

## Stethoscope as vector of hospital infections

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Madam, stethoscope remains an important vector for the spread of health-care associated infections (HAI). It has also been observed that an effective infection control protocols in the clinical settings depend on the comprehensive education from medical student up to the senior clinicians. The students and residents are more likely to clean their stethoscopes when they know importance of stethoscope hygiene and observe their role models (attending physicians) cleaning their stethoscopes after each clinical examination.<sup>1</sup> Studies have shown the significance of stethoscope hygiene education, which translates into reduced contamination of the stethoscopes in the second week after the educational intervention.<sup>2</sup> Hitherto, only few studies have looked at the level of awareness related to stethoscope cleanliness in Pakistan,<sup>3</sup> in which less than 40% of responders ever cleaned their stethoscope.

A cross-sectional survey, using a five-point Likert scale, was conducted from July 2015 to June 2016 to know about awareness and practices to maintain stethoscope hygiene in 50 medical students, 50 residents and 50 physicians at Aga Khan University Hospital, Karachi (AKUH) by simple random sampling. The reliability determined by Cronbach's alpha was 84%. Data was analyzed using SPSS 21. The responses were compared by Chi Square test; results considered significant with p value <0.05.

Majority of the participants 83.3% (n=115) have heard about stethoscope cleanliness, and 70.3% (n=97) knew that entire stethoscope should be cleaned. A vast majority of the respondents, 91.3% (n=126) were aware of cleaning the diaphragm, in comparison, 60.1% (n=83) of the respondents were aware of cleaning the ear pieces, bell of the diaphragm and cleaning the rubber tubing of the stethoscope. There was no difference in proportion of knowledge according to gender (p=0.099), designation (p=0.104) or location of sample collection (p=0.220). The practice of the cleanliness of stethoscope was higher in consulting clinics (p=0.001). This study found higher levels of awareness regarding

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**Table-1:** Awareness regarding stethoscope hygiene.

Characteristic	Aware	Unaware	p-value
<b>Gender</b>			
Male	11(20.4)	43(79.6)	0.099
Female	28(33.3)	56(66.7)	
<b>Designation</b>			
Attending	17(34.7)	32(65.3)	0.104
Resident	16(32.0)	34(68.0)	
Student	06(15.4)	33(84.6)	
<b>Location</b>			
Consulting Clinic	06(20.0)	24(80.0)	0.22
Ward	12(29.3)	29(70.7)	
ICU	16(39.0)	25(61.0)	
ACU	05(19.2)	21(80.8)	

Respondents heard about the stethoscope cleanliness; know that all parts of the stethoscope should be cleaned; Realized the importance of hygiene of stethoscope diaphragm; Aware of importance of hygiene of plastic ear pieces; Would like to know more about cleaning of stethoscope; Aware of the fact that cleaning does not damage the stethoscope; Know that pathogens can be transmitted by stethoscope; Know the methods by which stethoscope can be cleaned, Know the importance of cleaning agents; Awareness of the fact that stethoscope can act as a vector for nosocomial infection.

stethoscope hygiene as compared with the earlier studies in the country, showing that 60% of Health care workers (HCW) were aware that stethoscope might be a source of infection.<sup>4</sup>

Of all the respondents, 122 (88.4%) agreed that stethoscope could act as a vector for nosocomial infections but only 60 (43.5%) knew about different methods to clean stethoscope. Only 95 (68.8%) were aware regarding the importance of using various cleaning agents. Only 15 (10.9%) cleaned their stethoscopes after every patient examination, and 58% (n=80) cleaned it once a month. The use of visual reminders in the hospital regarding stethoscope cleanliness would prove useful to further improve the stethoscope hygiene.

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