The early onset of distress disorders and high school dropout:
Prospective evidence from a national cohort of Australian adolescents

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Running head: Early onset distress and high school dropout
Abstract
Prior research examining whether depression and anxiety lead to high school dropout is limited by a reliance on retrospective reports, the assessment of mental health at a single point in time (often remote from the time of high school exit) and omission of important measures of the social and familial environment. The current study addresses these limitations by analysing 8 waves of longitudinal data from a cohort of Australian adolescents (n = 1057) in the Household Income and Labour Dynamics in Australia (HILDA) Survey (2001-2008). Respondents were followed from the age of 15 years through to completion or exit from high school. Discrete time survival analysis assessed whether the early experience of a distress disorder (DD) (indicated by scores <50 on the Mental Health Inventory (MHI-5) from the Short Form Health Survey (SF-36)) predicted subsequent high school dropout, having controlled for household and parental socio-economic characteristics, and smoking and alcohol consumption. Adolescents with a prior distress disorder had twice the odds of high school dropout compared to those without (OR = 1.99; 1.24, 3.17). This association was somewhat attenuated but remained significant in models including tobacco and alcohol consumption (OR = 1.74; 1.09, 2.78). These results suggest improving the mental health of high school students may promote better educational outcomes.

Key words
Mental health; Education; High school incompletion; Longitudinal; Adolescence

Abbreviations
Mental Health Inventory (MHI-5)
Distress Disorders (DD)
HILDA (Household Income and Labour Dynamics in Australia survey)
OR (Odds Ratio)
Introduction

Educational attainment is a critical determinant of adult life opportunities, both at the individual level in terms of work, health and financial circumstances and in a broader societal context in terms of demand on social welfare entitlements and workforce development [1]. Data from across countries in the Organisation for Economic Co-operation and Development (OECD) shows a trend of increasing levels of school retention, including high school completion [2]. Nonetheless, Australian data from the mid-2010s shows that around 26% of 19 year-olds did not have high school (or equivalent) qualifications [3, 4]. The reasons for high school incompletion are varied and include poor academic performance, absence from school, and a lack of socio-economic resources [4]. One likely further important antecedent for high school incompletion is early onset psychiatric illness [5]. Like high school incompletion, psychiatric illness has been shown to be associated with unemployment, poor job quality, low income, financial hardship, and poor housing [6-9]. The mechanisms via which early onset psychiatric illness might impact school incompletion include the disruption of academic achievement (e.g. via impaired cognitive function), disrupted behaviour, and social responses from teachers and parents which pre-judge (and inadvertently limit) student ability [10]. Identifying the contribution of early onset psychiatric illness to high school incompletion is necessary to inform effective, targeted prevention and intervention policies. The current study uses longitudinal, prospective data to investigate the specific contribution of early onset of symptoms of anxiety and depression. We use the term distress disorder (DD) to describe likely clinical levels of depression and (generalized) anxiety symptoms, reflecting a transdiagnostic approach which views depression and anxiety as markers of an underlying internalising or ‘distress’ factor [11-13].
Links between early onset mental disorders and subsequent high school incompletion have predominantly been investigated using retrospective data on age of onset. Research from the US, Australia and South Africa has found that early onset disorders such as anxiety and mood disorders, conduct disorder, and substance use disorders are associated with high school incompletion [14-17]. The reliance on retrospective data is, however, a major limitation [18, 19] with retrospective data vulnerable to recall bias and imprecise for capturing the timing between disorder onset and high school dropout. A recent systematic review by Melkevik et al. [19] focused on the association of anxiety and depression with high school incompletion demonstrated this over-reliance on retrospective data, showing that only four of 16 studies employed a prospective design [20-23]. Closer examination of these prospective studies also revealed two key limitations: a) long time-lags between assessments of symptomology and school outcomes, and b) inadequate adjustment for socio-economic confounders and indicators of comorbid risk-taking/externalising behaviours.

For example, a prospective study conducted by Fletcher et al. [21] utilised a sibling fixed-effects methodology to control for potentially relevant but unmeasured family and neighbourhood characteristics common to both siblings (e.g. family resources, neighbourhood crime). Analyses of data from ~2400 adolescents found that greater depression was associated with high school dropout after adjusting for family and neighbourhood indicators, however the association was no longer significant after controlling for risky behaviours (e.g. substance use). The study used a nationally representative sample of US students in grades 7-12, initially interviewed in 1994 when the Centre for Epidemiologic Studies Depression (CES-D) scale was administered. Educational outcomes were assessed 6 years later when respondents were (on average) 22 years old. Given depression is episodic in nature, the long time-lag between assessments have under-
represented episodes of depression. A long time-lag also makes it difficult to link experiences of distress disorders directly with high school dropout, as it increases the opportunity for cumulative confounding factors, such as adverse family circumstances, to play a substantive role.

In another example, Fergusson and Woodward [20] analysed data from 1265 New Zealand adolescents and found that depression was associated with early school exit, but not after adjustment for socio-economic status (maternal education and family socio-economic status at birth) and indicators of comorbid externalising problems (conduct disorder, Attention Deficit Hyperactivity Disorder (ADHD), smoking and alcohol use). In this study, the assessment of mental health and educational outcomes was more proximal. Adolescents were categorised as having major depression between the ages of 14-16 (interviewed at ages 15 and 16) and educational outcomes were measured at ages 16, 18 and 21. While the analysis adjusted for maternal educational achievement and family socio-economic status at the time of the child’s birth, more recent and time-varying measures of socio-economic circumstances were not considered.

The current study uses a broadly representative, national household survey to prospectively follow a large cohort (n=1057) of Australian adolescents across their final years of high school (annually) to assess how the experience of a distress disorder (DD - representing clinical levels of depression and anxiety symptoms) may influence high school completion. Uniquely, the longitudinal household-study design allows us to overcome many of the methodological limitations of previous research. We control for a comprehensive range of potential confounders over time, including household- and parent-level factors for both mothers and fathers. Given we assessed confounders annually, the analyses consider changing socio-economic and family circumstances, accounting for both episodic and
entrenched socio-economic disadvantage. The analyses also adjust for smoking and alcohol use. These risky behaviours are known to be associated with truancy and high school incompletion, and are highly associated with externalising problems and other forms of substance use.

Methods

Sample

Data were from the first eight waves of the Household, Income and Labour Dynamics in Australia (HILDA) Survey (release 14.0). Details of the survey methods are reported elsewhere [24]. Briefly, HILDA is a nationally representative longitudinal household panel survey with a multistage sampling design. Interviews have been conducted annually since 2001 with each household member aged ≥15 years. The survey composition is dynamic, with sample loss arising from death or attrition and new respondents entering the sample each wave (e.g., adolescents within a household are eligible to participate when they reach 15 years of age). The HILDA survey was approved by the Human Research Ethics Committee at the University of Melbourne.

A unique sub-dataset was created that included all 15/16 year olds who entered the HILDA survey during the first four waves, and included their first five years of data. Data for all respondents was centred on their first wave of participation (i.e., considered Year 1 regardless of when they entered the survey). This identified a sample of 1,256 15/16 year olds with data at Year 1. However, 100 participants had already left school at their first assessment occasion (74% of these were aged 16 years), and a further 99 did not participate in any subsequent waves during the follow-up period, leaving 1057 respondents. A series of univariate analyses showed that residing in a low socioeconomic status (SES) area, having no mother in the
household, and mother’s low educational attainment were the only factors associated with attrition. Table 1 shows respondent high school completion status over time. Over the study, 673 respondents completed high school (64%) and 295 (28%) exited high school without graduating. The outcome for 89 respondents (8%) was not resolved (6 were still attending school at the final wave). Overall, from year 2 to 5 (when outcomes were assessed), excluding occasions on which respondents did not participate, there were 2483 observations.

Finally, while item missingness was minimal, it did lead to some further data reduction. The main model, incorporating a range of individual and household variables (not considering parental characteristics) resulted in missing data for 68 respondents and 253 observations. Most of this missingness was associated with absence of the lagged distress measure with 27% of these occasions resulting from failure to complete/return the Self Completion Questionnaire in which mental health was assessed. This missingness was addressed through multiple imputation methods [25].

Measures

Distress disorders (DD) were assessed at all time-points using the Mental Health Inventory (MHI-5), a subscale from the Short Form (SF-36) General Health Survey [26]. The MHI-5 has been validated against Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Axis 1 diagnosis, been recommended for screening for anxiety and depressive disorders, and used as a measure of likely anxiety and/or depression in epidemiological surveys [27, 28]. The MHI-5 assesses symptoms of depression and anxiety, as well as positive aspects of mental health in the past 4 weeks. Scores range from 0 to 100, with higher scores representing better mental health. The analyses dichotomized the MHI-5, with scores of less than 50 categorized as having a DD. This cut-point was chosen on the basis of
previous research validating the MHI-5 against diagnosis of anxiety and depression disorders assessed using the Composite International Diagnostic Interview [29]. Preliminary analyses using the HILDA data confirmed the validity of the MHI-5 as an indicator of distress in comparison to the Kessler Psychological Distress (K-10) scale, and that the five MHI items represent a single ‘distress’ factor (see Web Appendix 1).

High school completion status. At each year, early school exit was coded as a binary variable, contrasting those who were still at school or had just completed high school (0) with those who had left prior to high school completion (1). At each year respondents were considered out of scope if at their previous interview (year) they reported having completed or left school. In Australia, education policy is generally the responsibility of the six States and two Territories, resulting in some differences in how education is structured across different jurisdictions. However, the general progression through school involves a year of preparatory school at age five (kindergarten), followed by six years of primary school, and six years of high (or secondary) school (ending in 12th grade). Attending school is compulsory until the end of grade 10 (15/16 years old), with some minor variations between states [30].

Covariates included basic demographics at baseline (sex, age). Household indictors included a measure of region/remoteness, housing tenure (renting vs. other), residence in a socio-economically disadvantaged area (lowest 30% of Socio-Economic Index for areas (SEIFA)), and low level of household income (bottom quintile). A number of indicators of parents’ circumstances were included for mothers and fathers: presence in household (either not in household or non-responder), high school incompletion, post-school qualifications, receiving income support payments, employed vs. unemployed, and employed (currently or previously) in a low skill occupation. Binary variables representing adolescents’ current smoking status
and alcohol consumption (≥ weekly=1) were included. 'Time in study' (years) was also included.

Analyses

Descriptive statistics from the baseline sample were initially calculated. A series of Discrete-Time Survival Analysis models examined the association of prior (12-month lagged) DD (and lagged covariates) with an indicator of early school exit. Discrete-Time Survival Analysis is appropriate given the annual data collection. Preliminary models over the 4 year follow-up period showed that time to early school exit (or censor) was appropriately represented by a linear term, with each additional year at school decreasing the odds of early exit by 18%. A standard approach to model building was employed with variables with a univariable p ≤ 0.2 included in a preliminary multivariable model. Backward elimination was then used to remove variables that no longer met this criteria without leading to poorer model fit (evaluated by comparing log-likelihood statistics) or altering the coefficient of the key covariate by 15% (Model A). Two key potential confounders of the association between DD and early school exit (lagged smoking and alcohol consumption) were added at a final model step (Model B). Potential gender differences were evaluated by the inclusion of an interaction term (as gender was identified as a potentially important mediator by Melkevik et al. [19]).

The main analyses were weighted by the responding person sample weights included in each wave of HILDA to adjust for non-response/selection (see [31]) and multiple imputation (using chained equations to generate 20 imputed datasets based on 10 cycles) was used to address potential bias due to missing data on covariates. A series of further sensitivity analyses were conducted (see Web Appendix 1) to address potential study limitations: excluding respondents who completed high school in the current year; calculating inverse
probability weights to adjust for attrition; using random effects logistic regression models; limiting analysis to respondents who entered the study at age 15 years; and testing the robustness of MHI-5 scale.

Results

Descriptive Analyses

The baseline (year 1) characteristics of the analysis sample are presented in Table 2. Overall, adolescents who subsequently left school early were significantly more likely to live in rental housing, to not live with their mother, and to report DD, current smoking and regular (weekly or more frequent) alcohol consumption (based on chi-square tests of association). Preliminary analysis showed that a model including a measure of time-varying DD was superior to a model comprising only baseline DD (loglikelihood $\chi^2 = 7.93, df = 1, p = .005$).

Discrete-Time Survival Analyses

Initial univariable discrete-time survival models showed that all covariates except baseline age and parental employment characteristics (workforce status, and occupational skill level) were associated with early school exit with $p \leq 0.2$ and were, therefore, included in the early phase of multivariate model building. The first model (Model A; Table 3), having deleted covariates no longer associated with the outcome, showed that adolescents who reported DD had twice the odds of early school exit in the following year in comparison to those without DD (OR = 1.99), having controlled for socio-demographic characteristics, economic circumstances and parental characteristics.
The final model (Model B) incorporated the measures of adolescent substance use (lagged smoking status and alcohol consumption). While smoking was associated with increased odds of early school exit, DD remained significant, with respondents with DD having odds 74% greater of leaving school early the following year compared to those without DD. Being male, living in rental housing, having no father in the household and having a mother who left school early were also characteristics associated with early school exit. On the basis of this model, we consider the likelihood of early school exit for an adolescent male, who does not smoke or regularly drink alcohol, who lives in rental accommodation with his father (who receives income support payments) and whose mother did not complete high school. While a male in these circumstances without DD had a likelihood of 22% (11.5 to 33.3) of early school exit, the likelihood of early school exit for an adolescent in the same circumstances but with DD was 34% (17.8 to 49.8).

Sensitivity analyses confirmed the robustness of the results (see Web Appendix 1). The inclusion of the interaction term between gender and DD did not improve model fit (loglikelihood $\chi^2 = 2.59$, $df=1$, $p = .107$), though coefficients were greater for women than men. An initial model unadjusted for non-response, attrition and missing data (see Web Table 1) produced similar ORs for the association between DD and early school exit, as did models using the continuous MHI-scale (see Web Table 8), and models testing the depression and anxiety MHI items separately (see Web Table 9). The exclusion of adolescents who completed high school in the target year (see Web Table 3), and random effects models (see Web Table 10) produced similar (or somewhat stronger) ORs for the association between DD and early school exit. Restricting the analysis to those initially aged 15 years produced slightly weaker coefficients (see Web Table 2). Supplementary analyses also outline the details of various models aimed at reducing bias (see Web Tables 4-7).
Discussion

The findings from this prospective study provide strong evidence that adolescents experiencing a distress disorder (depression/anxiety symptoms) are at greater risk of high school dropout than those who are not. The relationship between DD and subsequent high school dropout remained significant after taking account of a broad range of socio-economic circumstances (including household- and parent-level factors) as well as adolescents’ alcohol and tobacco use.

In the context of previous research, while several retrospective studies have similarly pointed to a strong link between early onset mental health disorders and high school incompletion [14-17], the findings of prospective research focused on anxiety and depression have varied depending on the lag between interview dates and the socio-demographic and health behaviour covariates [19-21]. The current study represents a significant advance on previous research, given the models controlled for household and parental socio-economic circumstances (as they vary over time), both of which are strongly related to high school completion. The current study is also unique in its application of multiple waves of data, spaced annually apart. The repeated measurement of DD and other covariates over time enabled consideration of the proximal association between experiences of DD in adolescence and subsequent high school dropout. We showed, for example, that a measure of lagged DD was a significantly better predictor of high school dropout than a time-invariant measure of DD at age 15 years, demonstrating the importance of multi-wave data on mental health as opposed to baseline data alone. The importance of anxiety and depression for subsequent high school incompletion is evident in finding that the association endures after taking account of tobacco and alcohol use, which are each strongly and independently associated
with high school dropout. (We note that this inclusion may represent an overcorrection as substance use could be a response to the experience of anxiety and depression symptoms).

This study adds weight to the hypothesis that early onset DD disrupt the opportunity for adolescents to successfully attain important social and economic milestones, such as high school completion. However, there are other important indicators of educational disruption, such as school absence (due to poor psychological health or truancy), poor student engagement, and poor academic achievement [32-34]. High school dropout likely represents the endpoint in a series of disruptions in relational and academic growth that are influenced by, and in turn influence, anxiety and depression symptoms. While high school incompletion is the endpoint in this investigation, it is important to consider post-school transitions such as entering vocational training, university education and employment. Despite disrupted schooling, some individuals will find new pathways to further education and employment, while others will be unable to do so [5, 35]. Given roughly half of all mental disorders have their onset during adolescence (mid-teens) [36], there is great scope to more robustly delineate the impacts of early DD on educational and socio-economic opportunities, and generate new data on the personal, social and economic benefits of early intervention.

A number of limitations should be noted. Diagnostic measures of mental health (i.e., mental disorders) were not available. However, the MHI-5 score is a valid indicator of depression and anxiety in the general community [29]. The HILDA Survey included no information on the school environment, academic achievement, or school absence, nor did it include psychometric measures of externalising or conduct behaviours. Australian data has shown that high school completion is strongly associated with academic performance [4] and with externalising behaviours [20]. It may be that distress disorders are a consequence of these underlying factors. However, we adjusted for a range of socio-demographic and substance
use measures which would also likely be associated with these academic and behavioural factors. This study also does not consider different school settings, such as contrasting private or public schools. The current results showed a relatively high rate of high school non-completion (28%), but this is consistent with census and other data on high school completion published by the Australian Bureau of Statistics and other reputable sources [37, 38]. As the HILDA Survey is restricted to respondents aged 15 years or older, we did not capture those who left school very early. However, analysis restricted to 15 year-olds eliminated most of this missingness and produced the same pattern of results. It is also important to recognise that, with time and perhaps the resolution of their DD, some in their late teens/early 20s without high school qualifications may return to education. The current study, by design, does not consider return to study or longer-term outcomes. This is an important direction for further research. Similarly, while not significant in this study, gender differences in the association between DD and school dropout warrant further consideration. Despite these limitations, this study provides unique longitudinal data on the mental health and social circumstances of adolescents and their parents/households. The range of sensitivity tests conducted (applying different methods, measures, weights and multiple imputation) demonstrate the robustness of the findings.

The current study followed a large cohort of Australian adolescents across the final years of high school. Experiencing clinical levels of depression and anxiety symptoms during early adolescence was associated with increased risk of high school dropout. The findings support calls for mental health prevention and early intervention programs targeting adolescents and the school environment. In the Australian setting, such services and programs are becoming common (e.g. Headspace, beyondblue schools program, MindMatters). The evaluation of these programs should consider social and economic outcomes, such as reduction in high
school dropout. The current findings highlight the need to provide and evaluate mental health support services for young people who have left the education system to enhance their chances of returning to education or gaining meaningful employment. There may be broad benefits of such service and policy interventions.

Acknowledgements

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References


Tables.

Table 1. High school completion status over the five year time-points from the HILDA Survey (2001-2008).

<table>
<thead>
<tr>
<th>Year</th>
<th>Still at high school</th>
<th>Completed high school*</th>
<th>Early exit*</th>
<th>Did not participate in wave</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1,057</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>857</td>
<td>24</td>
<td>121</td>
<td>55</td>
</tr>
<tr>
<td>3</td>
<td>540</td>
<td>201</td>
<td>219</td>
<td>97</td>
</tr>
<tr>
<td>4</td>
<td>150</td>
<td>567</td>
<td>287</td>
<td>59</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>673</td>
<td>295</td>
<td>83</td>
</tr>
</tbody>
</table>

Note: *Cumulative frequencies.
Table 2: Characteristics of the HILDA survey sample at baseline in 2001.

<table>
<thead>
<tr>
<th>Variable (of interest)</th>
<th>Overall% (987 persons, 2,227 observations)$^a$</th>
<th>Complete school (or censored)% (762 persons, 1,805 observations)$^b$</th>
<th>Early exit% (295 persons, 722 observations)$^c$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 years</td>
<td>66</td>
<td>65</td>
<td>68</td>
</tr>
<tr>
<td>16 years</td>
<td>34</td>
<td>35</td>
<td>32</td>
</tr>
<tr>
<td>Sex (Female)</td>
<td>50</td>
<td>52</td>
<td>45</td>
</tr>
<tr>
<td>Low household income</td>
<td>16</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>Reside in disadvantaged area $^d$</td>
<td>31</td>
<td>28</td>
<td>40</td>
</tr>
<tr>
<td>Housing tenure – renter</td>
<td>20</td>
<td>17</td>
<td>27</td>
</tr>
<tr>
<td>No father in household</td>
<td>20</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td>No mother in household</td>
<td>4</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Father not complete high school</td>
<td>18</td>
<td>17</td>
<td>20</td>
</tr>
<tr>
<td>Mother not complete high school</td>
<td>37</td>
<td>33</td>
<td>49</td>
</tr>
<tr>
<td>Father current welfare receipt</td>
<td>7</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Mother current welfare receipt</td>
<td>19</td>
<td>17</td>
<td>27</td>
</tr>
<tr>
<td>Distress Disorder (MHI &lt; 50)</td>
<td>8</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Current smoker</td>
<td>6</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Regular (weekly or more frequent) alcoholic consumption</td>
<td>5</td>
<td>3</td>
<td>12</td>
</tr>
</tbody>
</table>

Note: MHI: Mental Health Inventory. Observations per person (with range): $^a$2.3 (1 to 4), $^b$2.5 (1 to 4), $^c$1.6 (1 to 4). $^d$Lowest 30% on SEIFA index of relative advantage/disadvantage.
Table 3. Discrete time survival models examining high school dropout prior to completion, HILDA survey sample (2001-2008).\textsuperscript{a}

<table>
<thead>
<tr>
<th>Variable (level of interest)</th>
<th>Model A</th>
<th>Model B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>95% CI</td>
</tr>
<tr>
<td>Prior Distress Disorder (MHI &lt; 50)</td>
<td>1.99</td>
<td>1.24, 3.17</td>
</tr>
<tr>
<td>Prior smoking</td>
<td>3.01</td>
<td></td>
</tr>
<tr>
<td>Prior alcohol consumption</td>
<td>1.52</td>
<td></td>
</tr>
<tr>
<td>Sex (Female)</td>
<td>0.68</td>
<td>0.51, 0.91</td>
</tr>
<tr>
<td>Time (years)</td>
<td>0.97</td>
<td>0.83, 1.15</td>
</tr>
<tr>
<td>Rental housing</td>
<td>1.79</td>
<td>1.27, 2.54</td>
</tr>
<tr>
<td>Father status (present)</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Not present in household</td>
<td>1.56</td>
<td>1.08, 2.25</td>
</tr>
<tr>
<td>Non-responder</td>
<td>1.48</td>
<td>0.69, 3.12</td>
</tr>
<tr>
<td>Mother left school early</td>
<td>1.77</td>
<td>1.28, 2.43</td>
</tr>
<tr>
<td>Father current welfare receipt</td>
<td>1.30</td>
<td>0.73, 2.31</td>
</tr>
</tbody>
</table>

Note: MHI: Mental Health Inventory. \textsuperscript{a}Analyses weighted by the responding person sample weights included in each wave of the HILDA survey. Analyses address missing data through multiple imputation methods (see Web Appendix 1 for details).
Web Appendix 1

The early onset of distress disorders and high school dropout: Prospective evidence from a national cohort of Australian adolescents

The following Web Appendix section describes a range of additional supplementary analyses undertaken to address potential study limitations: excluding respondents who completed high school in the current year; calculating inverse probability weights to adjust for attrition; using random effects logistic regression models; limiting analysis to respondents who entered the study at age 15 years; and testing the robustness of MHI-5 scale. The sensitivity analyses described below confirmed the robustness of the results – all models show a similar pattern of results to the analyses reported in the main paper.

Investigating sample selection, attrition and missing data

Initial analyses were unadjusted for non-response, attrition and missing (covariate) data (see Web Table 1). A sample of 989 respondents (2230 observations) who had no missing data were included in initial preliminary analyses. These analyses do not adjust for non-response (i.e. HILDA person sample weights) or attrition (i.e. calculated inverse-probability weights). The original sample comprised 1,256 15/16 year olds with data at Year 1. However, 100 of these respondents had already left school at their first assessment occasion. Analysis showed that the majority (74%) of those who had already left school were aged 16 years at baseline. Overall, 15% of baseline 16-year olds had already left school at the first measurement occasion compared to 3% of those age 15 years at baseline. To ensure the exclusion of these “early leavers” did not bias the results, the key analyses were repeated only for those respondents aged 15 years at baseline (N = 682) (see Web Table 2).

Additional supplementary analyses excluded respondents who completed high school the previous year (see Web Table 3), as it is possible that respondents identified as having completed high school in the current year may have (because of possible timing of the interviews and end of school year) exited school shortly after their prior interview. This may have inflated the association observed between distress disorder and early school exit (given positive wellbeing associated with having almost completed education) or it may have worked against this effect (i.e., the stress associated with end-of-school examinations, etc). To assess the robustness of the reported results, the analyses were repeated omitting those
who had recently completed high school (i.e., censoring them one wave earlier than the analysis reported in the manuscript).

There was also the opportunity to use the HILDA person sample weights to investigate potential selection and non-response bias. The HILDA Survey includes responding person-level sample weights at each wave, which enable adjustment for selection/non-response and ensure the sample at each wave more closely reflects the characteristics of the Australian national population (Watson, N., *Longitudinal and Cross-sectional Weighting Methodology for the HILDA Survey*. HILDA Project Technical Paper Series, No. 2/12, 2012). Discrete time survival models were repeated with these weights applied (see Web Table 4).

In addition to those who had already left school on their first measurement occasion, 99 respondents identified in scope at baseline did not participate in any subsequent waves of the HILDA Survey during the follow-up period. As another method to address concerns about potential (attrition) bias, inverse probability weights were calculated (i.e. logistic regression models predicting attrition from sex, age, distress disorder, residential region/remoteness, housing tenure (renting vs. other), residence in a socio-economically disadvantaged area, low household income (bottom quintile), parent presence in household (either not in household or non-responder), parent high school incompletion, parent post-school qualifications, parent receiving income support payments, parent employment status, parent low skill occupational background, adolescents’ smoking status, and adolescents’ alcohol consumption). Discrete time survival models were repeated with these weights applied (see Web Table 5).

Multiple imputation was also used to address potential bias due to missing data on covariates (see Web Tables 6 and 7). Preliminary analyses identified 68 respondents and 253 observations with missing data on covariates. Sensitivity analyses were conducted using the method of multiple imputation by chained equations to generate 20 imputed datasets (based on 10 cycles). The multiple imputation used appropriate distributional assumptions for each variable (logistic, multinomial logistic, continuous linear regression) and included the full range of covariates considered in the modelling. Imputation was contingent on participation in each wave (i.e., missing values for variables estimated, while retaining the profile of the longitudinal panel).

**Testing the robustness of the MHI-5 scale**

The MHI-5 scale comprises of 5 items that assess depression, anxiety and together overall distress. These items are broadly consistent with a number of the 10 items from the K10
Psychological Distress Scale (included in 4 waves of HILDA). The K10 and MHI-5 were compared using wave 15 data (both scales were included in this wave). Pearson correlation between the two scale scores was high (0.82). A cut-point of 25 on the K10 (which produces a distressed category of similar magnitude to the cut-point of 50 used for the MHI-5) showed agreement with the MHI-5 classification for 93% of respondents, and a kappa of 0.63 (se = 0.008) indicating substantial agreement. While the MHI-5 has been the subject of extensive empirical and psychometric analysis, we test the possibility that the full set of items represent distinct anxiety and depression constructs better than an overall measure of distress. An exploratory factor analysis of the MHI-5 items supported a single factor solution (first eigenvalue 2.29, second eigenvalue 0.24).

The reported analyses in the paper use an indicator of likely distress disorder based on a dichotomised score (< 50) on the MHI-5. We repeated the analysis using the continuous MHI-5 scale to demonstrate the robustness of the findings to this decision (see Web Table 8). To aid interpretation, the z-scores based on the coefficient/se from Model A and Model B using the categorical measure of the MHI-5 were 3.35 and 2.58. The corresponding z-scores from the models using the continuous scale were 3.74 and 2.70.

While there is strong evidence for a single, underlying distress factor, a set of sensitivity analyses were conducted to consider 2-item measures of “anxiety” and 3-item measures of “depression” separately. The depression and anxiety scales were each recoded to have a mean of 75 and sd of 15 so as to be comparable to the overall continuous MHI-5 scale. These three models (all using covariates from Model A) are presented in Web Table 9. The OR for all three measures of distress were similar, (with z scores (coeff/se) all greater than 3). Thus it was concluded that the MHI-5 is an appropriate measure to use, comparable to the widely used K10, with a similar pattern of results evident for the aspects of depression and anxiety.

Alternative model specification
Rather than running a discrete time survival model, the analyses were rerun as a random effects logistic regression model to investigate the consistency of results. This model, shown in Web Table 10, provided a similar pattern of results.
Web Appendix Tables

Web Table 1. Discrete time survival models examining high school dropout prior to completion, HILDA survey sample (2001-2008).

<table>
<thead>
<tr>
<th>Variable (level of interest)</th>
<th>Model A</th>
<th>Model B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>95% CI</td>
</tr>
<tr>
<td>Prior Distress Disorder</td>
<td>2.01</td>
<td>1.33, 3.00</td>
</tr>
<tr>
<td>Prior smoking</td>
<td>3.19</td>
<td>2.11, 4.84</td>
</tr>
<tr>
<td>Prior alcohol consumption</td>
<td>1.69</td>
<td>1.13, 2.54</td>
</tr>
<tr>
<td>Sex (Female)</td>
<td>0.72</td>
<td>0.55, 0.95</td>
</tr>
<tr>
<td>Time (years)</td>
<td>0.83</td>
<td>0.70, 0.98</td>
</tr>
<tr>
<td>Rental housing</td>
<td>1.77</td>
<td>1.26, 2.47</td>
</tr>
<tr>
<td>Father (present)</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Not present in household</td>
<td>1.40</td>
<td>1.00, 1.98</td>
</tr>
<tr>
<td>Non-responder</td>
<td>1.54</td>
<td>0.79, 3.01</td>
</tr>
<tr>
<td>Mother left school early</td>
<td>2.04</td>
<td>1.55, 2.69</td>
</tr>
<tr>
<td>Father current welfare receipt</td>
<td>1.60</td>
<td>0.99, 2.59</td>
</tr>
</tbody>
</table>

Web Table 2. Discrete time survival models examining high school dropout prior to completion, HILDA survey sample (2001-2008).

<table>
<thead>
<tr>
<th>Variable (level of interest)</th>
<th>Model A</th>
<th>Model B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>95% CI</td>
</tr>
<tr>
<td>Prior Distress Disorder</td>
<td>1.82</td>
<td>1.10, 3.02</td>
</tr>
<tr>
<td>Prior smoking</td>
<td>3.04</td>
<td>1.81, 5.12</td>
</tr>
<tr>
<td>Prior alcohol consumption</td>
<td>1.58</td>
<td>0.95, 2.62</td>
</tr>
<tr>
<td>Sex (Female)</td>
<td>0.67</td>
<td>0.48, 0.94</td>
</tr>
<tr>
<td>Time (years)</td>
<td>0.89</td>
<td>0.74, 1.08</td>
</tr>
<tr>
<td>Rental housing</td>
<td>2.04</td>
<td>1.37, 3.04</td>
</tr>
<tr>
<td>Father (present)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not present in household</td>
<td>1.40</td>
<td>0.93, 2.12</td>
</tr>
<tr>
<td>Non-responder</td>
<td>2.07</td>
<td>0.94, 4.58</td>
</tr>
<tr>
<td>Mother left school early</td>
<td>1.95</td>
<td>1.39, 2.72</td>
</tr>
<tr>
<td>Father current welfare receipt</td>
<td>1.97</td>
<td>1.14 – 3.41</td>
</tr>
</tbody>
</table>
Web Table 3. Discrete time survival models to examine high school dropout prior to completion, omitting occasions at which respondents first reported having completed high school, HILDA survey sample (2001-2008).

<table>
<thead>
<tr>
<th>Variable (level of interest)</th>
<th>Model A</th>
<th></th>
<th>Model B</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>95% CI</td>
<td>OR</td>
<td>95% CI</td>
</tr>
<tr>
<td>Prior Distress Disorder</td>
<td>2.17</td>
<td>1.41, 3.33</td>
<td>1.86</td>
<td>1.19, 2.91</td>
</tr>
<tr>
<td>Prior smoking</td>
<td>3.23</td>
<td>2.06, 5.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior alcohol consumption</td>
<td>2.11</td>
<td>1.36, 3.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex (Female)</td>
<td>0.73</td>
<td>0.54, 0.97</td>
<td>0.77</td>
<td>0.57, 1.04</td>
</tr>
<tr>
<td>Time (years)</td>
<td>1.51</td>
<td>1.33, 1.96</td>
<td>1.59</td>
<td>1.30, 1.95</td>
</tr>
<tr>
<td>Rental housing</td>
<td>1.90</td>
<td>1.33, 2.70</td>
<td>1.71</td>
<td>1.19, 2.47</td>
</tr>
<tr>
<td>Father (present)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not present in household</td>
<td>1.47</td>
<td>1.03, 2.11</td>
<td>1.30</td>
<td>0.89, 1.89</td>
</tr>
<tr>
<td>Non-responder</td>
<td>1.66</td>
<td>0.82, 3.34</td>
<td>1.55</td>
<td>0.76, 3.15</td>
</tr>
<tr>
<td>Mother left school early</td>
<td>2.02</td>
<td>1.52, 2.69</td>
<td>2.04</td>
<td>1.52, 2.73</td>
</tr>
<tr>
<td>Father current welfare receipt</td>
<td>1.44</td>
<td>0.87, 2.37</td>
<td>1.43</td>
<td>0.86, 2.38</td>
</tr>
</tbody>
</table>

Web Table 4. Discrete time survival models with person sample weights to address attrition examining high school dropout prior to completion, HILDA survey sample (2001-2008).

<table>
<thead>
<tr>
<th>Variable (level of interest)</th>
<th>Model A</th>
<th></th>
<th>Model B</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>95% CI</td>
<td>OR</td>
<td>95% CI</td>
</tr>
<tr>
<td>Prior Distress Disorder</td>
<td>2.01</td>
<td>1.28, 3.13</td>
<td>1.71</td>
<td>1.09, 2.68</td>
</tr>
<tr>
<td>Prior smoking</td>
<td>3.15</td>
<td>1.96, 5.05</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior alcohol consumption</td>
<td>1.66</td>
<td>1.05, 2.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex (Female)</td>
<td>0.71</td>
<td>0.52, 0.97</td>
<td>0.73</td>
<td>0.54, 1.01</td>
</tr>
<tr>
<td>Time (years)</td>
<td>0.80</td>
<td>0.67, 0.95</td>
<td>0.78</td>
<td>0.65, 0.93</td>
</tr>
<tr>
<td>Rental housing</td>
<td>1.71</td>
<td>1.17, 2.50</td>
<td>1.52</td>
<td>1.04, 2.23</td>
</tr>
<tr>
<td>Father (present)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not present in household</td>
<td>1.65</td>
<td>1.10, 2.46</td>
<td>1.55</td>
<td>1.03, 2.34</td>
</tr>
<tr>
<td>Non-responder</td>
<td>1.06</td>
<td>0.48, 2.37</td>
<td>1.02</td>
<td>0.46, 2.27</td>
</tr>
<tr>
<td>Mother left school early</td>
<td>1.96</td>
<td>1.43, 2.68</td>
<td>1.88</td>
<td>1.37, 2.57</td>
</tr>
<tr>
<td>Father current welfare receipt</td>
<td>1.37</td>
<td>0.74, 2.54</td>
<td>1.44</td>
<td>0.76, 2.72</td>
</tr>
</tbody>
</table>
Web Table 5. Discrete time survival models with inverse probability weights to address attrition examining high school dropout prior to completion, HILDA survey sample (2001-2008).

<table>
<thead>
<tr>
<th>Variable (level of interest)</th>
<th>Model A</th>
<th></th>
<th></th>
<th>Model B</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>95% CI</td>
<td>OR</td>
<td>95% CI</td>
<td>OR</td>
<td>95% CI</td>
</tr>
<tr>
<td>Prior Distress Disorder</td>
<td>2.09</td>
<td>1.39, 3.15</td>
<td>1.81</td>
<td>1.20, 2.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior smoking</td>
<td></td>
<td></td>
<td>3.06</td>
<td>2.01, 4.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior alcohol consumption</td>
<td></td>
<td></td>
<td>1.75</td>
<td>1.16, 2.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex (Female)</td>
<td>0.70</td>
<td>0.53, 0.93</td>
<td>0.74</td>
<td>0.56, 0.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time (years)</td>
<td>0.79</td>
<td>0.68, 0.93</td>
<td>0.77</td>
<td>0.65, 0.90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rental housing</td>
<td>1.79</td>
<td>1.28, 2.49</td>
<td>1.82</td>
<td>1.14, 2.30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father (present)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not present in household</td>
<td>1.38</td>
<td>0.98, 1.95</td>
<td>1.27</td>
<td>0.89, 1.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-responder</td>
<td>1.47</td>
<td>0.72, 2.99</td>
<td>1.37</td>
<td>0.67, 2.82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother left school early</td>
<td>2.01</td>
<td>1.52, 2.65</td>
<td>1.99</td>
<td>1.50, 2.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father current welfare receipt</td>
<td>1.58</td>
<td>0.97, 2.57</td>
<td>1.57</td>
<td>0.94, 2.57</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Web Table 6: Characteristics of the HILDA survey sample at baseline (2001) using (m=20) multiple imputation to address missing data.

<table>
<thead>
<tr>
<th>Variable (level of interest)</th>
<th>Overall%</th>
<th>Complete school (or censored)%</th>
<th>Early exit%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>15 years</td>
<td>65</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>16 years</td>
<td>35</td>
<td>36</td>
</tr>
<tr>
<td>Sex (Female)</td>
<td></td>
<td>50</td>
<td>52</td>
</tr>
<tr>
<td>Low household income</td>
<td></td>
<td>19</td>
<td>17</td>
</tr>
<tr>
<td>Reside in disadvantaged area&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td>31</td>
<td>28</td>
</tr>
<tr>
<td>Housing tenure – renter</td>
<td></td>
<td>21</td>
<td>17</td>
</tr>
<tr>
<td>No father in household</td>
<td></td>
<td>20</td>
<td>19</td>
</tr>
<tr>
<td>No mother in household</td>
<td></td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Father not complete high school</td>
<td></td>
<td>17</td>
<td>16</td>
</tr>
<tr>
<td>Mother not complete high school</td>
<td></td>
<td>37</td>
<td>33</td>
</tr>
<tr>
<td>Father current welfare receipt</td>
<td></td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Mother current welfare receipt</td>
<td></td>
<td>20</td>
<td>17</td>
</tr>
<tr>
<td>Distress Disorder (MHI &lt; 50)</td>
<td></td>
<td>9</td>
<td>7</td>
</tr>
<tr>
<td>Current smoker</td>
<td></td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Regular (≥weekly) alcoholic consumption</td>
<td></td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: <sup>a</sup> Lowest 30% on SEIFA index of relative advantage/disadvantage.

Web Table 7. Discrete time survival models to examine high school dropout prior to completion, using (m=20) multiple imputation to address missing data, HILDA survey sample (2001-2008).

<table>
<thead>
<tr>
<th>Variable (level of interest)</th>
<th>Model A</th>
<th></th>
<th>Model B</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>95% CI</td>
<td>OR</td>
<td>95% CI</td>
</tr>
<tr>
<td>Prior Distress Disorder</td>
<td>1.96</td>
<td>1.32, 2.91</td>
<td>1.74</td>
<td>1.16, 2.61</td>
</tr>
<tr>
<td>Prior smoking</td>
<td></td>
<td>3.05</td>
<td></td>
<td>2.03, 4.49</td>
</tr>
<tr>
<td>Prior alcohol consumption</td>
<td></td>
<td>1.58</td>
<td></td>
<td>1.07, 2.34</td>
</tr>
<tr>
<td>Sex (Female)</td>
<td>0.71</td>
<td>0.55, 0.92</td>
<td>0.74</td>
<td>0.57, 0.96</td>
</tr>
<tr>
<td>Time (years)</td>
<td>0.97</td>
<td>0.84, 1.11</td>
<td>0.94</td>
<td>0.81, 1.08</td>
</tr>
<tr>
<td>Rental housing</td>
<td>1.96</td>
<td>1.44, 2.66</td>
<td>1.78</td>
<td>1.30, 2.44</td>
</tr>
<tr>
<td>Father (present)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not present in household</td>
<td>1.42</td>
<td>1.04, 1.95</td>
<td>1.32</td>
<td>0.95, 1.82</td>
</tr>
<tr>
<td>Non-responder</td>
<td>1.84</td>
<td>1.05, 3.22</td>
<td>1.76</td>
<td>0.99, 3.12</td>
</tr>
<tr>
<td>Mother left school early</td>
<td>1.94</td>
<td>1.50, 2.52</td>
<td>1.92</td>
<td>1.47, 2.50</td>
</tr>
<tr>
<td>Father current welfare receipt</td>
<td>1.64</td>
<td>1.05, 2.57</td>
<td>1.59</td>
<td>1.07, 2.34</td>
</tr>
</tbody>
</table>
Web Table 8. Discrete time survival models to examine high school dropout prior to completion, using the continuous MHI-5 scale, HILDA survey sample (2001-2008).

<table>
<thead>
<tr>
<th>Variable (level of interest)</th>
<th>Model A</th>
<th></th>
<th>Model B</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR 95% CI</td>
<td>OR 95% CI</td>
<td>OR 95% CI</td>
<td>OR 95% CI</td>
</tr>
<tr>
<td>Prior Distress Disorder</td>
<td>0.99 0.98, 0.99</td>
<td>0.99 0.98, 0.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior smoking</td>
<td>3.14 2.07, 4.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior alcohol consumption</td>
<td>1.69 1.12, 2.54</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex (Female)</td>
<td>0.70 0.53, 0.93</td>
<td>0.74 0.56, 0.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time (years)</td>
<td>0.83 0.70, 0.97</td>
<td>0.80 0.68, 0.95</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rental housing</td>
<td>1.72 1.23, 2.41</td>
<td>1.57 1.11, 2.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father (present)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not present in household</td>
<td>1.41 (1.01, 1.91)</td>
<td>1.20 (0.91, 1.58)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother left school early</td>
<td>2.10 1.59, 2.77</td>
<td>2.06 1.56, 2.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Father current welfare receipt</td>
<td>1.62 1.00, 2.62</td>
<td>1.60 0.98, 2.60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Web Table 9. Discrete time survival models to examine high school dropout prior to completion, using depression, anxiety and all MHI-5 items, HILDA survey sample (2001-2008).

<table>
<thead>
<tr>
<th>Variable (level of interest)</th>
<th>Model A All items OR 95% CI</th>
<th>Model A Depression items OR 95% CI</th>
<th>Model A Anxiety items OR 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior MHI-5/dep/anx score</td>
<td>0.99 0.98, 0.99</td>
<td>0.99 .98, .99</td>
<td>0.96 0.98, 0.99</td>
</tr>
<tr>
<td>Sex (Female)</td>
<td>0.70 0.53, 0.93</td>
<td>0.71 0.54, .94</td>
<td>0.71 0.54, 0.94</td>
</tr>
<tr>
<td>Time (years)</td>
<td>0.83 0.70, 0.97</td>
<td>0.82 .70, .98</td>
<td>0.82 0.70, 0.97</td>
</tr>
<tr>
<td>Rental housing</td>
<td>1.72 1.23, 2.41</td>
<td>1.74 1.24, 2.43</td>
<td>1.70 1.21, 2.38</td>
</tr>
<tr>
<td>Father (present)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not present in household</td>
<td>1.41 1.00, 1.91</td>
<td>1.41 1.00, 1.98</td>
<td>1.43 1.01, 2.02</td>
</tr>
<tr>
<td>Non-responder</td>
<td>1.56 0.80, 3.05</td>
<td>1.56 0.78, 3.03</td>
<td>1.51 0.78, 2.95</td>
</tr>
<tr>
<td>Mother left school early</td>
<td>2.10 1.59, 2.77</td>
<td>2.10 1.59, 2.77</td>
<td>2.08 1.58, 2.74</td>
</tr>
<tr>
<td>Father current welfare receipt</td>
<td>1.62 1.00, 2.62</td>
<td>1.63 1.01, 2.62</td>
<td>1.65 1.02, 2.66</td>
</tr>
</tbody>
</table>
Web Table 10. Longitudinal random-intercept logistic regression models examining high school dropout prior to completion, HILDA survey sample (2001-2008).

<table>
<thead>
<tr>
<th>Variable (level of interest)</th>
<th>Model A</th>
<th>Model B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>95% CI</td>
</tr>
<tr>
<td>Prior Distress Disorder</td>
<td>2.32</td>
<td>1.36, 3.96</td>
</tr>
<tr>
<td>Prior smoking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior alcohol consumption</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex (Female)</td>
<td>0.63</td>
<td>0.43, 0.93</td>
</tr>
<tr>
<td>Rental housing</td>
<td>2.16</td>
<td>1.35, 3.46</td>
</tr>
<tr>
<td>Father (present)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not present in household</td>
<td>1.65</td>
<td>1.02, 2.65</td>
</tr>
<tr>
<td>Non-responder</td>
<td>1.89</td>
<td>0.78, 4.55</td>
</tr>
<tr>
<td>Mother left school early</td>
<td>2.68</td>
<td>1.76, 4.09</td>
</tr>
<tr>
<td>Father current welfare receipt</td>
<td>1.78</td>
<td>0.94, 3.40</td>
</tr>
</tbody>
</table>