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Coping Styles and Levels of Depression, Anxiety and Stress among Siblings of Alcohol and Other Drug Users.

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Previous research :

- Increasing evidence has emerged documenting the negative effects of AOD use not only for the users but for the whole family (Arcidiacono et al., 2009).
- Three significant coping strategies (tolerate, engage and withdraw) appeared to be utilised by families attempting to deal with an AOD using family member (Orford, Templeton, Velleman, & Copello, 2010a). Gender (Lee et al., 2011; Orford et al., 2001), type of AOD use and levels of depression, anxiety and stress may affect which coping style is adopted by family members of AOD users.
- Research (Copello et al., 2009; Kirby, Dugosha, Benisheka & Harrington, 2005; Orford et al., 2010) has also suggested family members of AOD users may encounter a number of problems including decreased psychological and social adjustment, excessive worry and feelings of anxiety and depression (Copello et al., 2009; Kirby, Dugosha, Benisheka & Harrington, 2005; Orford et al., 2010b).

1. What is the underlying factor structure of the coping style adopted (tolerate, engage or withdraw) in those that have been negatively affected by their siblings AOD use?
2. Is there an association between gender and type of coping style adopted (tolerate, engage or withdraw) in those that have been negatively affected by their sibling's AOD use?
3. Is there an association between type of drug used (alcohol or other drugs) and the coping style adopted (tolerate, engage or withdraw) in those that have been negatively affected by their sibling's AOD use?
4. Is there an association between type of coping strategy adopted (tolerate, engage or withdraw) and negative emotional symptoms (total DASS-21 score) in those negatively affected by their sibling's AOD use?
5. Is there a difference in levels of anxiety, stress and depression between those that are negatively affected by a sibling's AOD use and those that have sibling's that have not been negatively affected or where no such AOD use is present?

Participants:

- The participants consisted of first year psychology students. The total number of participants in the study was 164 which consisted of 78 (47.6%) male participants and 86 (52.4%) female participants. Within this total, 123 participants had been negatively affected by their siblings AOD use and 41 participants had not been negatively affected by their siblings AOD use or where no such AOD use existed.
- All participants (164 in total) completed the DASS-21, while 123 participants completed the Coping Questionnaire. The sample as a whole was relatively young ($M = 25.98$, $SD = 8.91$) with the minimum age of the participants reported to be 18 years and the maximum age reported, 53 years.

Materials:

- The survey consisted of demographic questions including age and sex, a shortened version of the Coping Questionnaire (Orford, Templeton, Velleman & Copello, 2005), and the Depression Anxiety Stress Scale 21 [DASS-21] (Lovibond & Lovibond, 1995).

- **Procedure:** Participants were approached in a first year psychology lecture at Edith Cowan University, Joondalup. The research was explained to the participants with all participants advised that the questionnaire was anonymous and consent would be implied if they completed the questionnaire. The participants were provided with an information letter and the questionnaire to complete.
- **Ethics:** The research was approved by the Sub-committee of the Ethics Committee of the Faculty of Computing, Health and Science, Edith Cowan University. A key consideration was the risk of discomfort or distress during or following the administration of the survey, however participants were provided with the telephone numbers of several free of charge counselling services, both telephone and one on one counselling

Hypothesis 1:

- Factor analysis was utilised to examine the underlying factor structure of the coping questionnaire and identified three factors (with Eigenvalues exceeding 1) as underlying the fifteen questionnaire items and in combination explained 72.08% of the variance. The rotated factor matrix identified 5 variables loaded onto each factor (tolerate, engage and withdraw).

Hypothesis 2:

- A chi-square was utilised to examine the relationship between gender and coping style adopted by siblings of AOD users. As the expected frequency in each category should be greater than 5 (Field, 2009), the responses of 4 participants were excluded from the analysis as the participants fit into more than one style of coping.
- The result was not statistically significant, $\chi^2 (2, N = 119) = 2.83, p = >.05$.

Hypothesis 3:

- A chi-square was utilised to examine the relationship between coping style adopted and negative effect of AOD use on siblings of AOD users. As the expected frequency in each category should be greater than 5 (Field, 2009), the responses of 4 participants were excluded from the analysis as the participants fit into more than one style of coping.
- The analysis separated alcohol and illicit drug use into separate chi-square tests.
- The result was not statistically significant for alcohol and coping style, $\chi^2 (2, N = 119) = 5.06, p = >.05$. The relationship between coping style adopted and effect of illicit drug use on siblings of AOD users was also not statistically significant, $\chi^2 (2, N = 119) = 4.66, p = >.05$.

Hypothesis 4:

- A chi-square was utilised to examine the relationship between negative emotional symptoms (total score) and coping style adopted by siblings of AOD users. As the expected frequency in each category should be greater than 5 (Field, 2009), the responses of 4 participants were excluded from the analysis as the participants fit into more than one style of coping.
- The result was not statistically significant, $\chi^2 (4, N = 100) = 2.02, p = >.05$. To further assess this relationship utilising total scores for depression, anxiety and stress, multivariate analysis of variance (MANOVA) was used. This result was statistically non-significant, $F (6, 230) = .375, p = .895$, partial $\eta^2 = .010$, indicating the absence of any meaningful coping style differences on total depression, anxiety and stress score.

Hypothesis 5:

- To examine if there was a difference in levels of depression, anxiety and stress between those that have been negatively affected by a sibling's AOD use and those that have sibling's that have not been negatively affected or where no such AOD use is present a Mann-Whitney U test was used as the assumptions of the t-test were violated.
- The Mann-Whitney U test indicated that the total negative emotional symptom score for those negatively affected by their siblings AOD use (*Mean Rank* = 95.34, $n = 123$) was higher than those participants that have not been negatively affected by their siblings AOD use or where no such use exists (*Mean Rank* = 43.99, $n = 41$), $U = 942.50$, $z = -5.99$ (corrected for ties), $p = <.001$, two tailed. Through calculation of the effect size, the effect can be described as “medium” ($r = -.468$) according to Cohen (1988).

A number of additional findings emerged:

- Firstly, a number of participants fit into more than one type of coping. Through further research, a possible explanation for this finding is the concept of family members of AOD users oscillating from one method of coping to another in an attempt to manage the issue (Velleman et al., 1993) with the participants in the current study currently in transition between the coping styles. This is referred to as the 'Multidimensional Model of Coping'.
- Secondly, a number of participants fit into more than one negative emotional symptom such as depression-anxiety, depression-stress, anxiety-stress or depression-anxiety-stress. Through further research, a possible explanation for this finding is the comorbidity of mental health disorders (Ali & Sadiq, 2011; Antony, Cox, Enns, Bieling & Swinson, 1998).

- The limitations of the study included the use of a self report measure, non-random sampling and unequal sample sizes between variables.
- Self report measures may problematically affect the outcomes of the study as participants may not respond truthfully and as the measure was highly structured it may have shaped the responses of the participants.
- Non-random sampling was a limitation as this may have produced a biased sample and may mean the study lacks external validity (Howell, 2007). In addition, “our estimates may be meaningless, because the sample may not accurately reflect the entire population” (Howell, 2008, p. 7).
- The final limitation was unequal sample sizes between variables. This meant the current study utilised a number of non-parametric tests as the assumptions of the parametric tests were violated which may mean the tests utilised in the current study lacked relevant power (Howell, 2007).

- If this study was repeated it may be beneficial to utilise random sampling to ensure each and every member of the population has an equal chance of being selected to participate in the study which means the study is representative of the target population, external validity may increase and the study can estimate the parameters of the population, however this type of sampling is extremely time consuming and may be impractical for much researchers (Howell, 2008).
- It may also be beneficial to increase the sample size to increase the possibility of obtaining enough participants to meet the assumptions of parametric tests and assess comorbidity of depression, anxiety and stress and the notion of multidimensional coping.
- While further work is required to gain a more complete understanding of siblings of AOD users, the findings of the current study indicated that siblings of AOD users adopt coping strategies to manage the negative effects of the AOD users behaviour and experience increased levels of depression, anxiety and stress compared to those siblings that have not been negatively affected or where no such use exists.

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