Complex childhood trauma, gender and depression: patterns and correlates of help-seeking and maladaptive coping.

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Abstract

Background: Little is known about access to treatment or maladaptive coping among those with a history of childhood trauma and subsequent depressive disorder, which is often complicated by Post Traumatic Stress Disorder (PTSD).

Aims: To (1) identify profiles of complex childhood trauma among men and women with major depression, (2) examine patterns of service access and treatment or maladaptive coping (drug misuse, alcohol abuse or suicidality), and (3) associations with socio-economic/demographic characteristics, comorbid PTSD, anxiety/mood disorders and perceived social support.

Method: Analysis of Wave 3 of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) (2012-2013). Analysis of Wave 3 of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) (2012-2013). We use the Latent Class Analysis 3-step approach in Mplus to examine individual differences in childhood experiences and coping behaviour. We examined both (a) the inter-relationship of this patterning, and (b) the extent to which proactive and maladaptive coping are associated with socio-economic/demographic characteristics, comorbid PTSD, anxiety disorders and perceived social support.

Results: a diagnosis of Major Depression was recorded for 7432 people, two thirds of whom reported a history of complex childhood trauma. Maladaptive coping is associated with the most severe trauma groups, comorbid PTSD, dysthymia, and anxiety disorders.

Conclusion: Given the evidence of the current study suggesting a poorer treatment course for depression in adults with complex childhood trauma, early screening for a trauma history will facilitate preventive efforts before onset of depression, possibly mitigating a poorer treatment course.

Introduction

Epidemiologic studies in the United States of America (USA) suggest a significant imbalance between the prevalence of mood disorders and utilization of treatment, with approximately 50% seeking help (Wang, J. et al., 2005). Early life traumas are strongly associated with poor mental health , often persisting throughout the life-span (Kessler et al., 2010; McLaughlin & Sheridan, 2016). Comorbidity between depressive and anxiety disorders is common (Curran, Rosato, Ferry, & Leavey, 2020). One hypothesis derived from the network perspective on psychopathology suggests that comorbidity arises from the interplay of symptoms shared by disorders, overlapping symptoms that act as bridges between disorder-specific symptom clusters (Groen et al., 2020). Post-Traumatic Stress Disorder (PTSD), a common response to complex childhood trauma, can be debilitating and is associated with both suicidality and psychiatric mood disorder comorbidities (Kessler et al., 2005). When complex childhood trauma occurs, subsequent mood disorder is frequently complicated by PTSD and coexisting substance use disorders (Mills, Teesson, Ross, & Peters, 2006).

While drug or psychological therapies can be helpful in alleviating depression and other common mental disorders (Vos et al., 2004) many people, particularly those with a complex trauma history, don't seek the appropriate help (Wang, J. et al., 2005). For example, only 20% of people with comorbid (PTSD) may seek treatment (Mackenzie, Reynolds, Cairney, Streiner, & Sareen, 2012), with considerable delays after first onset (Wang, P. S. et al., 2007), and alcohol and drug misuse is common (Bagley & Mallick, 2000). A self-medication hypothesis is extensively supported to explain comorbid mental ill-health and substance use disorders (Robinson, Sareen, Cox, & Bolton, 2009). In one epidemiologic study Kessler et al. (2005) report increased substance abuse associated with PTSD. This maladaptive coping mechanism occurs when an individual suffering from a psychiatric disorder, in an attempt to ease their symptoms, develops an alcohol or substance use disorder (Robinson et al., 2009).

In the literature, the temporal sequalae of PTSD and substance use disorders supports the self-medication hypothesis (Brady, Killeen, Brewerton, & Lucerini, 2000; Ouimette, Read, Wade, & Tirone, 2010). Traumatic experiences and later negative emotional cues can lead to alcohol and drug craving (Coffey et al., 2002). The importance of studying this type of maladaptive coping in those with a trauma history stems from earlier work demonstrating self-medication as a common behaviour associated with negative consequences, including greater mental illness, comorbidity, and suicidal behaviour (Robinson et al., 2009).

The extent of social support structures may also contribute to the variability in long-term impairment among those with childhood trauma. Social support has been theorized to shield trauma-exposed individuals from the development of posttraumatic symptoms (Evans, Steel, & DiLillo, 2013). Perceived social support has been found to best moderate psychological distress, and the perception of such access is an important determinant of coping, access to resources and therapeutic health-seeking (Evans et al., 2013).

While gender differences have been noted for incidence, prevalence, prognosis and treatment outcomes for depression (Chang, Yip, & Chen, 2019; Franconi & Campesi, 2014), evidence on sex-specific help-seeking pathways is limited (Howard, Ehrlich, Gamlen, & Oram, 2017). While men tend to hold more negative attitudes toward the use of mental health services than women (Yousaf, Popat, & Hunter, 2015) and are less willing to seek professional support (Gonzalez, Alegría, Prihoda, Copeland, & Zeber, 2011; McManus, Bebbington, Jenkins, & Brugha, 2016) gender differences are not always clear (Curran et al., 2020)., Also, especially in the USA, access to private health care may be a deterrent for people from low-income households (Swami, 2012).

Aim: Little is known about treatment utilization and maladaptive coping, which is likely to be complicated by comorbid psychiatric disorders following complex childhood trauma. This study aims to extend the existing literature by examining an American epidemiological sample with a range of complex childhood trauma exposure histories, assessing both help-seeking and maladaptive coping mechanisms, separately and in combination, in those with Major Depressive disorder, while accounting for comorbid psychiatric disorders.

Thus, we first identified complex childhood trauma profiles in men and women with a depression diagnosis, then identify their differing patterns of ***therapeutic health-seeking*** and ***maladaptive coping***, and examine (a) the patterns associated with their inter-relationship, and (b) the extent to which types of service contact or maladaptive coping are associated with socio-economic/demographic characteristics, comorbid psychiatric disorders and perceived social support. We expect that maladaptive coping in the form of alcohol and drug use disorder and suicidality will be common in respondents with complex childhood trauma, PTSD and will be associated with increased psychiatric comorbidity, and decreased social support.

Research questions: (1) do different types of complex childhood trauma lead to different therapeutic coping or maladaptive behaviours; and (2) do these differ for males and females?

Method

Design, setting and participants: Interviews with 36,309 adults in the 2012-2013 National Epidemiologic Survey on Alcohol and Related Conditions-3, a cross-sectional representative survey from the USA). The household response rate was 72%, and person-level response rate 84%. The overall NESARC-33 response rate was 60.1%, similar to other current USA national surveys (Grant, B. F. et al., 2015).

Major depression: A structured diagnostic interview, the NIAAA Alcohol Use Disorder and Associated Disabilities Interview Schedule-5 (AUDADIS-5) (Grant, B. F. et al., 2015), assessed a range of DSM-5-defined psychiatric disorders and their criteria, both over the lifetime and the previous twelve months. This study focusses on respondents recording an AUDADIS-5 generated diagnosis of major depression (N =7,432).

Complex childhood trauma: NESARC-3 included 29 questions covering maltreatment by parents or caregivers before the age of 18 years, family support, domestic violence, and household members with alcohol, drug, mental health, or legal-related issues. This retrospective measure of adversity during childhood was modified from two standardized instruments (Keyes et al., 2012), the 70-item Childhood Trauma Questionnaire (a valid and reliable retrospective measure of child abuse and neglect) (Bernstein et al., 1994) and the Conflict Tactics Scales (a valid and reliable measure of reasoning, verbal aggression, and violence within the family) (Straus, 1979). Questions in the NESARC-3 measure are relatively similar to those in Kaiser Permanente's landmark Adverse Childhood Experiences (ACE) Study (Felitti et al., 2019)**.** Respondents reported five types of childhood maltreatment: physical neglect by parents/caregivers [five items]; emotional abuse by parents/caregivers [three items]; physical abuse [two items]; and sexual abuse [four items] by parents or caregiver. We derived a single indicator for attempted or actual sexual intercourse. Fifteen other self-reported adverse events occurring before eighteen years of age were included - domestic violence by father/male caregiver [four] parental dysfunctional behaviour [six], and five on lack of resilience related to home environment.

Therapeutic help seeking/service use: Respondents were asked if, as a result of major depression, they had ever: (1) sought professional help; (2) sought self-help support; (3) been hospitalised; or (4) admitted to hospital emergency care; or (5) been prescribed medical treatment. All responses were dichotomous (ever meeting criteria, or not).

Maladaptive coping: Respondents were asked if they had ever attempted suicide, with all responses dichotomous (ever meeting criteria, or not). We considered substance misuse as an indicator of *maladaptive coping* and whether participants had ever met DSM-5 criteria for Alcohol Use Disorder or Drug Use Disorder (Watts, O'Sullivan, Panlilio, & Daniels, 2020).

The 12-item **Interpersonal Support** Evaluation List (ISEL-12) assessed perceived interpersonal support at time of interview (Cohen & Hoberman, 1983). Possible scores range from twelve to forty-eight, with higher scores indicating greater levels of social support. The ISEL-12 has good convergent and divergent validity and adequate test-retest and internal reliability (Dinenberg, McCaslin, Bates, & Cohen, 2014).

Comorbidity of Psychiatric disorders: We also controlled for the presence of other lifetime Axis I psychiatric disorders, including PTSD, dysthymia, panic disorder, agoraphobia, social phobia, specific phobia and generalized anxiety disorder. Lifetime presence of panic disorder, agoraphobia, social phobia, specific phobia or generalized anxiety disorder were amalgamated as one single indicator.

Sociodemographic Measures included age, race-ethnicity, education level, personal income, and marital status.

Ethical approval/ Informed Consent: All potential NESARC-3 respondents were informed in writing about the nature of the survey, the statistical uses of the survey data, the voluntary aspect of their participation and the US Federal laws that rigorously provide for the confidentiality of identifiable survey information. Those respondents consenting to participate after receiving this information were interviewed. The research protocol, including informed consent procedures,

received full ethical review and approval from the Westat Institutional Review Board and the Combined Neuroscience Institutional Review Board of the National Institutes of Health.

Preparatory Analyses

Table 1 reports, separately for males and females with a lifetime diagnosis for major depression, frequencies of exposure to both complex childhood trauma and therapeutic help seeking or maladaptive coping.

Latent Class Analysis: (LCA) identifies clusters of categories of reported (in this case) adversity experiences occurring before age eighteen. The same approach identified categories of therapeutic help seeking or maladaptive coping. Separate analyses were conducted for males and females. Fit indices, based on the adversity and coping questions, were evaluated for LCA models in **Table 2**. Solutions for seven classes were estimated, with log-likelihoods, information criteria (IC) and classification accuracy examined. To identify the best solution we considered a combination of statistical criteria, model parsimony, interpretability, meaningfulness and the need for theory and judgement. In **Table 2a** the lowest value of the BIC for females occurred in the 6-class solution, while the SSABIC was lower for the 7-class solution. However, given that the VLMR indicated the 6-class solution as optimal, it was selected for analysis. For males, results of LCA are reported in **Table 2b:** here results indicated a 5-class solution as preferable, suggested by both the BIC and VLMR test. Results from exploratory LCA models on coping are reported in **Table 2c** (females) - overall, based on the BIC and the SSABIC, results suggest the 6-class solution as preferable. Similarly, for males **Table 2d** reports results for therapeutic help seeking or maladaptive coping **-** here results indicate the 5-class solution as optimal.

Structural relations between categories: once satisfactory LCA models describing patterns of lifetime exposure to adversity and therapeutic help seeking or maladaptive coping were identified we explored the patterns between them. One of the difficulties in testing structural relationships between

latent classes lies in controlling for any uncertainty associated with the assignment of the classes (Nylund-Gibson, Grimm, Quirk, & Furlong, 2014). Treating classes as if they were qualities measured without error and uncertainty may bias model parameters and therefore subsequent results. We applied a recently developed solution to this problem which involves a 3-step approach: firstly, estimating satisfactory latent class models for the patterns of interest (in this case early life *exposure to adversity*, and *therapeutic help seeking or maladaptive coping*); secondly, assigning individuals to the most likely class; and finally, assigning individuals into a latent class considered as a nominal indicator of their latent class, with measurement parameters fixed at values which take account of the measurement error in class assignment (Nylund-Gibson et al., 2014). This robust approach has the advantage of estimating the measurement models in a separate step, whereby the estimation is neither influenced by heterogeneity between the indicators of the different processes of interest, nor by other covariates that may be included in the structural model.

Using this approach, we tested association between the process of interest by regressing the latent classes of therapeutic help seeking or maladaptive coping behaviours onto the patterns of exposure to adversity. Because latent classes are nominal variables, we ran multinomial logistic regressions, indicating changes in the Odds Ratios of displaying a pattern of therapeutic coping rather than another taken as the reference category across groups with different adverse experiences.

Results

This analysis is based on 7,432 respondents who recorded a diagnosis of Major Depression, stratified by gender: 2,335 (31%) males and 5,097 (69%) females. **Table 1** reports the gender-specific prevalence of indicators representing either complex childhood trauma, therapeutic coping or maladaptive behaviours.

Figures 1 and **2**, for females and males respectively, show sample proportions and plot-estimated probabilities for each LCA solution. Four models were estimated: complex childhood trauma (**1a** & **2a**) and therapeutic or maladaptive coping (**1b** & **2b**).

Complex childhood trauma. For females **(1a)** the LCA indicated six profiles: (1) the largest class (35%) reported no adverse experience; (2) 24% reported emotional and physical abuse; (3) 14% reported multiple adversities (excluding sexual abuse); (4) 13% reported exposure to multiple adverse events, including sexual abuse, domestic violence, and physical and emotional abuse; (5) smaller proportions (7%) reported experiences of sex abuse; and (6) household dysfunction across the parental indicators (6%). For males **(2a)** five profiles were identified: (1) 41% recorded no exposure; (2) 31% were exposed to neglect and abuse; (3) 18% exposed to abuse, violence and household dysfunction; (4) 7% reported exposure to multiple adversity, including sexual abuse; and finally (5) 3% reported exposure to sexual abuse only.

Patterns of therapeutic coping. For females **(1b)** the LCA solution comprises: (1) no therapeutic coping was reported by 26%; (2) the largest group (39%) sought professional help and received prescription drugs; (3) 17% sought professional help for depression, alcohol misuse and drug use disorder; (4) 7% sought professional help and had been hospitalized due to depression; (5) smaller groups (totalling 6%) reporting multiple behaviours, including drug use and suicide attempts; and finally (6) a residual group reporting alcohol and drug misuse only.

For males **(2b)** the LCA comprises: (1) 37% reported no therapeutic coping; (2) 20% reporting alcohol misuse and seeking professional help; (3) 17% seeking professional help and using prescription depression medication; (4) 15% reporting alcohol and drug use disorder only; and finally (5) 11% reporting multiple therapeutic coping.

Associations between adversity exposure and therapeutic coping

Having selected the sex-specific latent class measurement models for adversity exposure and help-seeking, we investigated the relationship between the generated therapeutic or maladaptive coping classes and patterns of adversity exposures. **Figure 3** reports the cumulative proportions of therapeutic coping patterns within the adversity categories for males and females.

Tables 3 & 4 (females and males respectively) reports the Odds Ratios (ORs) associated with adversity exposures - estimated using the 3-step approach separately for each therapeutic coping sub-group (with *no therapeutic or maladaptive coping* the reference category for each analysis). For each, two models are presented – an unadjusted model, and fully adjusted models which further examines the socio-demographic and socio-economic relationships, and other psychiatric diagnoses within therapeutic or maladaptive coping sub-types.

Compared to females (Table 3) not exposed to adversity, those reporting *sexual abuse* were more likely to be represented in both the sub-group using *multiple coping strategies* (which includes attempted suicide) (OR=5.09: 95% CI=2.50, 10.39); and more pro-active behaviours *seeking professional help* – though combined with hospitalisation (OR=4.50:2.61, 7.77), or problems with drugs and alcohol (OR =3.32: 1.71, 6.46). A similar pattern is apparent in those reporting *multiple early life adversities*: with high likelihoods in all the therapeutic or maladaptive sub-groups – for example, the group exposed to alcohol and drug misuse (OR=11.15: 4.86, 25.53) and reporting multiple coping mechanisms (OR=10.85: 6.39, 18.39). The remaining ELA groups generally show more modest excess likelihoods in relation to the coping mechanism sub-groups, with the exception of *dysfunctional home environments* which records much higher odds (OR=9.55: 2.18, 41.93).

Generally, males (**Table 4**) show more muted effects associated with early life adversities over all the therapeutic or maladaptive coping sub-groups - those exposed to sex abuse reported increased likelihood of multiple therapeutic or maladaptive coping, including suicidality (OR=3.39: 95% CI=1.20, 9.55), and also recorded a higher likelihood of receiving professional help alongside drug use. Notably, compared to those reporting no adversity, those exposed to abuse and violence (excluding sexual abuse) as well as dysfunctional parenting were more likely to record multiple therapeutic or maladaptive coping (including attempted suicide) (OR=2.94: 1.78, 4.85); seek professional help (and resort to drug misuse (OR=3.19: 1.91, 5.34); or misuse drug and alcohol as their main coping strategy (OR=2.63: 1.52, 4.54).

For both females and males, fully adjusted models did not greatly alter the unadjusted associations recorded above, although most were attenuated. The fully adjusted models allow consideration of the socio-demographic/economic, social and health indicators associated with the derived population sub-groups.

Sought professional help and took prescription medication for depression: Among women, seeking professional help and receiving prescriptions was associated with higher educational attainments (OR=1.49: 95% CI=1.17, 1.89 and OR=1.53: 1.20, 1.95) and White (OR=2.58: 2.05, 3.24). Males seeking professional help were older (>35 years) and more likely to be White (OR=2.34: 1.33, 4.13); and better educated (OR=2.07: 1.18, 3.64 and OR=3.02: 1.80, 5.06). Both women and men in this group reported excess comorbid psychiatric disorders: PTSD (women: OR=1.57: 1.14, 2.15); dysthymia (OR=2.36: 1.73, 3.23 and OR=2.22: 1.34, 3.67) and anxiety (OR=1.66: 11.35, 2.05 and OR=2.79: 1.78, 4.36).

Professional help and hospitalisation (derived for females only): in this sub-group women were more likely to be White (OR=1.65: 95% CI=14, 2.38); divorced (OR=2.52: 1.51, 4.22); more income-

deprived (OR=0.51: 0.31, 0.86, and less likely to report social support (OR=0.79: 0.69, 0.92). They were also more likely to report have comorbid PTSD, dysthymia and anxiety disorder (OR=1.78: 1.17, 2.73; OR=4.59: 3.15, 6.70; OR=2.07: 1.52, 2.82, respectively).

Professional help-seeking & drug misuse. Here women were more likely to be married or divorced than separated/widowed; younger (OR=0.60: 95%CI=0.43, 0.84 and OR=0.19: 0.12, 0.30 for those aged 36-54 and fifty-five or more respectively when compared with those 18-34); of white ethnicity (OR=6.67: 4.27, 10.41) when compared against those reporting as Black; more likely to be better educated than not (OR=1.95: 1.31, 2.91and OR=2.13: 1.43, 3.16); and more likely to be better off (OR=1.84: 1.07, 3.15 for women with income levels at $70,000+). Males were more likely to be younger; of white ethnicity (OR=3.38: 2.14, 5.35); be better educated compared with those least well educated (OR=2.26: 1.44, 3.55 and OR=2.35: 1.50, 3.67). For both males and females, the risks associated with comorbid psychiatric disorders were consistently higher - with increased likelihoods for PTSD (OR=2.08: 1.41, 3.06 and OR=2.65: 1.56, 4.49 respectively), dysthymia (OR=4.13: 2.84, 6.01 and OR=2.80: 1.84, 4.26) and anxiety disorder (OR=3.32: 2.49, 4.44 and OR=2.12: 1.44, 3.11).

Substance misuse: women in this sub-group were similarly more likely to be white (OR=3.19: 95% CI=2.02, 5.05); younger; and better educated. Men were more likely to be divorced, have low perceived social support (OR=0.66: 0.55, 0.80), and be more likely to be income-deprived. Both women and men were similarly likely to record comorbid PTSD (OR=3.65: 2.41, 5.51; OR=3.03: 1.74, 5.27 respectively), dysthymia (OR=6.22: 4.10, 9.44; OR=2.94: 1.92, 4.50) and anxiety disorder (OR=3.11: 2.18, 4.43 and OR=2.69: 1.82, 3.96).

All therapeutic coping behaviours: women in this sub-group were similarly more likely to be white (OR=3.19: 95%CI=2.02, 5.05); younger; and better educated. Men were more likely to be divorced, have low perceived social support (OR=0.66: 0.55, 0.80), and be more likely to be income deprived.

Both women and men were similarly likely to record comorbid PTSD (OR=3.65: 2.41, 5.51; OR=3.03: 1.74, 5.27 respectively), dysthymia (OR=6.22: 4.10, 9.44; OR=2.94: 1.92, 4.50) and anxiety disorder (OR=3.11: 2.18, 4.43 and OR=2.69: 1.82, 3.96).

Discussion

To our knowledge this is the first study to examine gender differences in early life trauma and patterns of adult therapeutic or maladaptive coping for those with depression. In this study almost two thirds of women and men with depression report a history of complex childhood trauma. If depression associated with childhood trauma is a distinct subtype of depression with its own aetiology - as suggested by Grant et al 2014 - our study highlights disparate therapeutic or maladaptive coping behaviours and outcomes based on predefined risk profiles. The types of maladaptive coping defined in our study stem from earlier work demonstrating the sequalae of self-medication as a common response to child trauma, associated with negative consequences, including, comorbid disorders and suicidal behaviour (Robinson et al., 2009). Our findings support this dose-response effect (Brady, Killeen, Brewerton, & Lucerini, 2000; Ouimette, Read, Wade, & Tirone, 2010). The study supports the need for early detection of childhood trauma: in the context of our findings evidence is consistent with poorer treatment outcomes for depression, especially when co-occurring with complex childhood trauma and other psychiatric disorders like PTSD.

A distinct association was noted between all therapeutic or maladaptive coping groups and comorbid PTSD, dysthymia, and anxiety disorders, with the exception of males in the proactive help-seeking group, who didn't report PTSD. Comorbidity between PTSD and major depressive disorder is common, with approximately half of people with PTSD also having a diagnosis of major depressive disorder (MDD) across diverse epidemiological samples (Grant, M. M. et al., 2014). Comorbidity may reflect imprecise symptom classification, resulting in two discrete diagnoses. Support for this explanation is evident in comorbidity rates based on different versions of the Diagnostic and

Statistical Manual of Mental Disorders (DSM), where changes have been made to the number of symptoms required for a diagnosis of PTSD, but not MDD. It is also possible that co-occurrence of PTSD and MDD represents a trauma-related phenotype that is distinct from MDD alone and reflects a fundamental dimension of risk for psychopathology following trauma exposure (Grant, M. M. et al., 2014). Support for this explanation is less straightforward but may be inferred from research such as our study where the focus is on examination of both disorders (and their comorbidity) in relation to trauma profiles and help-seeking correlates.

Dissociative depression was proposed as a new construct to be considered in future research (Sar, Akyüz, Öztürk, & Alioğlu, 2013). The strong relationship between depression (often treatment resistant) and dissociation is well known (Sar et al., 2013), this is common when there is an elevated rate of childhood adversity (Sar & Ross, 2006). These patients also have high levels of comorbid psychiatric conditions including PTSD, substance abuse, eating disorders, self-destructiveness, and suicidality (Foote, Smolin, Neft, & Lipschitz, 2008), invariably fitting the construct of 'complex posttraumatic stress disorder' (CPTSD) (Hyland, Shevlin, Fyvie, & Karatzias, 2018). Unidentified comorbid conditions are often the cause of on-going depression (Parker, Malhi, Crawford, & Thase, 2005), dissociation commonly interferes with treatment success (Sar & Ross, 2006). With a growing body of support for CPTSD as a unique disorder (Hyland et al., 2018), the need for interventions to target persistent symptoms is important, especially for those with a trauma history (Ford, 2015). Our study highlights distinct behavioural features associated with childhood trauma profiles which can inform clinical intervention.

Depressed adults with a history of complex childhood trauma are less likely to respond well to pharmacotherapy when compared to those reporting none (Klein et al., 2009). In our study distinct patterns of therapeutic or maladaptive coping are evident - a large proportion of people are pro-active and seek appropriate professional help by way of prescription medication, therapy and attending

support groups. In contrast, maladaptive coping behaviours, such as attempted suicide, alcohol and drug use disorder, are also reported – these are associated with the most severe trauma profiles, including sexual abuse, possibly reflecting a complex trauma history, PTSD or treatment non-response. A recent review of psychological interventions aimed at preventing relapse and recurrence of depression observed that a history of complex childhood trauma was one of the strongest risk factors for depressive relapse (Bockting, Hollon, Jarrett, Kuyken, & Dobson, 2015).

Our findings underpin the observation that for younger women, age is a potential risk factor associated with more maladaptive coping mechanisms like alcohol abuse and drug misuse. In a recent systematic review (Magaard, Seeralan, Schulz, & Brütt, 2017), the association between age and help-seeking was analysed in seventeen different studies and was mainly computed comparing different age groups. In eight of these, age was significantly associated with help-seeking behaviour (with two reporting a positive association between age and help-seeking). Similar to findings reported here, adolescents with alcohol use disorder are at higher risk for MDD in particular at a younger age (Pedrelli, Shapero, Archibald, & Dale,). During adolescence, several drinking behaviours, including weekly alcohol use and heavy drinking, increase the risk for depressive symptoms and MDD, while during young adulthood primarily Alcohol Use Disorder, but not other drinking behaviours, is associated with increased risk for MDD (Pedrelli et al.,).

Males reporting all therapeutic or maladaptive coping behaviours recorded a dose-response relationship, with more severe early life traumas, including sexual abuse and a more negative view of their perceived social support. Having a maladaptive interpersonal style and subsequent poor social relationships often leads to greater social stress (Hankin, Kassel, & Abela, 2005) - something of particular relevance to depression (Hammen, 2005) as childhood trauma has links with difficulties in interpersonal functioning (Huh, Kim, Yu, & Chae, 2014). A person with an insecure attachment style may tend to seek excessive reassurance from others or become overly sensitive to social rejection

(Massing-Schaffer, Liu, Kraines, Choi, & Alloy, 2015). These interpersonal styles have been linked with risk for depression through elevated rates of life stress (i.e., stress influenced by the individual's own thoughts and behaviour) (Liu, Kraines, Massing-Schaffer, & Alloy, 2014).

Given the evidence of the current study suggesting a poorer treatment course for depression in adults with ELA, early screening for a trauma history will facilitate preventive efforts before onset of depression, possibly mitigating a poorer treatment course (Wiersma, 2015). Ideally, psychosocial issues should be picked up in primary care settings (Fordwood, Asarnow, Huizar, & Reise, 2007) as early detection of childhood trauma through routine screening will allow intervention before onset of chronic and more deleterious mental-illness (Nanni, Uher, & Danese, 2012). Given the dose-response relationship between complex childhood trauma and depression (Wiersma, 2015) more research is needed to evaluate patterns in resilience, social support and types of maladaptive or therapeutic help-seeking.

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Table 1: Frequency of exposure to complex childhood trauma, therapeutic or maladaptive coping behaviour in the AUDADIS interview as reported by individuals with a DSM-5 lifetime diagnosis for major depression (N=7432) NESARC 3 (2011-2012)

Exposures recalled before age 18	Males (n, %)	Females (n, %)
Neglect by parent or caregiver		
You were made do chores that were too difficult or dangerous	654 (18.14)	1239 (33.31)
You were left alone or unsupervised before age 10	795 (20.13)	1393 (34.94)
Went without things you needed	373 (19.71)	835 (34.56)
You were made to go hungry or did not receive regular meals	273 (21.96)	565 (37.00)
You did not get treatment when you were sick	266 (23.52)	680 (40.12)
Emotional abuse by parent or caregiver		
Swore, insulted or said hurtful things to you	1220 (22.07)	2491 (37.06)
Threatened to hit you or threw something at you	1111 (20.63)	2123 (34.72)
Made you fear that you would be physically hurt or injured	930 (22.87)	1887 (38.72)
Physical abuse by parent or caregiver		
You were pushed, grabbed, shoved, slapped or hit	1232 (21.03)	2349 (35.79)
You were hit so hard you had marks or bruises or were injured	685 (23.41)	1426 (39.88)
Domestic violence by father or adult male		
Your mother was pushed, grabbed or slapped	573 (22.45)	1384 (36.11)
Your mother was hit with a fist or with something hard	380 (24.02)	933 (36.69)
Your mother was repeatedly hit for at least a few minutes	268 (24.41)	733 (36.85)
Your mother was threatened or hurt with a knife or gun	153 (28.87)	420 (39.36)
Sexual abuse by an adult or other person		
You were fondled or touched in a sexual way	244 (31.65)	1238 (42.40)
You were made to touch or fondle someone in a sexual way	168 (30.22)	807 (43.16)
Someone attempted sexual intercourse with you	159 (31.36)	822 (42.35)
Someone had sexual intercourse with you	114 (29.01)	595 (42.96)
Indicators of parental dysfunctional behaviour at home		
Parental alcoholism	759 (22.25)	1727 (34.57)
Parental drug use	236 (26.67)	507 (36.55)
Parent incarcerated	288 (23.19)	670 (36.67)
Parental mental-ill health	208 (28.34)	496 (41.79)
Parent attempted suicide	125 (29.69)	296 (40.11)
Parent committed suicide	37 (26.24)	69 (36.32)
Indicators of lack of resilience building at home		
Nobody in my family wanted me to be a success	89 (11.07)	283 (24.54)
Nobody in my family helped me feel important or special	70 (13.11)	219 (26.23)
My family was not a source of strength and support	74 (14.80)	314 (34.17)
I did not feel I was part of a close-knit family	132 (20.25)	436 (38.05)
Nobody in my family believed in me	61 (16.09)	214 (31.99)
Therapeutic/maladaptive characteristics reported		
Lifetime DSM-5 alcohol use disorder	1,215 (21.77)	1,757 (39.75)
Lifetime DSM-5 drug use disorder	601 (30.02)	729 (47.15)
Talking therapies for mood?	1,249 (53.40)	3,459 (64.33)
Use a self-help or support group to improve your mood?	378 (51.29)	1,011 (63.79)
Hospitalised overnight or longer because of low mood?	297 (49.58)	714 (63.75)
Attend an emergency room for help with low mood?	261 (47.20)	726 (60.65)
Receipt of prescription medicines to improve mood?	992 (52.82)	2,982 (65.04)
Did you attempt suicide or try to kill yourself?	298 (64.22)	755 (71.84)

Note: Childhood adversities were defined in relation to an accumulation of adverse events (each as occurring *almost never*, *sometimes*, *often* or *very often* in the household before the age of eighteen). The event-types which could have been experienced by the respondent were summarised into categories- except for sexual abuse-in this instance individual categories improve model fit.

Table 2a: Fit indices of the LCA to profile *complex childhood trauma* in females

Model	Log	AIC	BIC	SSABIC	Entropy	VLMR mean	VLMR SD	VLMR P
1 Class	-26559.17	53138.34	53203.66	53171.88	.	.	.	.
2 Class	-23315.60	46673.20	46810.37	46743.64	0.76	87.92	115.62	0.00
3 Class	-21875.10	43814.20	44023.23	43921.54	0.85	-63.27	115.46	0.00
4 Class	-21515.19	43116.38	43397.25	43260.62	0.85	7.45	17.44	0.00
5 Class	-21440.44	42988.87	43341.61	43170.01	0.77	28.93	25.22	0.00
6 Class	-21386.05	42902.10	**43326.68**	43120.13	0.74	**3.69**	**25.12**	**0.00**
7 Class	-21340.51	42833.01	43329.45	**43087.95**	0.74	33.91	38.63	0.08
8 Class	-21318.16	42810.32	43378.62	43102.16	0.76	-5.38	36.92	0.02

Table 2b: Fit indices of the LCA to profile *complex childhood trauma* in males

Model	Log	AIC	BIC	SSABIC	Entropy	VLMR mean	VLMR SD	VLMR P
1 Class	-10400.90	20821.80	20879.34	20847.57	.	.	.	.
2 Class	-9280.66	18603.33	18724.16	18657.44	0.75	43.75	46.44	0.00
3 Class	-8814.30	17692.61	17876.74	17775.06	0.84	-18.90	44.23	0.00
4 Class	-8708.40	17502.81	17750.23	17613.61	0.79	12.64	9.23	0.00
5 Class	-8631.57	17371.14	**17681.86**	17510.29	0.81	**15.93**	**17.49**	**0.00**
6 Class	-8605.65	17341.30	17715.31	**17508.80**	0.75	67.14	72.51	0.42
7 Class	-8588.81	17329.61	17766.92	17525.46	0.77	608.97	786.84	0.90
8 Class	-8576.50	17327.01	17827.61	17551.20	0.78	3.61	20.37	0.12

Table 2c: Fit indices of the LCA to profile *therapeutic or maladaptive coping* in females

Model	Log	AIC	BIC	SSABIC	Entropy	VLMR mean	VLMR SD	VLMR P
1 Class	-20327.75	40671.50	40723.79	40698.37	.	.	.	.
2 Class	-18582.24	37198.47	37309.59	37255.57	0.74	10.93	10.15	0.00
3 Class	-17872.65	35797.31	35967.26	35884.64	0.81	8.37	10.64	0.00
4 Class	-17679.25	35428.49	35657.27	35546.05	0.86	30.97	35.05	0.00
5 Class	-17608.48	35304.96	35592.56	35452.74	0.77	7.86	42.06	0.00
6 Class	-17558.59	35223.18	**35569.61**	**35401.20**	0.76	14.85	38.88	0.03
7 Class	-17536.35	**35196.71**	35601.97	35404.95	0.79	-12.63	34.45	0.02

Table 2d: Fit indices of the LCA to profile *therapeutic or maladaptive coping* in males

Model	Log	AIC	BIC	SSABIC	Entropy	VLMR mean	VLMR SD	VLMR P
1 Class	-9517.69	19051.39	19097.43	19072.02	.	.	.	.
2 Class	-8574.35	17182.70	17280.55	17226.53	0.78	9.74	10.54	0.00
3 Class	-8295.26	16642.51	16792.16	16709.56	0.81	8.72	9.85	0.00
4 Class	-8214.85	16499.70	16701.15	16589.95	0.78	9.97	9.42	0.00
5 Class	-8176.69	16441.38	**16694.64**	**16554.84**	0.74	**7.65**	**11.09**	**0.00**
6 Class	-8160.21	16426.41	16731.47	16563.08	0.77	24.77	21.14	0.24
7 Class	-8143.54	**16411.08**	16767.94	16570.95	0.78	-11.30	22.05	0.00

Log= log likelihood function, maximum likelihood estimation. AIC= Akaike information criteria. BIC= Bayesian information criteria. SSABIC= Sample size adjusted BIC. VLMR= Vuong–Lo–Mendell–Rubin Test.

Figure 1a: female profile plots for *complex childhood trauma*

Early Life Adversity (ELA) reported by females with Major Depression Disorder
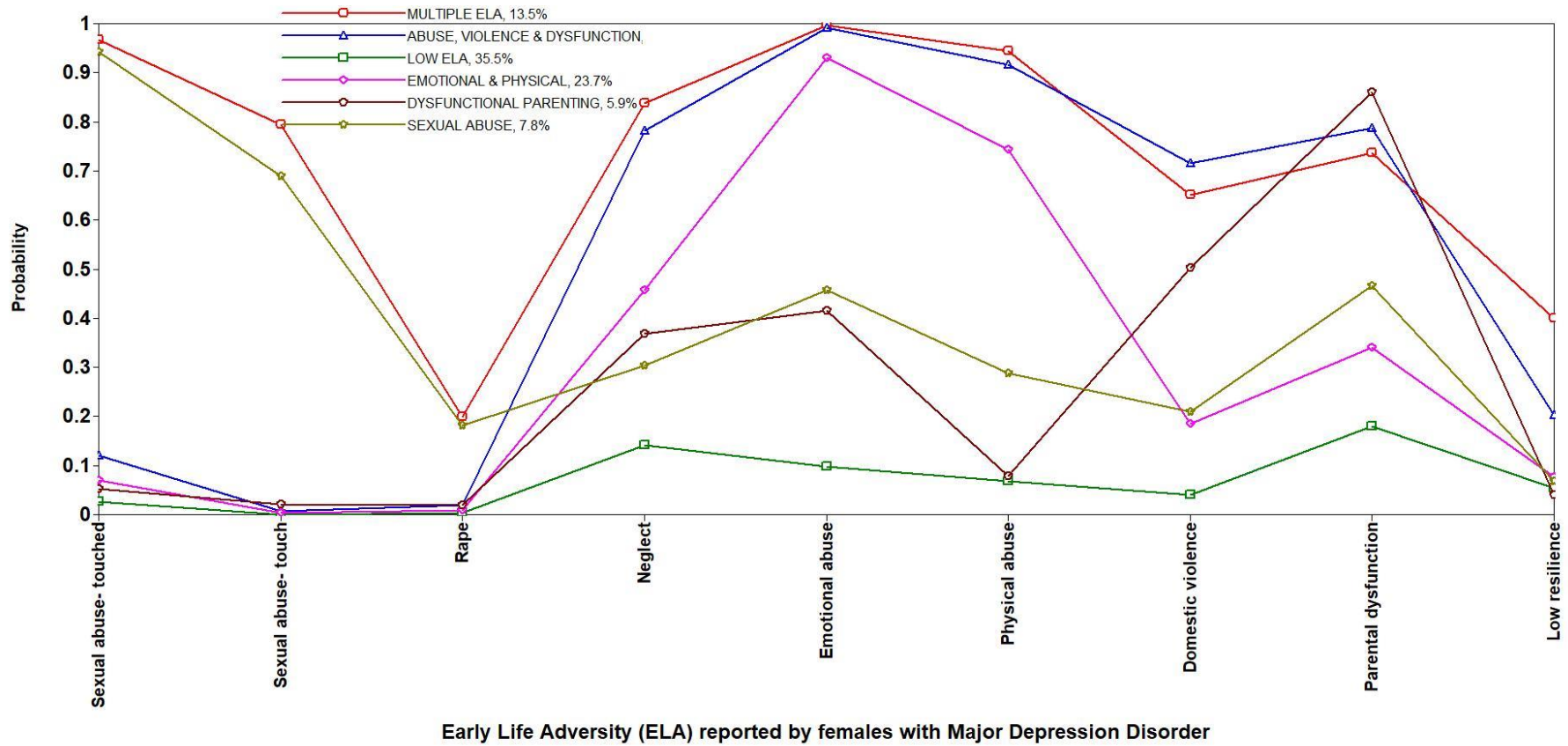
Figure 1b: female profile plots for *therapeutic or maladaptive help-seeking* and *coping mechanisms*
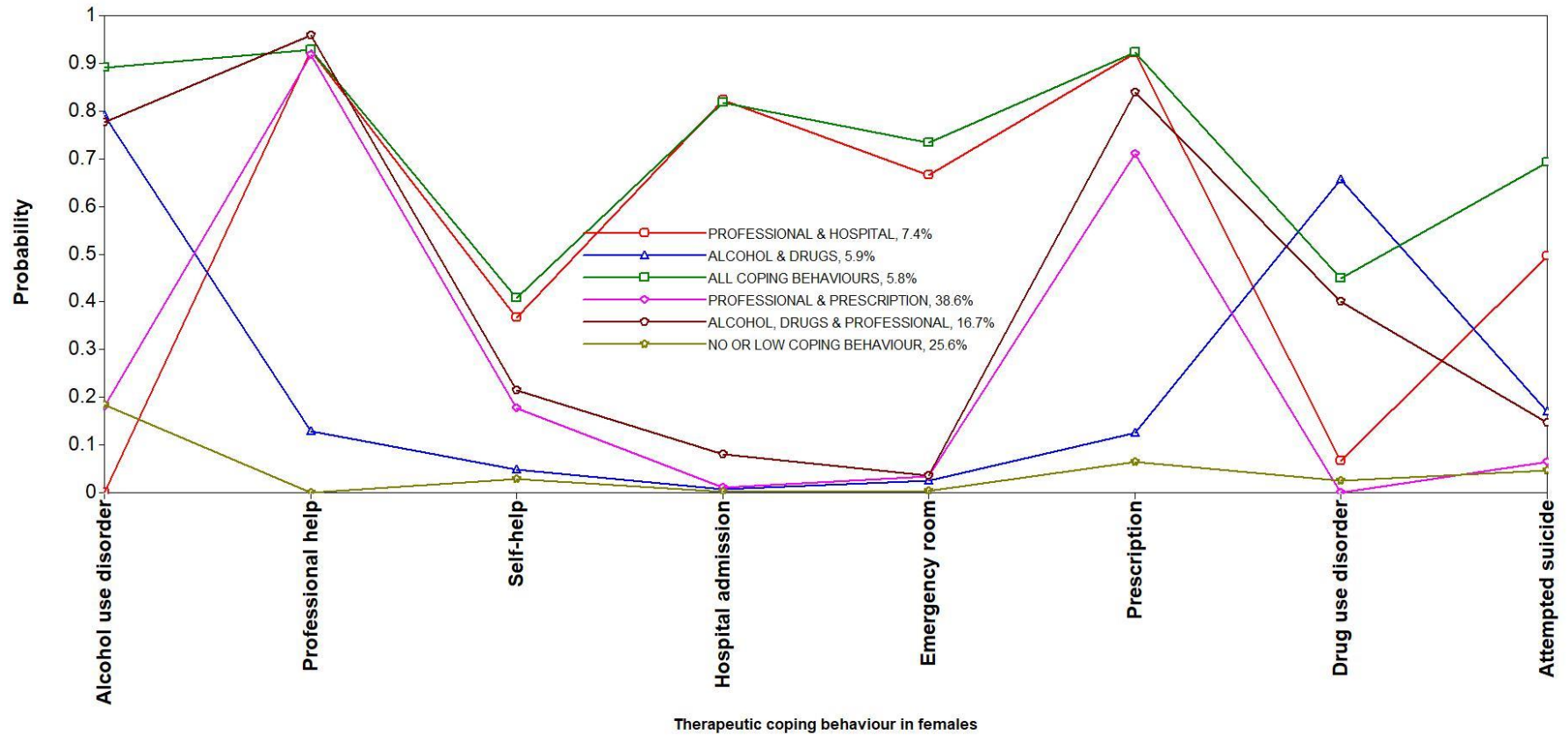
Figure 2a: male profile plot for *complex childhood trauma*

Figure legend:
- MULTIPLE ELA, 6.5%
- ABUSE, VIOLENCE & DYSFUNCTION, 18.1%
- LOW ELA, 41.1%
- EMOTIONAL & PHYSICAL, 31.3%
- SEXUAL ABUSE, 2.9%

Y-axis: Probability

X-axis categories: Sexual abuse- touched, Sexual abuse- touch, Rape, Neglect, Emotional abuse, Physical abuse, Domestic violence, Parental dysfunction, Low resilience

Early Life Adversity (ELA) reported by males with Major Depression Disorder

Figure 2b: male profile plot for *therapeutic or maladaptive help-seeking* and *coping mechanisms*

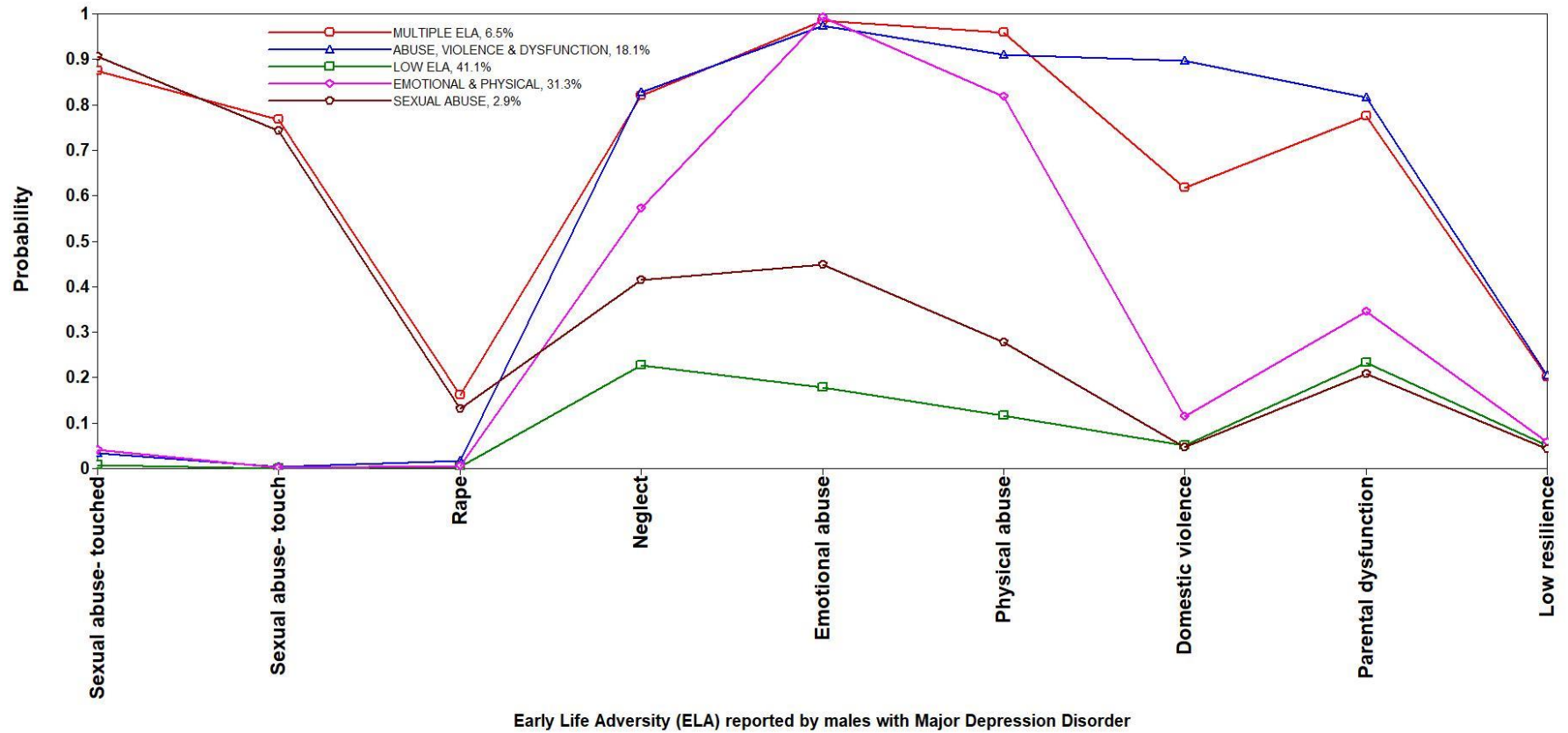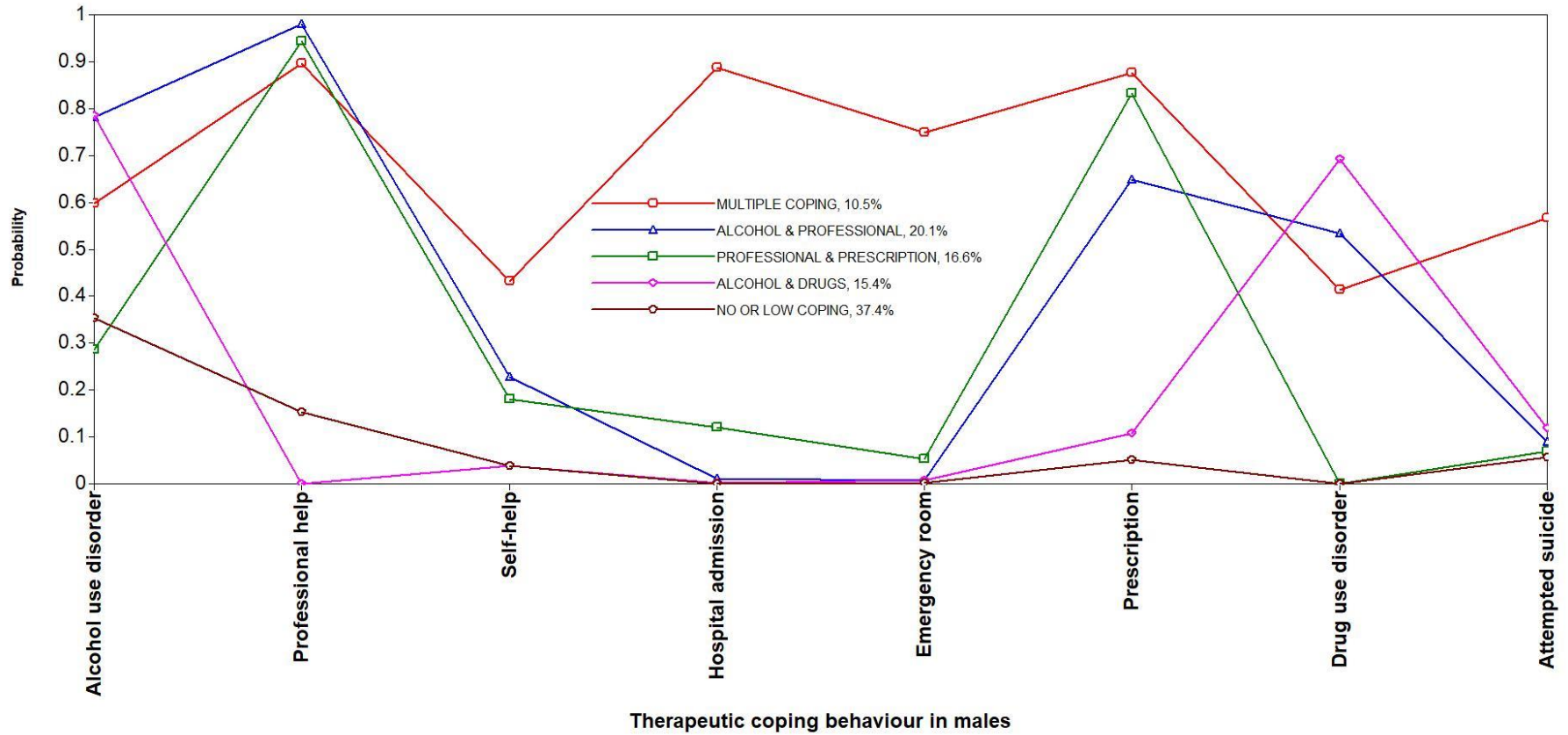**Table 3 (*Females*). Relationship between *coping mechanisms£* and *complex childhood trauma (ELA) profiles*. Results represent Odds Ratios (& 95% Confidence Intervals) from a series of multinomial logistic regressions**

	professional help-seeking & hospital involvement	professional help-seeking & prescription medication	professional help-seeking & drug misuse	alcohol & drug misuse	multiple coping mechanisms£
unadjusted models					
Multiple ELA	**3.95 (2.43, 6.42)*****	1.38 (0.91, 2.09)	**6.91 (4.29, 11.13)*****	**11.15 (4.86, 25.53)*****	**10.85 (6.39, 18.39)*****
Sexual abuse	**4.50 (2.61, 7.77)*****	**1.89 (1.20, 2.98)****	**3.32 (1.71, 6.46)*****	3.12 (0.84, 11.57)	**5.09 (2.50, 10.39)*****
Abuse & parental	1.72 (0.98, 3.02)	1.05 (0.69, 1.59)	**2.75 (1.58, 4.79)*****	**6.61 (2.88, 15.17)*****	**3.63 (1.98, 6.66)*****
Emotional & physical	0.89 (0.43, 1.82)	**1.76 (1.28, 2.42)*****	**3.74 (2.32, 6.04)*****	1.46 (0.33, 6.42)	1.09 (0.39, 3.03)
Dysfunctional home	1.56 (0.39, 6.20)	1.68 0.71, 3.99)	**3.77 (1.28, 11.12)***	**9.55 (2.18, 41.93)****	2.51 (0.53, 11.98)
No adversity (reference)	1.00	1.00	1.00	1.00	1.00
fully adjusted models$					
Multiple ELA	**2.36 (1.37, 4.06)****	1.44 (0.94, 2.22)	**5.39 (3.13, 9.29)*****	**8.99 (3.79, 21.28)*****	**6.96 (3.81, 12.73)*****
Sexual abuse	**3.21 (1.71, 6.03)*****	**1.71 (1.06, 2.79)***	**2.42 (1.18, 4.96)***	2.17 (0.46, 10.14)	**2.97 (1.28, 6.92)***
Abuse & parental	1.22 (0.66, 2.24)	1.04 (0.69, 1.56)	**2.24 (1.20, 4.18)***	**4.59 (1.84, 11.40)****	**2.51 (1.29, 4.90)****
Emotional & physical	0.75 (0.34, 1.64)	**1.65 (1.17, 2.31)****	**3.10 (1.88, 5.12)*****	1.92 (0.51, 7.21)	1.15 (0.48, 2.75)
Dysfunctional home	2.14 (0.48, 9.42)	2.16 (0.87, 5.34)	3.80 (0.95, 15.23)	**9.59 (2.36, 39.10)****	3.02 (0.48, 19.11)
No adversity (reference)	1.00	1.00	1.00	1.00	1.00
Separated/widowed	1.00	1.00	1.00	1.00	**1.00**
Married	1.54 (0.94, 2.53)	1.15 (0.88, 1.50)	**1.77 (1.04, 3.01)***	1.54 (0.66, 3.59)	0.87 (0.50, 1.52)
Divorced	**2.52 (1.51, 4.22)*****	1.27 (0.93, 1.72)	**3.10 (1.79, 5.40)*****	2.38 (0.91, 6.20)	1.58 (0.88, 2.86)
Never married	0.96 (0.54, 1.70	0.84 (0.61, 1.16)	1.52 (0.85, 2.74)	1.71 (0.70, 4.17)	0.77 (0.41, 1.44)
Age 36-54 (ref=18-35)	0.79 (0.53, 1.17)	1.23 (0.96, 1.57)	**0.60 (0.43, 0.84)****	**0.35 (0.20, 0.62)*****	**0.65 (0.42, 0.98)***
Age 55 plus	0.90 (0.58, 1.39)	1.30 (1.00, 1.69)	**0.19 (0.12, 0.30)*****	**0.13 (0.06, 0.29)*****	**0.31 (0.19, 0.53*****
Primary education	1.00	1.00	1.00	1.00	1.00
Intermediate level	1.15 (0.80, 1.65)	**1.49 (1.17, 1.89)*****	**1.95 (1.31, 2.91)****	1.28 (0.78, 2.10)	**1.58 (1.03, 2.42)***
Tertiary education	1.09 (0.75, 1.59)	**1.53 (1.20, 1.95)*****	**2.13 (1.43, 3.16)*****	0.91 (0.51, 1.61)	**1.91 (1.24, 2.93)****
Income: <$35000	1.00	1.00	1.00	1.00	1.00
Income: $35000-$69,999	**0.51 (0.31, 0.86)***	1.11 (0.87, 1.41)	1.30 (0.93, 1.82)	**0.35 (0.13, 1.00)***	0.87 (0.54, 1.40)
Income: $70,000 +	0.50 (0.19, 1.33)	1.13 (0.75, 1.69)	**1.84 (1.07, 3.15)***	0.30 (0.01, 8.36)	0.41 (0.11, 1.56)
Ethnicity: Black	1.00	1.00	1.00	1.00	1.00
Ethnicity: White	**1.65 (1.14, 2.38)****	**2.58 (2.05, 3.24)*****	**6.67 (4.27, 10.41)*****	1.46 (0.84, 2.53)	**3.19 (2.02, 5.05)*****
Ethnicity: Hispanic	1.03 (0.67, 1.59)	1.19 (0.90, 1.59)	1.12 (0.61, 2.08)	0.91 (0.50, 1.68)	1.09 (0.62, 1.94)
PTSD: yes (ref=none)	**1.78 (1.17, 2.73)****	**1.57 (1.14, 2.15)****	**2.08 (1.41, 3.06)*****	**2.44 (1.43, 4.18)*****	**3.65 (2.41, 5.51)*****
Dysthymia: yes (ref=no)	**4.59 (3.15, 6.70)*****	**2.36 (1.73, 3.23)*****	**4.13 (2.84, 6.01)*****	**2.11 (1.16, 3.85)****	**6.22 (4.10, 9.44)*****
Anxiety: yes (ref=no)	**2.07 (1.52, 2.82)*****	**1.66 (1.35, 2.05)*****	**3.32 (2.49, 4.44)*****	**2.19 (1.39, 3.44)*****	**3.11 (2.18, 4.43)*****
Social support	**0.79 (0.69, 0.92)****	1.01 (0.91, 1.11)	0.94 (0.82, 1.09)	0.95 (0.77, 1.19)	0.90 (0.76, 1.07)

***: p<0.001; **: p<0.01; *: p<0.05

£: in this instance therapeutic coping mechanisms includes both treatment and maladaptive practices

$: model fully adjusted for **age**; **marital status**; **education level**; **income**; **ethnicity**; **social support level**; and selected **health** conditions (**PTSD**, d**ysthymia**, **anxiety**)
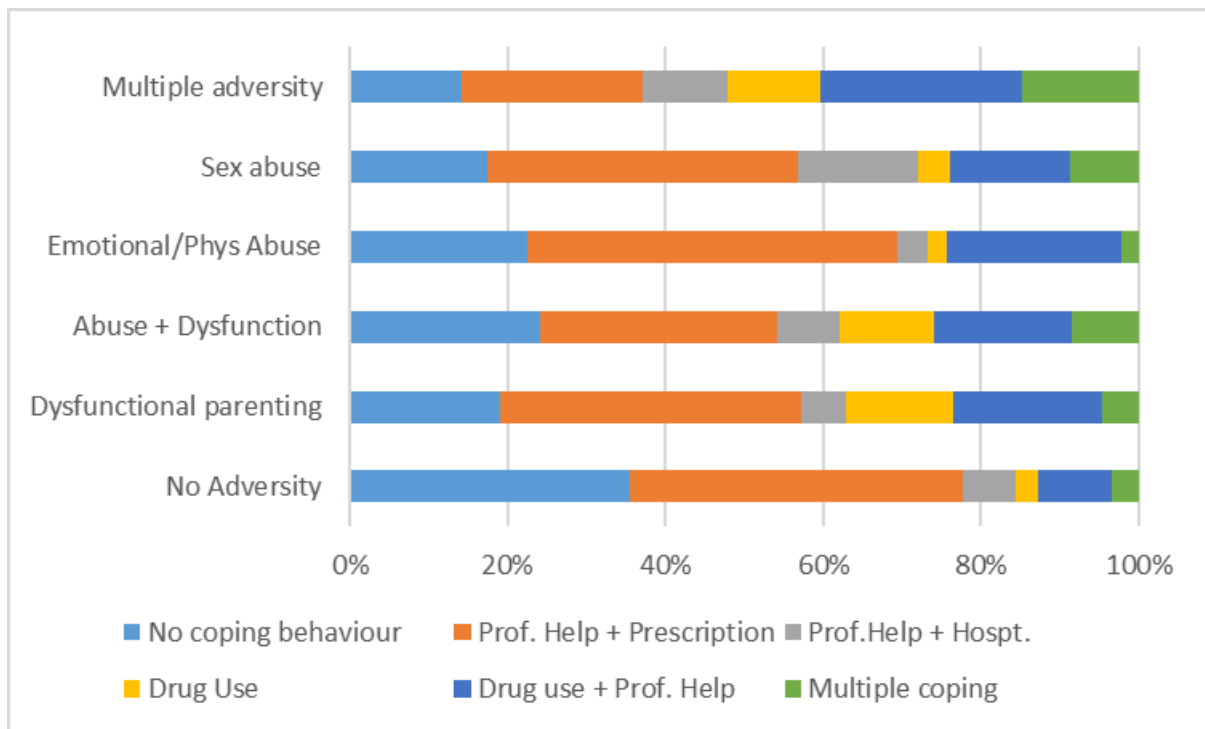
Table 4 (M*ales*). Relationship between *coping mechanisms*£ and *complex childhood trauma (ELA) profiles*. Results represent Odds Ratios (& 95% Confidence Intervals) from a series of multinomial logistic regressions

	professional help-seeking & prescription medication	professional help-seeking & drug misuse	alcohol & drug misuse	multiple coping mechanisms£
unadjusted models				
Emotional & physical	0.74 (0.44, 1.22)	**1.79 (1.13, 2.86)***	1.30 (0.80, 2.10)	0.91 (0.53, 1.56)
Sexual abuse	0.95 (0.19, 4.67)	**3.75 (1.37, 10.24)****	1.80 (0.48, 6.74)	**3.39 (1.20, 9.55)***
Multiple ELA	1.76 (0.70, 4.45)	**4.20 (1.94, 9.09)*****	**2.72 (1.10, 6.69)***	**5.22 (2.53, 10.76)*****
Abuse & family dysfunction	0.75 (0.35, 1.61)	**3.19 (1.91, 5.34)*****	**2.63 (1.52, 4.54)****	**2.94 (1.78, 4.85)*****
No adversity (reference)	1.00	1.00	1.00	1.00
fully adjusted models$				
Emotional & physical	0.58 (0.32, 1.06)	1.60 (0.96, 2.66)	1.26 (0.76, 2.08)	0.73 (0.40, 1.31)
Sexual abuse	1.05 (0.21, 5.29)	**4.19 (1.25, 14.07)***	1.59 (0.36, 6.94)	2.88 (0.93, 8.96)
Multiple ELA	0.87 (0.28, 2.76)	**3.25 (1.48, 7.13)****	1.62 (0.70, 3.77)	**2.12 (1.02, 4.40)***
Abuse & family dysfunction	0.62 (0.27, 1.38)	**3.19 (1.86, 5.47)*****	**2.16 (1.23, 3.81)****	**2.00 (1.13, 3.54)***
No adversity (reference)	1.00	1.00	1.00	1.00
Separated/widowed	1.00	1.00	1.00	1.00
Married	1.70 (0.81, 3.55)	0.97 (0.46, 2.02)	1.02 (0.52, 2.00)	1.25 (0.57, 2.75)
Divorced	1.23 (0.53, 2.86)	1.72 (0.80, 3.71)	1.31 (0.62, 2.76)	**2.50 (1.14, 5.48)***
Never married	0.96 (0.42, 2.21)	1.12 (0.53, 2.37)	0.86 (0.43, 1.76)	1.48 (0.66, 3.31)
Age 36-54 (reference=18-35)	**2.66 (1.45, 4.89)****	0.72 (0.49, 1.08)	0.80 (0.53, 1.20)	1.17 (0.74, 1.87)
Age 55 plus	**2.83 (1.49, 5.37)*****	**0.36 (0.21, 0.61)*****	**0.40 (0.24, 0.66)*****	0.90 (0.51, 1.57)
Primary education	1.00	1.00	1.00	1.00
Intermediate level	**2.07 (1.18, 3.64)****	**2.26 (1.44, 3.55)*****	1.50 (1.00, 2.26)	**1.82 (1.21, 2.75)****
Tertiary education	**3.02 (1.80, 5.06)*****	**2.35 (1.50, 3.67)*****	0.74 (0.46, 1.18)	0.71 (0.43, 1.18)
Income: <$35000	1.00	1.00	1.00	1.00
Income: $35000-$69,999	0.87 (0.54, 1.41)	1.23 (0.83, 1.82)	0.78 (0.51, 1.20)	**0.52 (0.31, 0.85)***
Income: $70,000 +	0.96 (0.57, 1.62)	1.19 (0.72, 1.96)	**0.45(0.22, 0.93)***	**0.41 (0.18, 0.93)***
Ethnicity: Black	1.00	1.00	1.00	1.00
Ethnicity: White	**2.34 (1.33, 4.13)****	**3.38 (2.14, 5.35)*****	1.26 (0.84, 1.89)	**1.87 (1.19, 2.94)****
Ethnicity: Hispanic	1.72 (0.83, 3.59)	1.11 (0.60, 2.08)	0.67 (0.39, 1.14)	0.74 (0.40, 1.34)
PTSD: yes (ref=no)	1.67 (0.77, 3.60)	**2.65 (1.56, 4.49)*****	**2.29 (1.26, 4.17)****	**3.03 (1.74, 5.27)*****
Dysthymia: yes (ref=no)	**2.22(1.34, 3.67)****	**2.80 (1.84, 4.26)*****	1.11 (0.67, 1.86)	**2.94 (1.92, 4.50)*****
Anxiety: yes (ref=no)	**2.79 (1.78, 4.36)*****	**2.12 (1.44, 3.11)*****	1.49 (0.98, 2.26)	**2.69 (1.82, 3.96)*****
social support	0.88 (0.72, 1.09)	1.04 (0.87, 1.25)	0.86 (0.72, 1.04)	**0.66 (0.55, 0.80)*****

***: p<0.001;   **: p<0.01; *: p<0.05
£: in this instance therapeutic coping mechanisms includes both treatment and maladaptive practices$: model fully adjusted for **age; marital status; education level; income; ethnicity; social support level;** and selected **health** conditions (**PTSD**, d**ysthymia, anxiety**)

Figure 3 (Females): cumulative proportions of patterns of therapeutic or maladaptive coping mechanisms, by exposure to adversity categories

Males: cumulative proportions of patterns of therapeutic or maladaptive coping mechanisms, by exposure to adversity categories