

Where have all the conscripts gone?

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The study published by Saely et al. reported Body Mass Index, blood pressure and serum cholesterol in Swiss conscripts [1]. Swiss conscripts data is valuable because this is the only source of clinical measurements covering almost the entire Swiss male population of the respective year of birth. It is thus important and deserving to exploit and publish this data. However, as in other large data sets, there are inherent limitations which should be carefully verified and considered before drawing conclusions. When publishing conscript data, a crucial issue is the question as to what extent the results can be generalised, i.e., how representative the sample was for the entire Swiss population of the same age. Unfortunately the authors deprive the reader of the needed information. They

only mention, without giving a reference, that 95% of Swiss men participate in regular conscription. Overall 144,325 Swiss men aged 19 between 2004 and 2007 were registered by the Swiss Federal Statistical Office (birth years 1985–1988, 2004: 34,778, 2005: 35,765, 2006: 35,908, 2007: 37,874) [2]. The 95% mentioned are probably an underestimation. A comparison of conscripts (42,000) with the total of Swiss men aged 19 years (42,732) of 1987 suggests that over 98% participated in conscription [3].

Thus, one would expect at least 137,000 (95%) persons to be included in the study by Saely et al. However, the study size was only about 70% of this (101,844 conscripts), and only 56,784 of these were actually examined, i.e., less than 40% of the original population.

The authors do not mention this huge discrepancy. Can we assume that the described patterns do not arise from higher exclusion rates in those unfit for military service, obese, being recruited in certain regions/conscription centres or from variations between conscription years (i.e., when persons postponed the conscription)? Serious selection bias arising from a differential inclusion/exclusion of certain groups can produce misleading results. It is therefore necessary

that the authors do their best to discuss and test for potential bias and trace the “lost” 40,000 conscripts.

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References

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- 2 Ständige schweizerische Wohnbevölkerung (Männer) nach Alter, 1970–2008, Statistisches Lexikon der Schweiz, Bundesamt für Statistik, http://www.bfs.admin.ch/bfs/portal/de/index/infothek/lexikon/bienvenue---login/blank/zugang_lexikon.Dokument.67269.xls
- 3 Statistische Resultate: Aushebung. Bundesamt für Statistik, Bern 1989.

Authors' reply

Whereas practically all young men undergo conscription, complete data sets are not available for all examined men. Our main analysis addresses the respective associations of Body Mass Index, blood pressure and serum cholesterol and is founded on a large sample of 56,784 conscripts for whom both laboratory measurements and anthropometric data were available. A supplementary analysis, in addition, includes conscripts who did not consent to laboratory testing but for whom anthropometric data were available. Conscripts for whom anthropometric data were unavailable were not included by study design; we therefore agree with Bopp et al. that our analysis does not include data on all young Swiss men of the investigated age range. As we have shown, the distributions of

Body Mass Index and of blood pressure were almost identical in our total study sample including conscripts who did not consent to laboratory testing and in those conscripts who consented to laboratory testing and on whom our primary analysis was founded: mean values (\pm SD) for Body Mass Index 23.0 ± 3.3 versus 23.0 ± 3.3 kg/m²; for systolic blood pressure 132 ± 16 versus 130 ± 15 mm Hg and for diastolic blood pressure 77 ± 11 versus 76 ± 11 mm Hg. It must be acknowledged that from this concordance it cannot be obligatorily extrapolated that the distributions of Body Mass Index and of blood pressure are identical in those men for whom the respective measurements were not available. However, the very similar results in those who consented to laboratory measurements and in those who did not consent strongly re-

assure us in assuming broader representativeness of our data. Further, with regard to our primary analyses addressing the associations of Body Mass Index, blood pressure and serum cholesterol, an unlikely bias through systematic exclusion of e.g. morbidly obese or of very lean men, if any, would have led to an underestimation of the observed associations.

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