University Lab Project – Multiple Regression

**Aim**

This study aimed to analyse the influence of peer victimisation (PV), social media usage (SMU) and siblings on social isolation (SI). It was hypothesised together and individually PV, SMU and siblings will account for a significant proportion of variance in feelings of SI. These hypotheses were investigated using a multiple regression performed on Millenium Cohort Study data (N=11,125). All three predictors were found to be significant with PV explaining the most unique variance in SI (sr2=.139).

**Hypotheses**

H1: In combination, regularity of experiencing PV (from never to most days), number of hours spent on social media weekly and having siblings will account for a significant proportion of variance in feelings of SI.

H2: Regularity of experiencing PV, time spent on social media weekly and having siblings will each uniquely account for a significant proportion of variance in feelings of SI.

**Data Sources**

Quantitative data was collected from the Millenium Cohort Study (MCS). Data from 11,859 participants (PPs) aged 14 who took part in Sweep 6 of the MCS was used. 51 PPs were removed to create a unique analytical sample. 683 PPs were then removed due to missing data in response to items related to SI, PV, SMU or number of siblings. 11,125 PPs remained.

**Data Analysis**

Multiple regression conducted in SPSS was used to analyse quantitative data. The criterion was SI, with the predictors being PV, SMU and siblings. SI was operationalised as the extent to which the respondent feels socially isolated, measured on a three-point-scale (1=not socially isolated, 3=socially isolated) containing five items. PV was operationalised as the regularity the respondent 7 was bullied, measured on a six-point-scale (1=never bullied, 6=bullied most days) containing three items. A mean average score was calculated for SI and PV for each PP. SMU was operationalised as hours spent per week on social networking sites. Siblings was dichotomised using a dummy variable (0=being an only child, 1=having one or more siblings).

**Results**

Descriptives and correlations are displayed in Table 3 below. Diagnostic checks were performed on the model. Assumptions of linearity, normality and homoscedasticity were met. There were no issues of multicollinearity. There were 181 cases with standardised residuals +/-3 and 12 cases with a Mahalanobis’ Distance exceeding the critical x2 of 16.27 when df=3 (at α=.001). However, no outliers were removed. Given sample size, and no cases having a Cook’s Distance greater than 1, the outliers were determined to not significantly influence the results.

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AI-generated content may be incorrect.The regression (Table 4 below) reveals together, the predictors significantly account for 39.5% of variance in SI (R2 = .395, F(3, 1121) = 683.34, p < .001). Individually, PV accounted for 13.91% of unique variance in SI. Siblings and SMU accounted for 0.90% and 0.66% of unique variance respectively. All three predictors were significant.

**Conclusions**

The quantitative findings supported both hypotheses. The predictors, in combination and individually, accounted for a significant proportion of variance in feelings of SI. Higher occurrences of PV and SMU predicted feelings of SI, reflecting the findings of previous literature (Kim et al., 2009; Tariq & Tayyab, 2011). The findings also suggest having at least one sibling rather than being 14 an only child, predicts higher levels of SI, supporting one side of the debate on how siblings affect SI. In conclusion, PV is a significant predictor of SI. However, whilst all predictors were significant, the effect sizes for SMU and siblings can be considered small, limiting the practical significance of these results.