Author's response to reviews

Title: Over-indebtedness as a marker of socioeconomic status and its association with obesity: a cross-sectional study

Authors:

Eva Muenster (eva.muenster@uni-mainz.de)
Heiko Rueger (heiko.rueger@uni-mainz.de)
Elke Ochsmann (eochsmann@ukaachen.de)
Stephan Letzel (letzel@uni-mainz.de)
Andre Michael Toschke (michael.toschke@kcl.ac.uk)

Version: 2 Date: 7 April 2009

Author's response to reviews: see over
Dear editor,

Thank you for considering our paper for publication in BMC Public Health. We appreciate the reviewers’ constructive comments and their careful reading and have changed the manuscript according to their suggestions (bold type).

Reviewer#1: Sandra Plachta-Danielzik  
Reviewer's report:  
The manuscript of Münster et al. covers an interesting and new aspect in obesity research. In addition, the topic is current and the manuscript has a clear conclusion. However, there are some concerns:  
Major compulsory revisions:

1. The main concern is the comparison of the two surveys. The non-over-indebted group is a representative sample for Germany while the over-indebted group consisted of a sample from two German states. One of the states, “Mecklenburg-Western Pomerania”, has one of the highest rates of unemployment, and people from low social status as well as the highest prevalence of obesity. Thus, even non-indebted subjects from this state may have a lower income and higher prevalence of obesity when compared with Germany in total. The authors have to show that the two surveys are comparable.  
ANSWER: Thank you for addressing the important issue of confounding in a non-randomised study design. We completely agree that possible differences in the income-distribution in German states might influence the state-specific prevalence of overweight or obesity. However, since adjustment for income did not explain the association between over-indebtedness and obesity, confounding due to income seems to be unlikely (please see methods section on page 6 and results of multivariable analyses). Following the reviewer’s comment we added these considerations in the discussion section (please see page 10).

2. In addition, the response rate of the OI-survey was 39.7% only. Are there any information about the non-responder to quantify the bias?  
ANSWER: In the OI-survey we did not use reminder-actions in non-responders. We added this information in the methods section on page 5/6. However, the response rate is in line with other epidemiological surveys not focussing on severely ill individuals. Please see for example the following publications on response rates: [Kanuk L and Berenson C; Journal of Marketing Research, 1975; James JM and Bolstein R, The Public Opinion Quarterly 1990]. Besides the response rate the question of a potential selection bias is more important. Unfortunately we cannot compare participants and non-responders by the main outcomes (overweight, obesity) due to missing information on the main outcomes in the non-responder group of both surveys (GNT-HIS and OI-survey). However, when comparing the study participants of the OI-survey in Rhineland-Palatinate with the official statistics of all debt counselling centres with 11,520 registered debtors in Rhineland-Palatinate in 2006 the participants of the OI-survey did not significantly differ with respect to sex or age suggesting
that a selection bias in the OI-survey is unlikely. We did not add this information in the manuscript since we could only carry out this comparison for the over-indebted participants in Rhineland-Palatinate.

3. The low response rate of the OI-survey also indicates that the practical transfer to consider the debt situation in health research (as the authors concluded) may be difficult. It is already hard to get validated information about income of a subject.

ANSWER:
We completely agree that over-indebted people might be difficult to achieve in particular in general surveys. Therefore the health research has to use specific settings and additionally to capture potential confounders such as income. The OI-survey within it is specific setting is a good example showing a normal “unit-response” even in an over-indebted population. Additionally the “item-response” in the OI-survey is excellent.

4. The time span for which a subject is over-indebted may play an important role on the effect of obesity. Have the authors controlled for this?

ANSWER:
Thank you very much for this excellent idea. Unfortunately we could not analyse the information on history of over-indebtedness, because of co-linearity between the dichotomised variable of over-indebtedness and the history of over-indebtedness due to the design of the survey.

Minor essential revisions:
1. The literature cited in the background to support the link between SES and health is not convincing. A better citation is for example: Mackenbach et al.: Socioeconomic Inequalities in Health in 22 European Countries. New England Journal of Medicine 2008; 358:2468-2481 Jaarsveld et al.: Pathways from deprivation to health differed between individual and neighborhood-based indices. Journal of Clinical Epidemiology 2007; 60:712-719

ANSWER:
Thank you for this helpful comment. Following the reviewer’s comment we added the literature of Mackenbarch as we feel that this is the most appropriate of the succeed paper.
Reviewer#2: Yannis Manios
Reviewer's report:
This is a very interesting and up-to-date paper due to the economic crisis that has affected most countries globally.

Major Compulsory Revisions

1) The fact that all participants of the GNT-HIS study were considered to be not over-indebted could indeed affect the outcome of the analyses in this manuscript. However authors have included this in the limitations section of their study. It would also be good to include in the limitations section the fact that weight and height were self-reported. This might also underestimate the association between obesity and over-indebtedness, since overweight people tend to underestimate or under-report their weight. However the fact that self-reported data was also available for the CNT-HIS study can minimize the effect of weight under-reporting on this association.

ANSWER:
Thank you for addressing this important issue. Following the reviewer’s comment we added the following consideration in the discussion section (please see page 10): ‘Self-reporting of weight and height might result in reporting bias. A potential non-differential misclassification cannot be ruled out and might have attenuated the association between over-indebtedness and overweight or obesity. A differential misclassification might result in different prevalences of overweight or obesity. However, this is similar to a change of the cut-off values for overweight or obesity and it has been shown that a change in cut-off values still allows assessment of relationships [Toschke AM et al. Am J Clin Nutr 2008]

2) It would also be good to add some more references throughout the manuscript on the relationship of socioeconomic status and obesity or lifestyle from other European studies such as [Hulshof et al, EJCN, 2003], [Manios et al, Health Policy, 2005] or [Duvigneaud et al, BMC Public Health, 2007] or how financial incentives and public health policies may affect the adoption of healthy behaviours such as [Horgen and Brownell, Health Psychol, 2002] or [Lobstein, Proc Nut Soc, 2009].

ANSWER: Following the reviewer’s comment we added these publications in the manuscript.

3) Page 10, Paragraph 2: Please rephrase the sentence “First, a reverse causation, i.e. the development … can not be ruled out”, to include the fact that overweight people might have a difficulty finding a job or are usually get lower wages than normal-weight and thus may be more prone to over-indebtedness. It would also be good to insert a reference on this statement such as [Johansson et al, Econ Hum Biol 2009] or [Han, Norton and Stearns, Health Econ 2008].

ANSWER: We followed this comment and simplified the discussion on reverse causation (please see page 10).

Minor Essential Revisions

1) Page 2, “Background paragraph”: Please rephrase the last sentence. It does not flow well with the rest of the paragraph.

ANSWER: We rephrased the sentence accordingly.

Quality of written English: Needs some language corrections before being published

ANSWER: A native English speaker again checked the MS.