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KAP Study on Social Distancing and Utility Sharing among Students of Bhadrak Autonomous College, Odisha, India during the First COVID-19 Wave: Implications for Policy Decisions in Subsequent Waves

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Abstract

Students are a high-risk group in a pandemic scenario like COVID-19, both as patients and as spreaders due to their attitudes and practices of very close association and utility-sharing among themselves. Schools and colleges in India have been closed since March 2020 till January 2021 and could just be reopened for higher classes for only three months in phases till April 2021. This has precipitated an unprecedented crisis in the lives of students and of educational organizations and institutions and the biggest headache for the ministries of higher education and the HRD ministry too. We conducted a KAP survey during the first COVID wave on March to May 2020 to analyze the risk factors involved in case of reopening of educational institutions. Accordingly we discuss the implications for policy decisions for such a highly sensitive group based on a study on **over 500 students** of the semi-urban locality of Bhadrak in Odisha, India. A questionnaire was prepared keeping in view the objectives of such a study by randomly picking students on campus, both boarders and day scholars, to collect the KAP-data from among the **nearly 6000** students of the College. We find that most of the students are vulnerable to catch an infection and have the highest potential to spread it to many in no time. The appropriate measures before the final opening of schools and colleges would be (a) to have enough space for ensuring social distancing (b) sensitization and awareness drives through all means among students to inhibit spread of the infection and (c) the required increase in manpower to ensure the successful implementation of the above two.

Keywords: COVID-19, Pandemic, KAP-study, utility sharing, sanitization, variants of concern

Introduction

COVID-19 has been continuing in waves across the globe since its first appearance in Wuhan, China and we are still reeling under its onslaught though several vaccines have already been administered to crores of people in different countries with varying degrees of success[1-10]. Several theoretical models have been advanced to fit the data emerging from different countries and predictions have been made and are continuously being fine-tuned to explain the number of new incidences and fatalities depending on parameters such as sunlight duration and humidity etc. [11]. In the mean time the second Covid-19 wave has passed and a third wave too, however mild, in most of the countries. But the attitude among students and in the general public has still a lot to be desired. We still see people crowding public places and public buses and trains without masks or below-the-nose masks, even when a variant of concern is raging.

The RNA virus has mutated continuously as if meta-evolving [12-14] in response to the vaccine and medication pressures [15-20] even as humans show signs of developing herd immunity against earlier variants [21]. In this rather unusual struggle for survival of the scientifically-empowered human-prey and the naturally-empowered virus-predator, Lotka-Volterra

type oscillations are being seen in the succession of waves of the pandemic, seemingly to restore order and equilibrium in the biosphere, considering its ever-increasing toll on humanity[22-25]. How far are we really empowered to deal with a tiny, presumed-to-be-nonliving virus? Has humanity learnt from earlier pandemics sufficient lessons to have the right attitude and adopt the right practices when a pandemic hits or are we blinded by the pride of scientific achievement and the pursuit of supremacy by indulging in self-destructive gain-of-function research[26-27]?

In the present study we focus on knowledge, attitude and practices among students of Bhadrak Autonomous College, Bhadrak, Odisha, India in regard to sharing of utilities and suggest some policy measures to be adopted to curb the spreading of any infectious disease due such sharing, in the event of reopening of educational institutions.

Materials and methods

Questionnaire consisting of 20 questions was distributed among the target students to gain information about their knowledge of specific infectious diseases and their attitude towards precautionary behavior to avoid getting infected. Questions were also included to gauge their practices of sharing of utilities with others at home and in hostel/mess environments. The aim was to come to a definite conclusion about prevalence of utility sharing among them and how such practices are to be curbed in a pandemic scenario to avoid explosive spread of infection in educational institutions. The participants in the study were informed beforehand about the nature and scope of the study and its how its outcome would enable formulation of specific policies for combating explosive spread of pandemic among student masses. Sufficient care was taken in formulating the questionnaire to avoid any kind of infringement upon personal privacy of the respondents.

Table 1: Questionnaire for survey on utility sharing

1. How many close friends do you have?
2. With how many friends you regularly share your bicycle or bike?
3. With how many friends you regularly share your study materials such as books, notes and pens?
4. With how many friends you regularly/ occasionally share your dresses?
5. With how many friends you share your washroom utilities such as bath towels/soap/ oil/shampoo/ tooth paste?
6. With how many friends you do handshake/fist bump/high fives/hug to greet?
7. With how many friends you regularly/ occasionally share your dinning sets?
8. With how many friends you regularly/ occasionally share your towels?
9. With how many friends you regularly/ occasionally share your uniforms?
10. With how many friends you regularly/ occasionally share food from the same plate?
11. Do you wash your hands before taking food?
12. Which food items you usually take from roadside vendors/thela-wala?
13. How many days per week you take food from roadside vendors?
14. Do you have any knowledge of transmission of viral/bacterial infection through contact and through shared utilities?
15. How does Hepatitis infection spread?
16. What is hepatitis?
17. Hepatitis is caused by what?
18. When did you suffer from jaundice last?
19. Which other diseases you suffered from in last five years?
20. With how many persons do you share your toilet?

Findings of the study

The findings of the study are depicted in the fig. 1 to 5 below for ease of understanding. It was found that on an average a student has about 1 to 2 close friends with whom utility sharing happens which can and does contribute greatly to spread of infection due to compounding of the effect through contacts of contacts etc. We believe that this is the reason, in spite of imposing strict social distancing and masking norms in educational institutions, the spread could not be controlled effectively during the first wave

resulting in complete closure of schools, colleges and universities across the country. Sharing of bicycles and study materials was almost same in all the groups from with 1 to more than 5 friends. Sharing of dress materials with 2 or more friends is still found to be a common practice among the students surveyed.

In terms of personal hygiene we found that about 83% were in the habit of hand-washing regularly, which is quite satisfactory. Still considering the infectiousness of COVID, this has to be made 100% if successfully the spread is to be tackled. Similarly, *gupchup* or *panipuri* is the first choice roadside food with 38.1% going for it, with 15.71% going for *dahibara-aludam* in the second spot. About 25% of the respondents take food from roadside *thelas* up to twice a week, while 22.78% take up to 5 times a week! This can be linked to the prevalence of incidence of dysentery and diarrhea among students due to such contaminated food taken so frequently. It compounds the problems in case of a raging pandemic because such gastro-intestinal infections make the persons immune-compromised and make them more vulnerable to infection, and once infected, it also makes them less likely to recover as they have higher probability of succumbing to associated comorbidities.

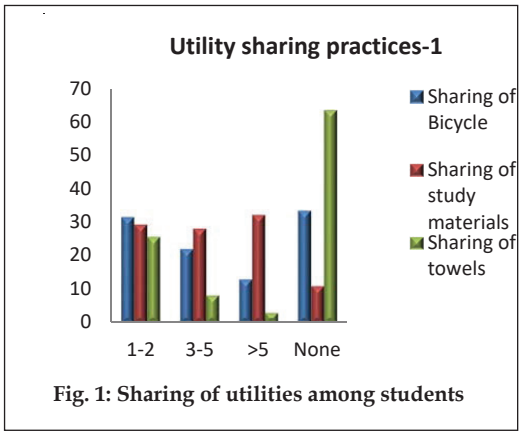

Fig. 1: Sharing of utilities among students

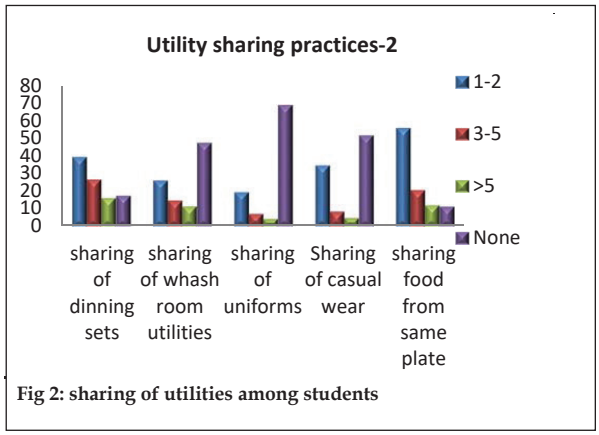

Fig 2: sharing of utilities among students

Fig 3: Hand-washing practice among students

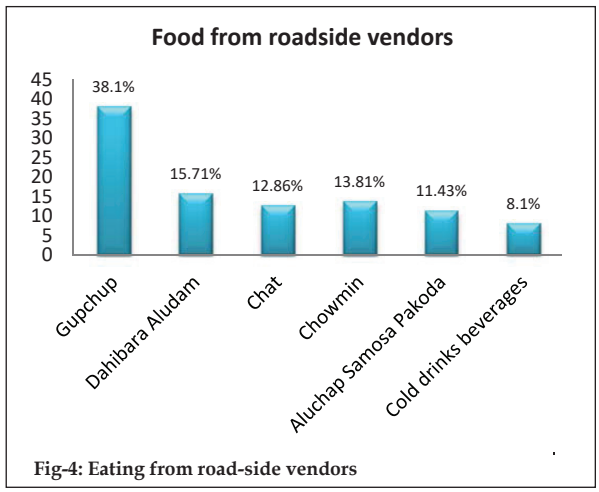

Fig-4: Eating from road-side vendors

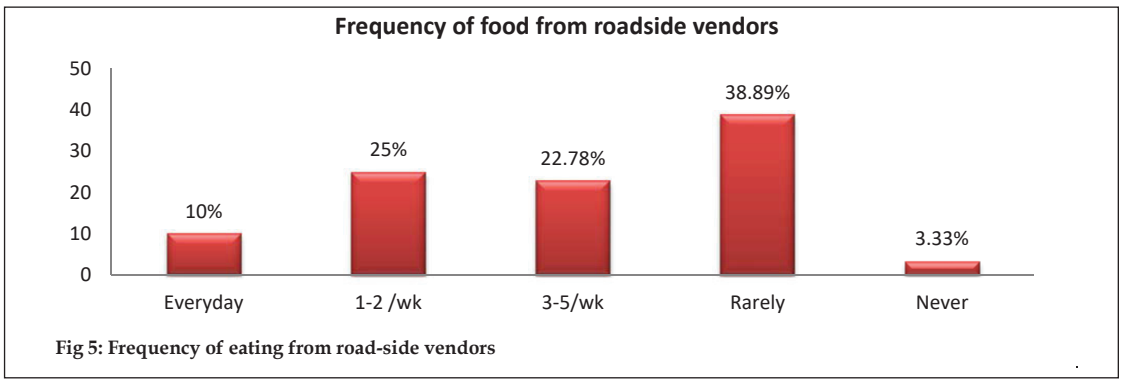

Fig 5: Frequency of eating from road-side vendors

Basing on these findings we suggest specific policy recommendations for reopening of educational institutions and hostels so that in subsequent waves of COVID and in any other pandemic, adequate measures can be taken by the authorities concerned for saving invaluable lives.

Specific policy recommendations

Institution

a) Sanitization of every entrant and exitant at every gate of the college

b) Classes and examinations be made in the online mode as far as practicable

c) Each class be split into groups of 15 to 20 for both theory (offline classes) and laboratory sessions

d) Sanitization of campus at least thrice a day, classrooms after every class and common rooms for students and teachers and canteens and cafes at hourly intervals.

e) Sensitization of support staff

f) Installation of sensor-based touch-free hand-washing points

g) Prompt recruitment of extra teaching and support staff to ensure the implementation of the above

h) Stretching of college hours with different batches of teachers and staff to ensure classes of every group of students

i) Conversion of most of the existing classrooms to ICT enabled smart class rooms enabling engagement of online classes for all groups at the same time.

Hostels

a) All hostels be remodeled by erecting individual living space cubicles in a room with the number of boarders per room restricted to ensure social distancing.

b) Food supply to the rooms or restricted entry to dining halls.

c) Toilets be attached to the respective rooms rather than being on sharing floor-wise

d) Sanitzation of rooms and campus and common spaces be made at least thrice a day

e) Sanitization of every entrant and exitant at the gates

f) Sensitization of support staff

g) Prompt recruitment of adequate support staff for implementing these measures

This study was undertaken during the first COVID-19 wave before vaccines were developed and hence after wide-spread vaccination of the college-going youth, the data as well as the outcomes are certain to change drastically, which we propose to undertake in a future study. Reports of repeated infection (a.k.a. breakthrough infections), both symptomatic and asymptomatic, though mild, long and sometimes severe in nature, following full vaccination have been coming from all segments including the youth which again is a matter of grave concern for future course of action in regard to the strategy of vaccination as the only solution[28-30].

Discussion and Conclusion

As long as infectiousness due to close contact or utility sharing remains responsible for the pandemic, these measures will help curb the spread. But, if the VOCs are indeed Vaccine Induced Variants Of Concern (VIVOC) *i.e.* produced from within due to interaction of injected viral fragments with the immune system of the individuals as happened in case of the delta and omicron variants of SARS-CoV-2, there is very little that can be done now. Similarly, if the majority of cases are false positives due to intrinsic lacunae of the use of RTPCR for detection, in which case, even ordinary flu cases can pass off as COVID positive cases, leading to alarming rise of infected cases. A further trouble is the complete disregard of comorbidities and multimorbidities as causes of deaths and ascribing almost all deaths to COVID-19 exclusively as if before the pandemic there were no other causes of deaths [31-32]! Especially, COVID-19 made cancer even more invincible and more destructive than ever before [33-37] through direct co-infection and through healthcare-deprivation.

Thus, the COVID statistics must be reviewed not only for ascertaining real COVID positive cases and deaths but also in regard to its real infectivity, especially with the later VOCs which seem to be VIVOCs. If VIVOCs are responsible for the latest

waves, then there is no hope of having any respite unless the effects of vaccines is completely wiped out and further vaccine doses are stopped from being administered, whether fresh or booster. The VIVOCs are not spreading as infectious agents but are coming up from within the vaccinated individuals, when the mRNA enters the genome and produces the COVID-like symptoms. There is need for an in-depth study of virus-vaccine interaction as it is an RNA virus and as such is prone to frequent mutations which further intensify due to pressures of vaccines and medications.

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Ethical Clearance: No ethical issues in this study. Informed consent was taken from the participants.

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