

vaccines, the coverage was low, varying from 5.5% to 35.4%. The vaccination coverage was better in respondents with higher educated and higher income parents. We suggest that patient education, planning by government for the implementation of a policy for adult vaccination, and involvement of physicians are needed for better adult vaccination coverage.

**Key words:** adult vaccines; education; income; Mumbai, India; university students.

**Disclosure of Interest:** None declared.

## A STUDY TO ASSESS THE VACCINATION COVERAGE OF UNIVERSITY STUDENTS IN MUMBAI, INDIA

V. Limaye; D. Limaye; and G. Fortwengel

*Hochschule Hannover, Hannover, Germany*

**Background:** Immunization is the most cost-effective intervention for infectious diseases, which are the major cause of morbidity and mortality worldwide. Vaccines not only protect the individual who is vaccinated but also reduce the burden of infectious vaccine-preventable diseases for the entire community.<sup>1</sup> Adult vaccination is very important given that >25% of mortality is due to infectious diseases.<sup>2</sup> There is a scarcity of information on the vaccination status of young adults and the role of socioeconomic conditions in India.

**Objectives:** The present study explored the adult vaccination status and influence of income and education of parents on adult vaccination status in university students from Mumbai, India.

**Methods:** This descriptive study was performed from January to April 2015 among undergraduate pharmacy students from Mumbai University, India, by using a validated study questionnaire. Students were contacted by a study team member in their classrooms and were given a brief introduction about the research project. Those who desired to participate in the study were explained the purpose and objectives of the study. On the basis of the eligibility criteria (those who gave written informed consent and were between the age group of 18–25 years), 149 students were selected for the present study. A total of 8 vaccines (namely, Tdap/DTP, varicella, measles-mumps-rubella [MMR], influenza, pneumococcal, hepatitis A, hepatitis B, and meningococcal) were included in this study for all the respondents. In addition to these vaccines, human papillomavirus (HPV) vaccine was also included for female respondents.

**Results:** There were total of 149 (75 males and 74 females) respondents with a mean age of 21.5 years. The top 3 immunizations were Td/Tdap (97.3%), MMR (66.4%), and hepatitis B (55%) among the respondents. Only 4 (5.5%) female respondents had been immunized against HPV. The lowest income group (<50,000 INR/month) had the least vaccination coverage for all the vaccines, except for MMR and HPV. Vaccination coverage was lesser for respondents with parent's education below a high school than those with parent's education of graduation and above, except for pneumococcal vaccine.

**Conclusions:** India's National Centre for Disease Control has recommended Td/Tdap, MMR, and varicella for all adults and influenza, pneumococci, hepatitis A, hepatitis B, meningococcal, and HPV for adults with certain risk factors. Td/Tdap (97.3%) and MMR (66.4%) coverage was in line with the recommendations. For all the other

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