



RESEARCH ARTICLE

ADULT IMMUNIZATION- A PARADIGM SHIFT FOR ADULT WELL BEING

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ABSTRACT

Objectives: The objectives of the article is to emphasis on the need of adult immunization which is felt need due to present era of resistance stain to majority of antibiotics, increase risk of communicable diseases because of mutation, new stains, globalization and migration thereby, difficult to manage infectious diseases. **Introduction:** Since the start of the January this year, a new outbreak of SARS-CoV-2 disease has been reported worldwide with no specific medication, vaccination being only hope is an eye opener about adult vaccination as a paradigm shift to well being. **Methods:** It is predicted that if nearly 20% of the population were to get infected, the direct medical expense, considering expense only during the course of the infection, it could be as high as \$163.4 billion which can be prevented by effective vaccination. **Results:** Adapting a standard adult immunization regime along with emphases on life course immunization as a integral component in nation programs for the better well being of present as well as future generation along with proper education of health care workers about the various adult vaccination and their important which will help in resolving the gap by able to proceed with vaccination without difficulty, thereby enhancing adult population confidence, removing the unawareness, and being mindful about cultural acceptance. **Conclusion:** Over all, improving adult vaccination coverage in India, it could help us to reduce the overall burden of disease among the adult population by reducing hospital admissions, health costs, and mortality rates, and improving quality of life.

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INTRODUCTION

India stands in the second position of world's most populated countries, accounting for more than 18% of world population,¹ and with the increase in population there is an increase of mortality and morbidity also noted. Over all, there has been significant increase of health care cost faced by household, it has been estimated that there is an increase in health care cost from 15% in the year 2004-2005 to 18% in the year 2011-2012.² This increase in expenditure on health care is not only an economic burden, but also leads to disability adjusted life year and death, further affecting the living condition. Though the discoveries of antibiotics have saved many lives earlier, but at present we have entered an era of resistance, stain to majority of antibiotics, leaving us with less choice in the treatment of major communicable diseases and Further, increase risk of communicable diseases because of mutation, new stains, globalization and migration thereby, making it difficult to manage infectious diseases.³

Need for adult immunization: Worldwide, thousands of the adult populations are affected by communicable diseases which are vaccine preventable diseases, there by adult vaccination could reduce the mortality, morbidity and also an economic burden of the family and the nation.³ Vaccine preventable disease have been drastically reduced in India among children after the successful immunization program started in India, this can be achieved in adults too if effective vaccination among adults is carried out, With the waning immunity among the adult population associated with certain age-related factors like immunosenescence and the epidemiologic transition due to changing patterns of adult population distributions in terms of changing patterns of mortality ,life expectancy, fertility and various causes of death ,adult population are at most need for vaccination .In India only tetanus toxoid vaccine is made mandatory that too among pregnant women. Unfortunately, other diseases like H1N1 which are prone for seasonal out breaks and causing deaths are often neglected ⁴, country like India which is highly populated and prone for out breaks of diseases like hepatitis , varicella ,chickenpox, acute diarrheal disease which can be prevented by effective vaccination⁵.

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Table 1. Adult immunization schedule and Recommendation in India. (As recommended by Indian Medical Association)⁸

Vaccine	19-21 years	22-26 years	27-49 years	50-64 years	>65 years
Influenza(inclusive of h1n1)	1 dose annually				
Td /tdap	one dose tdap,then td booster every 10 years				
Mmr	1 or 2 doses depending on indication				
Varicella (var)	2 doses				
Herpes zoster(hzv)				1 dose	
human papillomavirus(hpv)male	3 doses	3 doses			
Human papillomavirus (hpv)female	3 doses				
Pneumococcal 13-valent conjugate (pcv 13)	1 dose			1 dose	
Pneumococcal polysaccharide(ppsv)	1 or 2 doses depending on indication			1 dose	
Hepatitis a	2 or 3 depending on vaccine				
Hepatitis b	3 doses				
Typhoid	1dose every 2 years in endemic areas & food handlers				
Cholera	1 or 2 doses depending on vaccine				
Meningococcal 4-valent conjugate acwy or polysaccharide mpsv	1 or more doses depending on indication ,then booster every 5 years , if risks remains				
Meningococcal b(men b)	2 or 3 doses depending on vaccine				
Haemophilus influenza type b (hib)	1 or 3 doses depending on indication				
Covid 19 (covishield)	2 doses (28 days apart)				

Apart from this communicable diseases certain chronic diseases like carcinoma cervix which is the second leading cause of death among female in India can also be prevented by vaccine.⁶ Current pandemic of COVID 19 infection ,which has high communicability and morbidity and affecting more than million of adult populations worldwide, with no new drug to treat this infection the only hope to curb this pandemic is vaccination against this disease,⁷ this pandemic has thought the important lesson about adults being more susceptible to out breaks hence need of this hours is adult immunization which is an important step for wellbeing among adults which is often ignored. Many adult immunization schedule are preset currently In table 1 adult immunization schedule and Recommendation in India has been illustrated which is as per recommended by Indian Medical Association

Overcome the barriers in Adult Immunization in India to improve overall coverage: Political commitment is one of the main barriers in India for adult immunization , many adult vaccination schedule are present but none of the schedule is nationally adopted and recommended eventually adult immunization is being neglected and is - insufficiently publicized which in turn led to lack of awareness among general public as many have the assumption that vaccination is there only for pediatric age group ⁹this can be resolved by adapting a standard adult immunization regime along with emphases on life course immunization as a integral component in nation programs for the better well being of present as well as future generation ¹⁰ Moreover, certain other factors has been reported in various studies contributing to poor vaccination in adults like to socio-economic factors , religious and cultural beliefs especially in rural India ¹¹ even in urban India lack of awareness about the disease lack of perceived need, lack of accessibility or affordability, lack of trust. ¹² .this can be solved by proper education of health care workers about the various adult vaccination and their important which will help in resolving the gap by able to proceed with vaccination without difficulty, enhancing adult population confidence, removing the unawareness, and being mindful about cultural acceptance¹³. Moreover , well developed, easy to reach awareness to the general public using various advance media to reach them will help in improving adult immunization among genral public because in a study done in Mysore, reported that ,mothers who were given awareness about need of vaccination for ca cervix showed willingness to vaccinated their daughter.¹⁴

Overall both private also public health care provider should try to build a good credentialed among the general population to resolve the health seeking behavior among the adult population.¹⁵ Disease surveillance of vaccine preventable disease (VPD) among Indian adults is poor, resulting in under-recognition of outbreaks which further have lead to insufficient of data on the real burden of VPDs in India.¹⁶this can be resolved by conducting multiple pilot studies at various region in India, which can be the first step to provide necessary insights to the importance of adult vaccination. Last but not the least the stake holder of vaccine production and sales play a very important role in protecting and saving many life by proving adult vaccine at affordable cost along with awareness and education, as that adult vaccination costs estimated on a per-person lifetime basis which are less expensive than other commonly used drugs for secondary prevention like lipid-lowering drugs, bisphosphonates, and antithrombotics also the cost-effectiveness of adult vaccines in lower and middle income countries such as India would be beneficial when case averted and death of vaccine preventable disease are calculated, as several stydies done on present covid 19 outbreak has predicted that if nearly 20% of the population were to get infected ,the direct medical expense, considering expense only during the course of the infection, it could be as high as \$163.4 billion ¹⁷. And with effective vaccination this can be considerably reduced.

Conclusion

The burden of various infectious disease and certain chronic diseases are more likely to cause devastating effects on present as well as future humanity, especially with the emergence of new diseases and increase in antibiotic resistance of already existing drugs . more over ,just creation of awareness and public health education are not at all sufficient to bring infectious diseases under control untill they are supported by much needed recommendations. We ascertain that various efforts should focus on various VPDs, as prevention is better than cure inter sectorial corination is needed which includes researchers and policy makers , and health professionals all should come together to ensure necessary steps are undertaken immunize adult and it would be more effective if life course immunization is also practice to build immunity and make the future ready.

There by improving adult vaccination coverage in India, it could help us to reduce the overall burden of disease among the adult population by reducing hospital admissions, health costs, and mortality rates, and improving quality of life.

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