Accuracy of self-reporting of diabetes mellitus and hypertension and its determinants among Omani adults

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National health surveys depend commonly on data collected through self-administered questionnaires due to the privilege of its lower costs.[1] In several studies, self-reported data was compared with medical records, disease registries, or the results of clinical and laboratory investigations. Some authors evaluate the accuracy of self-reporting for both people who responded positively and people who responded negatively to a specific question regarding chronic disease, whereas others limit their investigation to the positive responders or to people who have the condition according to medical records or clinical examination. Certain patient's characteristics are presumed to influence the accuracy of self-reported data. In several studies, the associations have been examined between gender, age and educational level.[2] The aim of the present study is to investigate the accuracy of Omani subjects' on self-reporting of diabetes mellitus (DM) and hypertension as compared with the diagnosis of these diseases according to the pre-set criteria; and to examine whether certain subject's characteristics influence the accuracy of self-reporting of these chronic diseases in a community based survey (National Health Survey, 2000). The survey adopted a multi-stage, stratified probability-sampling design representing the 10 regions of the Sultanate of Oman according to proportional allocation of the population size in each region. Sixteen willayates were selected out of 59 (27%). The total number of households selected was 1968 with a total of 7011 subjects aged ≥20 years. The response rate varies from 77.5-91.5% according to physical or laboratory measurement. Five thousand four hundred and thirty-one Omani subjects were subjected to data analysis to test the accuracy of self-reporting of DM and 6414 were subjected to data analysis to test the accuracy of self-reporting of hypertension. The tools used in the survey were Household Health Status questionnaire, which covers the demographic data and includes self-reporting of DM, hypertension. Measurements of blood pressure (BP), weight, height, waist and hip circumference were registered in the questionnaire. The World Health Organization (WHO) procedures were used for taking the measurements.[3] The questionnaire also included items for the results of laboratory investigations taken from fasting blood sugar, and serum cholesterol. The WHO criteria (1999) for diagnosis of hypertension, and glucose intolerance was adopted.[3] Prevalence of hypertension was estimated based on adding the subjects with self-reporting of systolic or diastolic hypertension to the subjects with a mean of 2 readings of 140 mm Hg systolic BP or 90 mm Hg diastolic phase ≥5 BP. Diabetes prevalence was estimated based on adding the subjects with self-reporting of DM and subjects with fasting blood glucose ≥7.0 mmol/l.

Data entry was carried out using EPI INFO version 6, while analysis was carried out using SPSS 5.0. The accuracy of the patients' self-reports as compared with the laboratory investigation or physical examination was measured by using Cohen kappa. Step-wise logistic regression was conducted to test the significant associated factors with accuracy of self-reporting of DM or hypertension.

The crude prevalence of DM and hypertension was 11.2% and 33.1%. Self-reporting of DM was low; only 4.2% of the studied population reported that they had diabetes, and it was very low compared with the prevalence of hypertension which is 6.1%. **Table 1** shows the kappa statistic of agreement of self-reporting of DM and hypertension compared with the results of diagnosis due to the pre-set criteria. For DM, the kappa was 0.56 for the whole sample, 0.50 for males, and 0.61 for females. Kappa was the highest among the elderly (>60 years). For hypertension, the kappa was generally lower than that of DM. The middle age group (40-59 years) had the highest kappa. The male gender and the youngest age group (20-39) were more likely to report inaccurate DM and hypertension than others. Logistic regression was used to examine the variables that increased the likelihood of accurate self-reporting of DM or hypertension where the following variables were included as independent; age groups, female gender,

Table 1 - Kappa statistic of agreement of self-reporting of diabetes mellitus and hypertension with its diagnosis according to pre set criteria, sex and age group wise.

Non-communicable disease	Kappa	p-value
Diabetes mellitus		
Whole sample (N=5431)	0.56	0.00
Males (n=2668)	0.50	0.00
Females (n=2763)	0.61	0.00
Age group		
20-39 years (n=3320)	0.30	0.00
40-59 years (n=1388)	0.60	0.00
60-120 years (n=723)	0.63	0.00
Hypertension		
Whole sample (N=6414)	0.24	0.00
Males (n=3057)	0.16	0.00
Females (n=3357)	0.33	0.00
Age group		
20-39 years (n=3932)	0.12	0.00
40-59 years (n=1658)	0.27	0.00
60-120 years (n=824)	0.20	0.00

being obese or centrally obese, level of urbanization, having another chronic medical condition, educational level, marital status, work status and smoking status. It was found that ages ≥40, centrally obesity, and hypertensive subjects were more likely to report DM (odds ratio = 3.75, 1.82, 1.49 $p<0.05$). Those with higher levels of cholesterol were less likely to report diabetes accurately. As regards to self-reporting of hypertension, females, age ≥40, obese subjects, and with impaired fasting glucose were more likely to report hypertensive accurately than others. Rural residents were less likely to do that. The overall agreement above chance was fair for DM while it was poor for hypertension. From the results, we could notice that the kappa statistics of self-reporting of DM was higher than that of hypertension. Our finding is consistent with what Bowlin et al[4] who found in their study that self-reporting of DM has a better validity than that of hypertension.

Awareness of having DM or being hypertensive was positively associated in our study with older age group, female gender, being obese or centrally obese, level of urbanization, and having another chronic medical condition. Misreporting of chronic medical condition in our study did not differ by respondents' level of education, which is consistent with what Kriegsman et al[5] found in their study. They found using the multivariate analyses that educational level, and level of urbanization had no influence on the level of accuracy. An influence of gender, age and recent contact with the general practitioner was shown for specific diseases.

We conclude that depending only on self-reporting information of DM or hypertension, or both, would lead to inaccurate estimates of their prevalence rates, suggesting the need for including the clinical ascertainment in any population based epidemiological study.

Received 9th February 2003. Accepted for publication in final form 29th April 2003.

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References

1. Sherbourne CD, Meredith LS. Quality of self-report data: A comparison of older and younger chronically ill patients. ***J Gerontol*** 1992; 47: S204-S211.
2. Schrijvers CT, Stronks K, van de Mheen DH, Coebergh JW, Mackenbach JP. Validation of cancer prevalence data from a postal survey by comparison with cancer registry records. ***Am J Epidemiol*** 1994; 139: 408-414.
3. King H, Minjoot-Preriera G. Diabetes and Non-Communicable Disease Risk Factor Survey: a field guide. Geneva: WHO; 1999. p. 7-15.
4. Bowlin SJ, Morrill BD, Nafziger AN, Lewis C, Pearson TA. Reliability and changes in validity of self-reported cardiovascular disease risk factors using dual response: the behavioral risk factor survey. ***J Clin Epidemiol*** 1996; 49: 511-517.
5. Kriegsman DM, Penninx BW, van Eijk JT, Boeke AJ, Deeg DJ. Self-reports and general practitioner information on the presence of chronic diseases in community dwelling elderly. A study on the accuracy of patients' self-reports and on determinants of inaccuracy. ***Clin Epidemiol*** 1996; 49: 1407-1417.

Residents' perception of the journal club

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Journal club meetings have become a part and parcel of formal postgraduate medical education.[1,2] It can be defined as an educational meeting where a group of individuals discuss articles, but it has been noted that it has become a matter of skill presentation and this is due to lack of critical appraisal. Postgraduate mentors and faculty staff are striving constantly to make these journal clubs as fruitful as possible by suggesting different approaches. The recent article by Dwarakanath and Khan[3] is one of the good examples of these efforts. Residents are the postgraduate trainees with both educational and clinical commitments. In addition to their day to day work and clinical responsibilities, they are supposed to take active part in postgraduate teaching activities with the journal club presentation as one of the postgraduate scientific sessions. The main objective of these journal club meetings is to provide the residents with a forum to remain abreast with the current literature.[4] However, despite of this awareness, it has been observed that residents lack the motivation.[5] We conducted this study to look further into this and to get residents'view on the journal club.

The study was conducted in the Department of Pediatrics at King Faisal University, Dammam, Kingdom of Saudi Arabia. Residents at different level of postgraduate training in pediatrics were asked to respond to the 10-item questionnaire on what they think of the present status of journal club meetings. Ten residents completed the questionnaire. **Table 1** depicts the results of the questionnaire. Two items clearly had a negative while 8 had a positive responses. Additional comments, some residents thought that journal club should be replaced with more grand rounds and case discussion, some suggested that weekly journal club meeting is too frequent. The study clearly demonstrated that most of the residents had a positive attitudes towards the journal club. In contradiction to the assumption, only one resident chose presentation in English as problem, so language was not thought to be a barrier in the journal club presentation. Furthermore, most residents voted for journal club meetings as no waste of time and agreed that this meeting enhances research understanding. However, majority thought that it is of limited clinical use. That might be reflective of their preoccupation with laboratory-based or animal-based bench research articles.

Role of faculty (mentor). From the study findings, it looked clearly that residents expect more support from their mentors, as most of them voted strongly for item 3, 9 and 10. A solution to this problem could be a prior consultation with their mentors before the presentation. By doing that, the faculty can guide the residents not only in proper article selection but also in making them understand and present the article smoothly. The