

CURRENT UPDATES

Self-swabbing in coronavirus pandemic- A game changer which can be introduced in field

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Citation

Bhandary S, Aroor R, Sreesan P, Jittu MV, Bhat V. Self-swabbing in coronavirus pandemic- A game changer which can be introduced in field. Indian J Comm Health. 2020;32(2-Special Issue):309-310.

Source of Funding: Nil **Conflict of Interest:** None declared

Article Cycle

Received: 16/04/2020; **Revision:** 16/04/2020; **Accepted:** 17/04/2020; **Published:** 20/04/2020

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Abstract

COVID-19, the disease caused by the novel coronavirus, SARS-CoV-2, is a highly contagious infection known to spread rapidly, leading to severe consequences and disasters. Health care workers are at higher risk of getting the infection, during the process of diagnosis and treatment of patients with the disease. Worldwide, a lot of health care workers have lost their lives because of COVID-19 infection. Managing the COVID-19 caseload is a real challenge to the health care system. For the diagnosis of COVID-19, both nasopharyngeal and oropharyngeal swabs are obtained to detect viral RNA. (1). A nasopharyngeal swab is more sensitive due to higher viral load in nasal secretions than oral secretions, which is similar to that of Influenza (2). Taking nasopharyngeal swab is a real challenge to the health care workers and also is uncomfortable for the patient. It also exposes the health care workers to aerosols. Moreover, the scarcity of personal protective equipment (PPE) is a real burden to the health care system.

Keywords

Anatomy; Nasal Cavity; Pharyngeal Wall

Self-collected nasal swabs in influenza epidemics were proved to be equally effective in comparisons with nasal swabs collected by health care workers (3). A meta-analysis of nine studies highlights that self-collected swabs are highly acceptable, accurate, simple, and comfortable (4). Similarly, even in COVID-19, self-collected nasal swabs can be used to detect viral RNA, especially in patients without severe disease. For obtaining a correct and representative sample, we describe the procedure in the following steps so the information can be easily understood by the general public and can be practiced.

Step 1 understanding the anatomy

Knowing the anatomy of the nose and nasopharynx is the primary step to complete the procedure effectively and without discomfort. One should be aware that, to enter the nasopharynx, the swab should be in a horizontal plane, parallel to the floor of the nasal cavity ([Figure 1](#)). The long axis of the nasal cavity is placed horizontally, roughly in the Naso-tragal line ([Figure 2](#)).

Step 2 Preparation

- a. Select the wider nasal cavity. The side on which the patient has obstruction should be avoided.

- b. Washing the hands with soap and water or an alcohol-based sanitizer.
- c. Spray the nasal cavity with 10% or 4% Lignocaine solution as local anaesthesia to avoid discomfort. However, this is not mandatory if availability is the issue.
- d. Wait for 20 minutes, as this gives sufficient time for the anaesthesia to clear off from the nose and avoids coating of the swab with it.

Steps 3

Tilt the head to back to about 70 degrees ([Figure 3](#))

Step 4

Pass the swab in the posterior-inferior direction towards nasopharynx parallel to the floor of the nasal cavity ([Figure 4](#)). Do not pass the probe in the upward direction in the anterosuperior direction. The normal tendency is to move the swab in the upward direction, parallel to the roof, as the external nose appears. One should avoid doing so to avoid injuring oneself apart from reaching a non-representative area. ([Figure 5](#))

Step 5

Pass the swab till one reaches the posterior pharyngeal wall, roughly 6-8cms. ([Figure6](#))

Step 6

Rotate the swab by 360 degrees for few seconds. ([Figure7](#))

Step 7

Carefully take the swab out of the nose, put the swab in the transport media, and handover it to the health worker. One has to remember that self-collected

swabbing should not be replacing the clinical evaluation and also health care assistance. Preferably, the swabbing should be done under the guidance of health care workers. A video demonstrating the steps would be beneficial to get a better yield.

Conclusion- If effectively used methods of self-swabbing can be introduced in field for healthy patients, it could reduce the morbidity pattern in health care professionals due to lack of PPE. This can be an entity to reduce infectivity in health care professional.

Authors Contribution

All authors have contributed equally.

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Figures

