RUNNING HEAD: Population Health

Fundamentals of Epidemiology and Population Health

Critical Appraisal

The study has addressed the focused issue very clearly with an understanding of the concept of control beliefs. The author addressed the question that whether the socioeconomic attainment process is influenced by control beliefs, independent of social differences. The data set of 330 for the case and 330 for control students well represents the whole population of students in the schooling year 2010-2011. The results from the statistical analysis show that 38.2% dropouts belong to low socioeconomic background, whereas 28.8 % are from a non-western background, or because of a single-parent family. The study reveals the fact that the rate of dropouts is more associated with low self-efficacy and low mastery and less than good health. The study somewhat detects the causes and consequences of low control beliefs and the social and environmental risks associated with low control beliefs.

While analyzing the case-control study it is found that it is an appropriate way to examine the role of low control beliefs in school dropout rates and young adulthood. However, the data for case-control is only collected in the year 2010-11, which dis-allows for the time series analysis. There may be some certain reason behind low the control belief resulting in poor health and dropout, in the specified year. To cater to this issue, the study must contain data of at least three years with a comparison of at least three randomized data sets for case and control groups(Schlesselman, 1982). Overall the statistical analysis best answers the study question that control beliefs are independent of socio-economic backgrounds and are more related to school dropout and poor health. Though individual differences in family upbringings are fundamental in generating health-related pathways. The findings of the study should be cross-validated with the workings of public health professionals, with an integration of both time series and cross-section data.

The case group in the study was not recruited in an acceptable way There are three limitations of the study. Firstly, it is not possible to exclude the probability of dropouts pretentious to the low control beliefs. Also, the poor health status possibility concerning low control belief was addressed with the restricted age of 16 years. Secondly, there is a recall bias that occurred when the case group found to have a better remembrance of the problem they have faced.

There is a problem in understanding how the socioeconomic background of an adult is based on the father's and mother's education levels. Many other factors determine the socioeconomic behaviors of adults. The third limitation of the study was the substantial non-responsiveness of males from the case-group. This results in an underestimation of the impact of socioeconomic conditions on health status and the dropout rate.

The data set of the case group is prevalent and well represents the entire population geographically but not temporally. One thing that is special about the cases is that 15% of the dropouts belongs to a single-parent family. The number of cases selected for the study is sufficient but the time frame for is restricted to one year. The power calculation of the study indicates that a sum of indicates a one to one ratio between case and control, and the sum of 290 case and 290 control yield 80 % power to perceive the influence of socioeconomic and health conditions on dropout rates.

While analyzing the selection criteria of the case-control group it is found that, at the initial level, cases and controls were similarly selected at the same educational level, to avoid selection biases. Even then the selection bias occurs because more than 50 percent Individuals of aged 16-23 came from Eindhoven and adjacent areas in the south-east of The Netherlands, which affects the generalizability of findings. The controls did not represent the random selection, because of geographical and temporal biases. The non-responsiveness was high in the case group but not in the control group. The individuals in control groups were randomly selected with a sufficient number

Furthermore, the exposure is not defined clearly and there is no proper interpretation of the measurement of exposure. The only description of the exposure in the whole article is that, other than socioeconomic conditions the environmental factors and genetic factors may create individual differences. However, the other measures of dropout status and health status properly indicate what they were supposed to measure. These measures were based on a score ranging for 1-10 (1: not healthy to 10: very healthy).

The measures of low control beliefs and self-efficacy require the respondents to recall “what was most applicable for them when they were 16”. It was based on two exemplary statements. “I have little control over things that happen to me” and “I can do just about anything I set my mind to do" (Bosma et al., 2014).

Measures of socioeconomic background were based on educational levels of the father and mother, and material and social deprivation. There is no consistency in these measures because the low control beliefs are not solely dependent on the socioeconomic conditions, specifically the education pf the parents. The author has equally treated the case and control group at the initial stage, but after finding the geographical bias in the control group he missed the genetic and environmental factors for those individuals of a control group who came from The Netherlands. The author s more focused on generalized aspects of socioeconomic background.

The author has considered the two major confounding factors i.e. age and sex in his design. Initially, he used both sex and age as covariates in his model. Later, the author calculated the association between socioeconomic and ethnic background, and family composition with less than good health, low self-efficacy and low mastery in case-control groups adjusted for sex. The author also has estimated the Odds ratio (CI=95%) of dropout adjusted for age, sex by recalled low-control beliefs, based on socioeconomic and ethnic background and family composition.

The bottom-line results of the study suggest that low control beliefs are not mediators in association between less than good health and socioeconomic conditions but they are the confounders. There is an earlier difference in an individual's life playing the role of driving force for future health and social mobility. Hence proved that control beliefs are as important as a socio-economic alliance in affecting the life-course pathways of the people. The overall analysis is appropriate for the study design however there is a need to cross-validate the data and findings with other studies, to improve the lacks.

The odd ratio of 1.75 at a 95% confidence interval, indicates the strong association between exposure and the dichotomous outcome in the case group. The ratio of the case to control is 1 which indicates that exposure is the same for both case and control group. After the adjustment of sex, age, and family composition the odds ratio was four times higher of poor health status for individuals recalling low control beliefs.

The statistical analysis shows that the p-value ≤ 0.05 reflects a significant difference between the ages of case and control groups. In table 6, the p-value ≤ 0.001 shows an underestimation of the impact of socioeconomic factors, because of non-responsiveness by individuals of case group, however, no reason has been provided by the author behind this non-participation. This becomes problematic in measuring the association between the low-control beliefs, and the school dropouts. The only measure that supports the similarity between case and control group is the basic education level at the initial stage of randomized selection.

The findings of the study, based on the limitations are accurate and reliable, however, the results need to be interpreted more clearly. Also, the effects of the study are not generalized to the whole population because of geographical biases in the control group which makes the results unreliable. In my opinion, sex and the initial age of monitoring must be considered while designing the study model. The findings should be cross-validated with the potential studies and estimates of public healthcare interventions in youth with powerless mind-sets.

# Bibliography

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