Reviewer's report

Title: Life style related to blood pressure and body weight in adolescence: Cross sectional data from the Young-HUNT study, Norway.

Version: 1 Date: 27 July 2007

Reviewer: Janet Meininger

Reviewer's report:

General
This manuscript examines the extent to which physical activity, smoking status, and dietary habits were related to overweight, obesity and blood pressure in a population of Norwegian adolescents who participated in the Young-HUNT study in 1995-1997. A strong feature of this study is that it is population-based with 80% of those invited eligible for analysis. Acceptable methods for measurement of height, weight and blood pressure were employed. Measurements of smoking status, physical activity and selected dietary habits were based self-reported answers to questionnaire items. Although no evidence of reliability or validity was reported, the limitations of these data are considered in the discussion of the findings.

The findings are clearly presented in tables. Blood pressure values were adjusted for age, arm circumference, height, BMI and smoking. Controlling for arm circumference and BMI essentially controlled for adiposity and thus may have attenuated the associations of dietary factors and physical activity with systolic or diastolic blood pressure.

Each lifestyle factor is considered in a univariate analysis. It would be useful to know the extent of overlap among the lifestyle variables and whether they explain unique or overlapping variance in the dependent variables.

From an epidemiologic perspective, the strength a cross-sectional survey is the ability to assess the prevalence and clustering of risk factors. The strength is not realized in the selection of findings presented in the manuscript. No data are presented on clustering of lifestyle factors. Likewise, there is no information presented on blood pressure differences among the normal weight, overweight and obese respondents.

On the other hand, the weakness of a cross-sectional study is the inability to differentiate antecedents and consequences and thus sorting out the direction of the links among variables is limited. This difficulty in interpretation of the findings is acknowledged in the discussion. Nevertheless it appears that the analysis and findings are not well matched with the design and strengths of the study.

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Major Compulsory Revisions (that the author must respond to before a decision
1. Indicate whether the results in Tables 3 and 4 for the association of dietary variables and physical activity with systolic and diastolic blood pressure would be the same without controlling for BMI and arm circumference.

2. Each lifestyle factor is considered in a univariate analysis. It would be useful to know whether lifestyle factors explain unique or overlapping variance in the dependent variables.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

1. On page 9 findings are described for systolic blood pressure for boys and girls, but the estimates of mean values are clearly in the range for diastolic blood pressure.

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Discretionary Revisions (which the author can choose to ignore)

1. Include blood pressure differences among normal weight, overweight and obese respondents.

2. Analyze clustering of lifestyle factors. What is the extent of overlap among adolescents with unhealthy lifestyles in the areas of diet, physical activity and smoking status?

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare I have no competing interests.