Brief Report

A web-based survey for COVID-19 infection among Indian dancers

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Abstract

The pandemic caused by the novel coronavirus SARS-CoV2 has led to significant morbidity and mortality. Susceptibility to either contracting infection or presenting with symptoms has varied to a great extent among different populations. Whether specific occupations or lifestyles, other than the ones that predispose individuals to increased exposure, also play a role in shaping infection susceptibility is not yet fully understood. In India, due to a rich heritage of different classical dance genres, dance vocationally engages a great number of people. Moreover dance, being an aesthetic rendition of body movements, is established to have major influence of human health. With an aim to assess the susceptibility of SARS-CoV2 infection among the practitioner of various Indian classical dance genres, an internet-based survey was done based on a questionnaire. 6.04% of the dancers participating in the survey (N=182) reported past infection with SARS-CoV-2 virus confirmed by RT-PCR test, while 15.38% of them reported the same for one or more household members. The survey did not find any significant difference in age, body mass index between infected versus non-infected individuals. Further exploration of this occupational group with respect to COVID-19 disease outcomes as well as lung functions in health and disease are warranted.

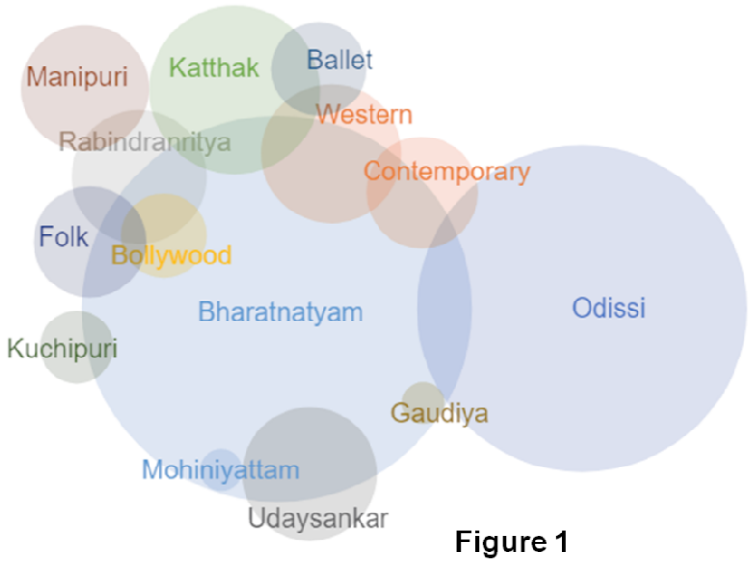

Figure 1

The pandemic caused by the novel coronavirus SARS-CoV2 has led to significant morbidity and mortality all over the world, as it did in India too[1]. More importantly susceptibility to either contracting infection or presenting with symptoms has varied to a great extent among different populations. The proposed explanations include ethnicity, immune constitution, occupational exposure, age, pre-existing medical conditions etc. Whether specific occupations or lifestyles, other than the ones that predispose individuals to increased exposure, also play a role in shaping infection susceptibility is not yet fully understood.

In this regard, occupations that have characteristic influences on human physiology, and as a result on the health parameters of specific individuals, should be explored.

In India, due to a rich heritage of classical dance genres[2], dance vocationally engages a great number of people. Moreover dance, being an aesthetic rendition of body movements, is established to have major influence of human physiology, especially respiratory physiology[3-7]. With an aim to assess the susceptibility of SARS-CoV2 infection among the practitioner of various Indian classical dance genres, an internet-based survey was done based on a questionnaire pertaining to incidence of SARS-CoV2 infection and its outcomes as well as basic demographic parameters. Household members of the participating dancers were also surveyed as the surrogate for extent of exposure. Moreover the household members offered a normalizing cohort for factors related to genetic similarities, diet and other major life-style parameters.

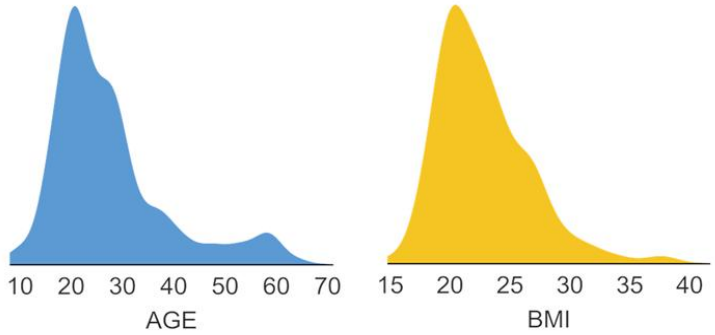

Figure 2

The web-based Google form was created for the survey. The questionnaire collected data on age, gender, body weight, height, presence of any pre-existing medical condition, history of documented SARS-CoV-2 infection with confirmatory RT-PCR diagnostic report, any reported symptoms, history documented SARS-CoV-2 infection with confirmatory RT-PCR diagnostic report among any of their household members, any reported symptoms by the household members with documented infection, age, gender, body weight, height and presence of any pre-existing medical condition for the household members with documented infection. All data were analysed in Microsoft Excel software.

182 practising dancers voluntarily participated in the survey by filling up the questionnaire, among them 31 were males, 148 were females and 3 persons refused to provide gender information. The participants identified them with 14 different dance genres, with variable combinations in some of them (Figure 1). The median age of the participants was 24.5 years (see distribution of surveyed individuals in different age groups in Figure 2). Median age among males

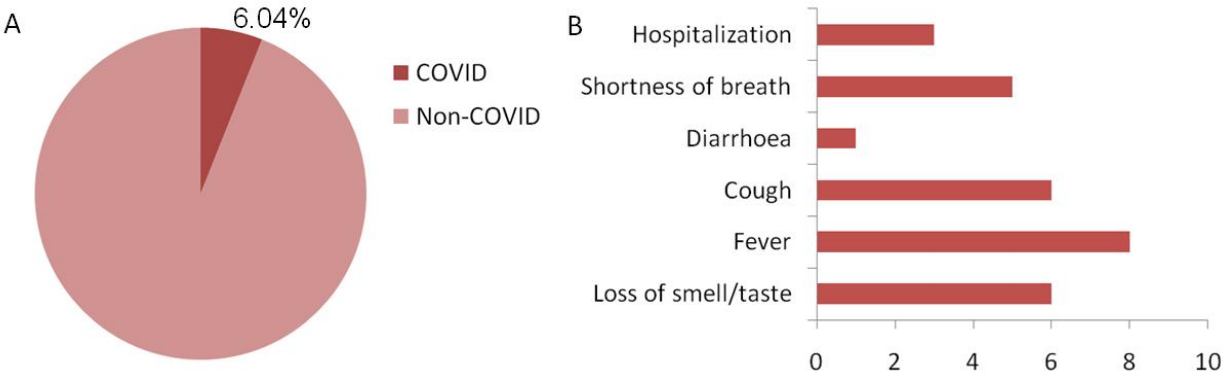

Figure 3

was 28±12.65 years (median ± standard deviation), median age among females was 23±10.84 years. The median body mass index (BMI) across all surveyed individuals was 22.06 (see distribution of BMI among the surveyed individuals in Figure 2), the same among females was 21.77 and among males 22.88. 23 (12.77%) of the surveyed individuals reported one or more pre-existing medical conditions or co-morbidities, which included chronic obstructive pulmonary disease (COPD)/asthma (10), allergy (1), hypertension (6), heart disease (1), liver disorder (3) and hypothyroidism (2).

11(6.04%) out of 182 participating dancer reported documented SARS-CoV-2 infections. None of the infections were asymptomatic (Figure 3A). The symptoms ranged from loss of smell/taste (6), fever (8), cough (6), diarrhoea (1) and shortness of breath (5). 3 of the infected individuals required hospital admission (Figure 3B). Median age of the dancers documenting infection was 22 years while the same among non-infected ones was 25 years. Median BMI of the dancers documenting infection was 20.14 while the same among non-infected ones was 22.14. 4 of the dancers documenting infection had pre-existing medical conditions, viz. liver disorder (1) and COPD/asthma (3).

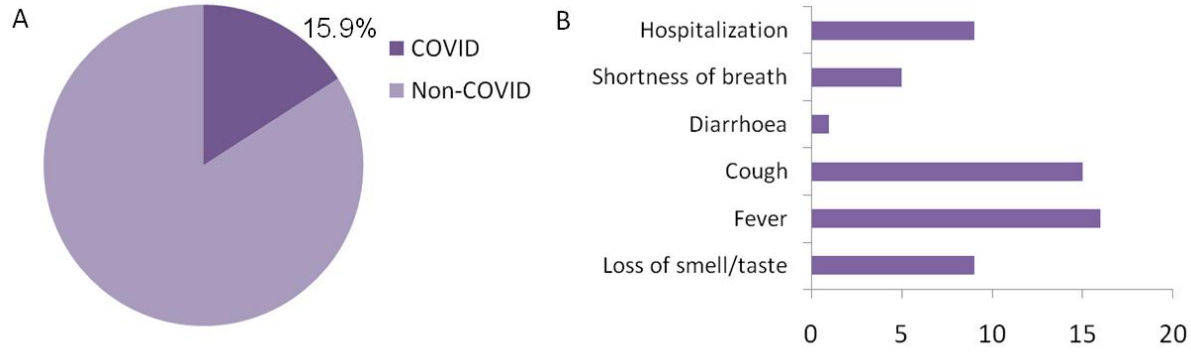

Figure 4

The survey responses revealed that 28 (15.38%) of the participating dancers had reported one or more documented SARS-CoV-2 infections among the household members, altogether reporting 45 infections (Figure 4A). 7 out of these 45 infections were asymptomatic. The symptoms ranged from loss of smell/taste (6), fever (8), cough (6), diarrhoea (1) and shortness of breath (5). 3 of the infected individuals required hospital admission (Figure 3B). 22 of the infected household members had pre-existing co-morbidities, viz. diabetes, hypertension, heart diseases, kidney diseases, COPD/asthma. The median age of the infected household members was 54 years.

Thus in conclusion this survey did not find any difference in susceptibility to SARS-CoV-2 infection among Indian dancers. The higher susceptibility of the household members, who can assumed to have comparable exposure and other factors affecting susceptibility, can be presumed to be due to older age and presence of co-morbidities. This pattern of susceptibility to COVID-19 is quite similar to general population. Nevertheless, the major weakness of this study has been a relatively low sample size and unavailability of medical data on lung functions during the active disease or in the convalescence phase. Based on previous literature the post-COVID lung functions are expected to benefit from a occupation of dance and thus should be explored in further studies.

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Conflict of interest: Author declares no conflict of interest.

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