011) and to create parity between academic and vocational activities in school, so that all adolescents, no matter

what social class they represent, are uninhibited from taking a valuable and stimulating vocational pathway.

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