

The agreement between self-reported physician-diagnosed and epidemiologic definition of chronic rhinosinusitis*

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To the Editor,

Chronic rhinosinusitis (CRS) is a major public health problem with a high burden on the health system. The studies conducted based on the Global Allergy and Asthma European Network (GA²LEN) reported that the prevalence of CRS in Europe, USA, China and Brazil were 10.9%, 11.9%, 8% and 5.5%, respectively (1-4). For epidemiological studies, the European Position Paper on Rhinosinusitis and Nasal Polyps (EP³OS) defined CRS as an inflammation of the nose and the paranasal sinuses characterized by presence of two or more symptoms, one of which should be either nasal blockage/obstruction/congestion or nasal discharge (anterior/posterior nasal drip): ± facial pain/pressure; ± reduction or loss of smell for more than 12 weeks during the last 12 months (5).

A total of 5201 individuals aged 15-65 years old living in the city of Bushehr, Southwestern Iran were randomly selected through a multistage, stratified, cluster, random sampling method to participate in a population-based survey. We used the standardized GA²LEN questionnaire to identify individuals with CRS based on the above-mentioned criteria and asked the participants if they had ever been told by a doctor that they had chronic sinusitis as self-reported physician-diagnosed CRS. We measured the overall and positive agreements and used kappa statistics to assess the agreement between the two methods of diagnosis of CRS. The overall prevalence of CRS according to the EP³OS-defined criteria and self-reported were 28.4% (95% CI= 27.2%-29.6%) and 20.0% (95%CI: 18.9%-21.1%). There was no significant gender differences between two groups (men: 28.2% vs women: 28.3%, for EP³OS and men: 20.4% vs women: 19.6% for self-reported, $p > 0.05$). The participants aged 25-34 had the highest prevalence of CRS (Figure 1).

The overall and positive agreement between the two methods were 77.6% and 12.8%, respectively. In addition, Kappa statistics showed a fair agreement between the two methods (Kappa=0.39, $p < 0.001$).

Among all individuals with the self-reported physician-diagnosed CRS, 36.0% didn't have CRS based on the EP³OS-defined criteria. Among those who self-reported no history of CRS, 19.0% were diagnosed to have CRS based on EP³OS criteria (Table 1).

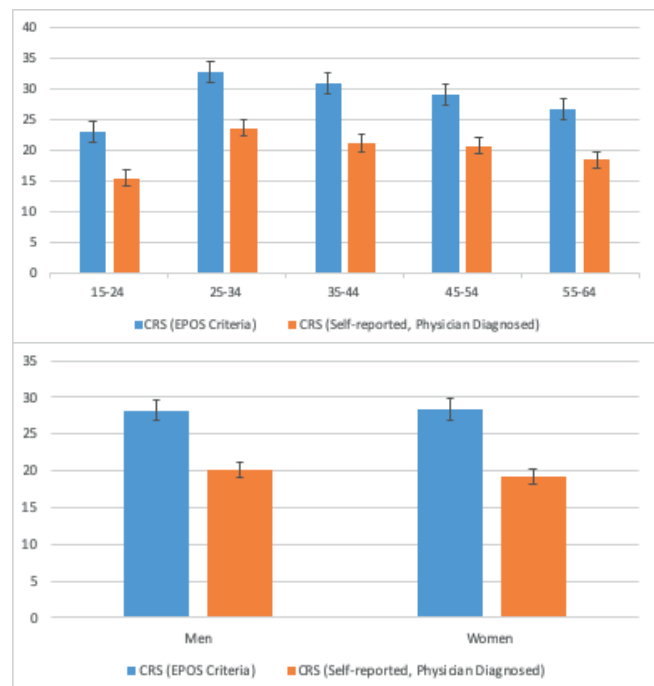


Figure 1. Comparison of the prevalence of CRS according to two methods of definition by sex and age group.

Table 1. The agreement between diagnoses of chronic rhinosinusitis based on EP3OS criteria and self-reported, physician diagnosed methods.

	EP ³ OS	
	No	Yes
Self-reported	No	3218 (64.8%)
	Yes	356 (7.2%)
		756 (15.2%)
		633 (12.8%)

According to the studies conducted based on GA²LEN questionnaire, the prevalence of self-reported physician diagnosed CRS in Europe was lower than the prevalence of EP³OS-defined CRS ⁽¹⁾. Association was weakest between self-reported physician diagnosed and EP³OS-defined CRS in an American study

⁽²⁾. Moreover, the Chinese study reported that the prevalence of self-reported physician diagnosed CRS (4.3%) was nearly half of the prevalence of EP³OS-defined CRS (8%) ⁽³⁾. While, the prevalence of self-reported physician diagnosed CRS was higher than EP³OS-defined in the city of Sao Paulo, Brazil ⁽⁴⁾. There are some explanations for the higher CRS prevalence in Bushehr. Our previous study showed that the frequency of indoor aeroallergens, house dust mites, fungi, and cockroaches, was high in Bushehr ⁽⁶⁾. Moreover, higher temperature, humidity and several dust storms over the city may be involved ⁽⁷⁾.

In conclusion, the inter-rater agreement between self-reported and EP³OS-based definition of CRS was not high enough to be used interchangeably. However, because the questionnaires were completed by the participants, some of the data was missing for some of the questions.

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