ESTIMATES OF EX-SERVICEMEN POPULATION FOR NEXT 30 YEARS: A NEED TO REORIENT OUR HEALTH PLANNING

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ABSTRACT

A mathematical model, using survival analysis methods has been developed to estimate the total population as well as the populations as per specific age groups of ex-servicemen for the next 30 years. The results indicate that from the present population of 13.75 lakhs., the total population of ex-servicemen would be 15.62 lakhs by 2027 A.D. In addition, there are likely to be noteworthy changes in the population structure. While the population of geriatric age group (65 years and above) is only 21% at present compared to 49% from age group 45-54 years, by 2027 A.D. the geriatric age group would contribute to 34% of the ex-servicemen population while 45-54 years age group would constitute only 36%. There is a need, therefore, to start rethinking on our future plans as regards health services since geriatric health problems are likely to become a leading health issue after the next ten years.

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KEY WORDS : Ageing population; Demography; Epidemiological models; Health care planning.

Introduction

A major beneficiary of the comprehensive health services provided by the Armed Forces are the ex-servicemen. In fact this group needs to be provided the best possible level of care because of various psycho-social reasons, viz, the fact that they have given the best years of their lives for the sake of our service; they remind us of the fact that tomorrow we would be in their place, needing care; being old and infirm, they do need tender care and, finally, their opinion as regards the quality of health care may carry lot of weight among the peer groups. Needless to say that our Armed Forces Medical Services would need to meticulously plan and cater to the needs and care of ex-servicemen.

Planning always takes a futuristic approach. In addition, the single most important epidemiological information required in planning is the total population load and age structure of the clientele that is likely to be at some future date. However, despite the importance that ex-servicemen have for our service, as also the importance of future demographic estimates in planning the health care for this group, there seems to be a paucity of published data on this issue. In an effort to address this issue, a mathematical model was developed to forecast the future population and age structure of ex-servicemen.

The baseline figures for total population of ex-serv-

icemen at mid year of 1997 (approx 13,75,500) and the approximate number of persons entering this pool every year due to retirement were obtained from the relevant directorates. The published Government of India data on the proportion of population in different five years age groups (45 to 49, 50 to 54 years etc) and the age specific death rates for males for these five years age groups were obtained from standard publications [1] and were used for calculations. Using this data, a survival analysis model was built up using mathematical procedures for survival analysis [2,3].

Year-wise estimates of total population of ex-servicemen

It is seen from Table 1 that starting from 13.75 lakhs in 1997, the population is likely to rise consistently, reaching 14.29 lakhs in 2000 A.D., becoming 15.5 lakhs in 2015 A.D. and is likely to stabilise at 15.62 lakhs by 2027 A.D.

Future estimates of ex-servicemen according to various age groups

The details of total population of ex-servicemen, according to different age groups (45 to 54 years, 55 to 64 years, 65 years and above) are presented in Table 1. It is seen that in 1997, a very large population is in the age group 45 to 54 years (7.3 lakhs), with a smaller number of personnel being in 55 to 64 years age group and still smaller number (2.9 lakhs) being

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TABLE 1

Year-wise expected population of ex-servicemen, according to various age groups till 2027

Year	45-54 years	55-64 years	65 years and above	Total
1997	672757	412375	290368	1375500
2000	641179	447934	340297	1429410
2003	613296	480381	378959	1472636
2006	593425	496514	415642	1505581
2009	580582	499507	449298	1529387
2012	572737	495388	477347	1545472
2015	568115	488744	498560	1555419
2018	565462	482141	513210	1560813
2021	563968	476663	522442	1563073
2024	563139	472551	527658	1563348
2027	562684	469660	530151	1562495

65 years and above. Interestingly, it is seen that as the years would go by, the older population (65 years and above) is likely to increase substantially at the expense of the younger (45 to 54 years) age group, so that by the year 2027 A.D., there will be as many as 5.3 lakh personnel aged 65 years and above as compared to 5.3 lakhs in 45 to 54 years, and 4.7 lakhs in 55 to 64 years age group.

Population of different age groups according to different years

The results are presented in figure-1. It is seen that in 1997, the age group 45 to 54 comprises of almost half of the total population of ex-servicemen, while the older age group of 65 years and above comprises only about one-fifth (21%). As the time passes, the population of the geriatric group (defined as 65 years and above) [4] would significantly increase, while the proportion of persons in younger (45 to 54 years) age

Fig. 1 : Proportion of different age groups in the total population of ex-servicemen

group would go down, so that by the year 2027 A.D., 34% of all ex-servicemen would be aged 65 years and above while only 36% would be between 45 to 54 years.

The "plateau" effect

Fig-2 indicates that till the year 2020 A.D., the overall population of ex-servicemen will rise consistently. However, thereafter, the population projection curve plateaus off, with the population maintaining itself at about 15.63 lakhs. In fact, later on, by about 2027 A.D., there may even be a slight decline in the total population.

The transition" from middle aged to geriatric population

The details are presented in figure-3. It is seen that by the year 2012 A.D., the age group 45 to 54 years would have the maximum population, followed by 55 to 64 years group, while 65 years and above group would have the smallest population. However, from 2012 A.D., "crossing over" would start; the geriatric age group would overtake the 55 to 64 years age group in 2015 A.D. and would keep increasing in absolute size as well as in relative proportion, so that by 2027 A.D., it would be almost as large as the youngest age group of 45-54 years. The period between 2012 A.D. and 2027 A.D. would be like a "transitional zone" when the age structures would gradually change, with consequent changes in the types of health problems.

The findings of this study clearly indicate two aspects as regards the futuristic estimates of ex-servicemen population. Firstly, the population will continue to increase, on an average of 7500 each year, so that it would be 15.6 lakhs by 2027 A.D. Health services planning would therefore need to consider this expan-

Fig. 2 : Linear trend of expected population of ex-servicemen year-wise from 1997 to 2027 AD

Fig. 3 : The transition from middle aged to geriatric population

sion.

The second facet is even more noteworthy. This relates to changes that are likely to occur in the population structure over the next three decades. The finding that the proportion of ex-servicemen in the geriatric age group (65 years and above) is going to increase substantially, both in absolute numbers as well as in terms of relative proportions (5.3 lakhs and 34% respectively by 2027 A.D.) indicates that we may start

reorienting our health services to the health needs of a different type of age group, i.e., the geriatric problems. Thus, by 2027 A.D., a substantial load of disease would be in the form of long term complications of atherosclerosis, diabetes mellitus, osteoporosis, diseases of locomotor system, injuries, cataract, and so on. The transition, from present day morbidity profile, to one of a predominantly geriatric type is likely to occur between 2012 and 2027 A.D. With only 15 years left for such a transitional process to start, possibly now is the time to start planning for such changes.

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