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Exploring Public Health Requirements and Service Provision for Community Geriatrics: A Mixed Method Approach Aimed at Advancing Universal Health Care

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ABSTRACT

Background

Introduction

Ageing of population, an inescapable and irreversible demographic reality is associated with felt need for added, enhanced and quality support mechanisms in place for wellbeing and medical care of elderly especially among the resource poor population. There is rapid rise in the ascending trends of population size, distribution and associated facility demands, with the increase in quality of life, life expectancy and declining fertility rates. The study aimed to assess the community health needs of geriatric population for achieving Universal Health Coverage.

Methods

This questionnaire-based study using Participatory Action Research based, in-depth interviews supported by quantitative data collection through snow ball sampling technique was conducted in a tertiary healthcare center. This study was conducted during September 2020 to February 2021 among 90 study participants. The study participants were program managers, supervisors, implementers and beneficiaries. Those consenting to participate in the study were included herein.

Results

The observed phenomenon of highest prioritization for health resource capacity (90%), access to care (90%) and leadership policy and governance (75%) as responded by program managers is presented as factual percentages. However, these are challenged by the felt grim scenario reported by beneficiaries, who indicated public health (92.5%), leadership policy and governance (85%), and IEC and access to care (72.5% each) as areas of concern. Conclusions: The comprehensive concerted and result oriented inputs for Universal Health Care are needed to be addressed in line with the Sustainable Development Goals of United Nations.

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INTRODUCTION

Ageing of population, an inescapable and irreversible demographic reality is associated with felt need for added, enhanced and quality support mechanisms in place for wellbeing and medical care of elderly especially among the resource poor population. There is rapid rise in the ascending trends of population size, distribution and associated facility demands with the increase in quality of life, life expectancy and declining fertility rates. Hence, the proportion of those with above 60 years of age is increasing in the general population.[1,2] Advancements in the medical field have significantly reduced morbidity and mortality, leading to increased life expectancy. However, this rise in longevity has also brought about a surge in age-related issues.[3]The population of elderly naturally poses added burden of responsibility, financial expenses and technical support requiring trained manpower, community involvement, participation and volunteer support systems to be in place. As a result of declining birth and death rates and longer life expectancy—especially beyond age 65, which is typically considered the retirement age—the structure of the population pyramid has changed.

To improve public health planning based on current gaps in elderly care, it is estimated that the proportion of older people will rise by 2050—from 22.4% to 31.9% in developed countries, 9.9% to 20.2% in less developed countries, and 6% to under 11% in the least developed countries. [5] India's already stressed health system faces added pressure from the growing elderly population needing medical diagnosis, treatment, and long-term support. This highlights the need for more healthcare workers, modern equipment, trained professionals, and home-based counselling services. The current study emphasizes the importance of developing cost-effective, priority-based screening programs tailored to the diverse health needs of the elderly population. Additionally, the study advocates for the active involvement of community health workers in disseminating information and enhancing health education to improve the lifestyle and well-being of the elderly. It also underscores the value of integrating health promotion, care, support, and treatment through holistic approaches, focusing on rejuvenation, longevity, and geriatric pharmacotherapy, with specific attention to integrating AYUSH systems (Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homeopathy). The study concludes by stressing the need for public health reforms and proactive decision-making through robust screening, prevention, and control programs.The UNFPA study highlights that elderly individuals in India require support for activities of daily living (ADL), access to geriatric healthcare services, financial security through improved pension schemes, assistance for chronic disease and multi-morbidity management, social and emotional support through community engagement and self-help groups, infrastructure for in-situ aging and caregiver support, and robust policy interventions with data-driven planning and regulatory oversight for age-friendly services. [5]

The study aimed to assess the spectrum of facilities and services directed towards public health needs of community with geriatric population, at all levels of prevention. We explored the governance and support infrastructure at various levels to identify the existing provisions for geriatric care within the community. The study also focused on understanding the specific health needs of the elderly population, the extent of utilization, and the availability of standardized assessment tools for their evaluation. Based on the findings, we proposed recommendations to enhance and expand multidisciplinary and multilevel support systems for elderly care, both at home and within community settings.

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have significantly reduced morbidity and mortality, leading to increased life expectancy. However, this rise in longevity has also brought about a surge in age-related issues.[3]

The population of elderly naturally poses added burden of responsibility, financial expenses and technical support requiring trained manpower, community involvement, participation and volunteer support systems to be in place. Resultantly, the population pyramid structure changes and is due to decrease in fertility and mortality associated with higher life expectancy at age 65 years, which is generally considered as the age of retirement. [4]

To further public health interventions for evidenced situational analysis of deficient health care infrastructure, facilities and service provisions for geriatric ailments, it is estimated that the elderly population shall increase from 22.4%, 9.9% and 6% in developed, less developed and least developed nations to 31.9%, 20.2% and less than 11% respectively by year 2050. (Diversity in old age, 2016) Already overburdened health systems of India are additionally threatened by ever increasing expected beneficiaries in terms of services including diagnosis, treatment, care and support measures. This requires to rope in additional health service providers in the field with specialized equipments, technical experts and sociologist supported facilities providing counseling for home-based care.

In a UNFPA study conducted in seven States of India, and needs expressed by various groups of elderly shows 5%, 8% and 18% requirements for ADL (Activities in Daily Life). However, there is urgent and immediate need to understand needs of geriatric services and their deficiencies, challenges and threats when viewed from different perspectives of program planners, program managers, implementers and beneficiaries. Thus, the health system itself needs to reassess the futuristic trends for elderly population. [5]

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Methods

This study adopted a mixed-methods approach using Participatory Action Research, combining in-depth qualitative interviews with quantitative data collection. The data was gathered through a snowball sampling technique at a tertiary healthcare centre. This questionnaire-based study using Participatory Action Research based in-depth interviews supported by quantitative data collection through snow ball sampling technique was conducted in a tertiary healthcare center. The questionnaire underwent a meticulous development and validation process to ensure its reliability and validity. Firstly, a comprehensive literature review on community geriatrics and public health requirements was conducted to identify key themes and factors relevant to pillars of Universal Health Care. The questionnaire was then pre-tested with a small sample of individuals representative of the target population to assess its feasibility and comprehensibility. Feedback from the pre-test was used to make further refinements. The questionnaire was put forward to the experts in the field of public health as well as the representatives of three groups for validating. The Cronbach alpha(α) of questionnaire was found to be 0.81, suggesting a relatively high level of internal consistency. The questionnaire included 3 questions for each of the identified 7 parameters (service availability, service accessibility, service acceptability, service quality, financial risk protection, equity, and accountability) of Universal Health Coverage. This survey was conducted among stakeholders having direct involvement in health care service envisioning, performance, monitoring or evaluation in private health settings. The study population comprised of representative samples of program managers, supervisors, implementers and beneficiaries of

Health Care Facilities and Services. This study was conducted during September 2020 to February 2021 among 90 study participants. The sample size of 90 participants for this study was achieved through convenient sampling. Using the snowball sampling technique, participants (program managers, supervisors, implementers, and beneficiaries) were recruited iteratively, with initial respondents referring others who met the inclusion criteria. This approach allowed for the identification of a sufficient number of participants while focusing on the study's objectives. The qualitative sample size was determined based on the principle of content saturation, ensuring that no new themes emerged from additional interviews. For the quantitative component, the sample size was considered adequate to allow for statistical reliability, meaning that the data were sufficient to yield consistent, reproducible results and support meaningful interpretation of patterns or associations within the population studied. Additionally, the questionnaire validation process, particularly the calculation of Cronbach's alpha, influenced the sample size. With 21 items included in the questionnaire, the participation of 90 individuals exceeded the general guideline of having 5–10 respondents per item, ensuring reliable internal consistency. Participants unwilling to take part in the survey and those, who did not reply to all questions, were excluded from the study. The data was analyzed using Microsoft excel and SPSS (statistical package for social science) version 19 .The qualitative data collected through Participatory Action Research-based in-depth interviews was analyzed using a thematic approach. The analysis began with the verbatim transcription of interview to ensure accurate representation of the participants' responses. Researchers then familiarized themselves with the data by repeatedly reading the transcripts to grasp the nuances and context. Key phrases, concepts, and recurring patterns were identified and systematically coded, organizing the data into meaningful segments. These codes were then grouped to develop broader themes that captured the underlying patterns and insights related to the drivers of change and the enabling environment for community geriatrics The questionnaire included 3 questions for each of the identified 7 parameters of Universal Health Coverage. This survey was conducted among stakeholders having direct involvement in health care service envisioning, performance, monitoring or evaluation in private health settings.

The study population comprised of representative samples of program managers, supervisors, implementers and beneficiaries of Health Care Facilities and Services. This study was conducted during September 2020 to February 2021 among 90 study participants. The sample size of 90 participants for this study was achieved through a combination of methodological and practical considerations. Using the snowball sampling technique, participants were recruited iteratively, with initial respondents referring others who met the inclusion criteria. This approach allowed for the identification of a sufficient number of participants while focusing on the study's objectives. The sample aimed to include diverse stakeholders such as program managers, supervisors, implementers, and beneficiaries to ensure comprehensive representation. The size was deemed adequate for both qualitative and quantitative analyses, balancing the need for in-depth insights with statistical reliability. Additionally, the questionnaire validation process, particularly the calculation of Cronbach's alpha, influenced the sample size. With 21 items included in the questionnaire, the participation of 90 individuals exceeded the general guideline of having 5–10 respondents per item, ensuring reliable internal consistency. Inclusion criteria for the study participant were program managers, supervisors, implementers and beneficiaries. Those consenting to participate in the study were included herein. Participants unwilling to take part in the survey and those, who did not reply to all questions, were excluded from the study. This survey was conducted among stakeholders having direct involvement in health care service envisioning, performance, monitoring or evaluation in private health settings. The drivers of change and enabling environment were focused in this study for community geriatrics. The data was analyzed using Microsoft excel and SPSS (statistical package for social science) version 19. The qualitative data collected through Participatory Action Research-based in-depth interviews was analyzed using a thematic approach. The analysis began with the verbatim transcription of interviews to ensure accurate representation of the participants'

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Results

Within group comparison of beneficiaries illustrates the order of highly satisfied response in decreasing order of Public Health parameter of Universal Health Care(92.5%), Resource Capacity parameter of Universal Health Care(85%), IEC and Access to Care Parameter of Universal Health Care(72.5% each), Patient Empowerment, Screening And Prevention parameter of Universal Health Care(62.5% each) and Resource Capacity parameter of Universal Health Care(57.5%). The highest difference between low and high satisfaction was observed in Public Health parameter of Universal Health Care(92.5%) and lowest difference was observed in Resource Capacity parameter of Universal Health Care(40%). Access to Care and Public Health parameters of Universal Health Care depicts disagreement among some of the respondents.

Within group comparison for implementers illustrates the order of highly satisfied response in decreasing order with Leadership, Policy and Governance and resource capacity parameters (80%), IEC and patient empowerment parameters of Universal Health Care(60%), Resource Capacity and Screening and Prevention parameter (50% each) and Public Health parameter of Universal Health Care(45%). The highest difference between low and high satisfaction was observed in Leadership, Policy and Governance and IEC parameters (70% each) and lowest difference was observed in Screening and Prevention parameter (5%). The minimum positive response of satisfaction among any of the criteria was 5%. Within group comparison for supervisors illustrates the order of highly satisfied response in decreasing order with Patient Empowerment Parameter (100%), Resource Capacity parameter (90%), Leadership, Policy and Governance and Access to Care parameter (70% each) and IEC, Public Health &Screening and Prevention parameters of Universal Health Care (50% each).The highest difference between low and high satisfaction was observed in Public Health (92.5%) and lowest difference was observed in Resource Capacity parameter (40%). The minimum positive response of satisfaction among any of the criteria was absence of satisfaction. The supervisors were highly satisfied with patient engagement and empowerment (100%) and health resource capacity (90%). Health resource capacity was the only area consistently perceived as highly efficient, with 90% of respondents rating it as the most effective component of the system. Within group comparison for program managers illustrates the order of highly satisfied response in decreasing order with Patient Empowerment Parameter (95%), Resource Capacity and Access to Care parameters (90% each), Leadership, Policy and Governance (75%), IEC parameter(60%), Screening and Prevention parameter (50%) and Public Health parameter of Universal Health Care(45%). The highest difference between low and high satisfaction was observed in Patient Empowerment Parameter (95%) and lowest difference was observed in Public Health parameter (20%).

Table 1: Group wise response of the participants as per questionnaire developed for assessment of Universal Health Coverage.

Parameter/ Sub Parameters	Beneficiaries Response (n=40)			Implementers Response (n=20)			Supervisors Response (n=10)			Program Mangers Response (n=20)		
	H	M	L	H	M	L	H	M	L	H	M	L
Leadership Policy and Governance												
Is the policy of institution for facilities readily available and displayed prominently in the hospital for geriatric care and support?	0	1	10	2	5	1	5	0	0	9	2	0
Are number of sufficient personnel interested at all levels to ensure application of the desired policy initiatives for patients and people's welfare.	1	4	19	0	6	0	2	2	0	2	2	1
Are the policies and governance mechanisms reviewed regularly for proactive and reform-based amendments in the interest of geriatric patients?	0	0	5	0	5	1	0	1	0	4	0	0
Health Resource Capacity												
Are there sufficient personnel for diagnosis, treatment and care of patients?	5	10	3	1	1	1	3	0	0	6	0	0
Are all equipment and services fully functional?	1	9	3	3	3	0	2	1	0	5	2	0
Is there any interdisciplinary arrangement for health care services towards its expansion in the field viz. camps or for emergencies, as needed?	1	4	4	6	5	0	4	0	0	7	0	0
Health Information and Communication Infrastructure (Info Structure)												
How do you rate the system provided for availing information about the facilities and services.	0	5	11	2	7	0	1	2	0	7	5	0
What is the level of social media platforms being used for health communication?	1	0	11	0	6	0	0	0	0	3	1	0
How do you rate the computer support networks or manpower for addressing the issues of patients?	0	5	7	0	3	2	4	3	0	2	2	0
Access to Care												

What is the level of specialty or stream based care available to aged persons?	0	5	14	4	8	0	2	0	0	6	1	0
How is the quality of care being provided here for aged persons?	0	4	6	1	3	0	2	0	0	2	1	0
Is there any referral support mechanism in place for geriatric cases from remote rural areas?	0	2	9	2	1	1	3	3	0	10	0	0
Public Health												
Do you think that there are sufficient counseling facilities for geriatric care especially at home or old age home or such other facilities?	0	2	18	5	0	3	0	0	0	3	1	1
Are there sufficient 'at-door step' services in case of emergencies or during odd hours for old persons.	0	1	15	0	1	3	1	2	0	2	1	3
4Is there any already planned initiative functional by the Institution for comprehensive approach to geriatric problems.	0	0	4	2	3	3	3	3	1	4	4	1
Patient Engagement and Empowerment												
How do you rate the level of health facilities and services generally affordable by all.	2	6	13	5	4	0	5	0	0	10	0	0
Is there sufficient manpower and their responsibility fixation for health services?	2	4	10	6	2	0	3	0	0	5	1	0
Is there any participation of people/ their representatives in decision making?	0	1	2	1	1	1	2	0	0	4	0	0
Screening and Prevention												
Is geriatric group considered as priority for screening of debilitating or chronic diseases?	0	0	19	0	4	5	1	0	0	4	0	2
Is there sufficient involvement of non-government organizations or philanthropic network for facility extension to old persons?	0	0	11	1	2	4	1	3	1	3	2	1
Is there sufficient data proof for follow up activities after screening and prevention drives amongst old aged persons?	1	2	7	0	3	1	3	1	0	3	2	3

The responses observed among Program Managers and Beneficiaries showed a significant association for high responses ($p = 0.02$), while moderate and low responses were independently highly significant ($p < 0.00$ each) for the same parameters, as presented in Table 2. Similarly, for Implementers and Beneficiaries, high responses were significant ($p = 0.013$), with moderate and low responses being highly significant ($p < 0.00$ each), as shown in (Table 3). Among Supervisors and Beneficiaries, high responses were significant ($p = 0.04$), whereas moderate and low responses were highly significant ($p < 0.00$ and $p = 0.00$, respectively), as illustrated in (Table 4). Overall, each group of responses (High,

Moderate, and Low) demonstrated a highly significant intra-group association ($p < 0.00$) for cumulative parameters related to Universal Health Care, as detailed in (Table 5). The assessment of public health needs revealed both achievements and gaps in the current system. Among the met needs, health resource capacity was consistently appreciated across all groups, with program managers and supervisors rating it highly (90%). Patient empowerment emerged as another significant strength, particularly noted by supervisors (100%) and program managers (95%), reflecting effective initiatives to engage individuals in health care decisions. Access to care also received positive feedback from program managers (90%) and beneficiaries (72.5%), indicating reasonable availability and reach of health services. Leadership, policy, and governance were acknowledged as moderately satisfactory by program managers (75%) and implementers (80%), suggesting a fair level of confidence in the management and direction of health services.The responses observed among Program Managers and Beneficiaries showed a significant association for high responses ($p = 0.02$), while moderate and low responses were independently highly significant ($p < 0.00001$ each) for the same parameters, as presented in **Table 2.**

Table 2: Parameter wise association of varied responses between Programme Managers and Beneficiaries.

Parameter Number	Studied Parameter / Parameter Cluster	Program Managers Vs Beneficiaries					
		High response	Chi square & p-value	Moderate response	Chi square & p-value	Low response	Chi square & p-value
1	I	75	$X^2 = 10.84$	20	$X^2 = 29.52$	05	$X^2 = 79.91$
		03		13		85	
2	II*	75	p =.02	25	p =<.00	00	p =<.00
3		10		41		49	
4	III**	68		20		00	
5		00		18		83	
6	IV	95		05		00	
		10		28		63	
7	V	50		20		30	
		03		05		63	

* Parameter 2 and 3 combined ** Parameter 4 and 5 combined

Highlighted data in column c, e and g belong to Programme Managers, whereas the remaining data in these columns belong to Beneficiaries.

Similarly, for Implementers and Beneficiaries, high responses were significant ($p = 0.013$), with moderate and low responses being highly significant ($p < 0.00001$ each), as shown in **Table 3.**

Table 3: Parameter wise association of varied responses between Implementer and Beneficiaries

Parameter Number	Studied Parameter / Parameter Cluster	Implementers Vs Beneficiaries					
		High response	Chi square & p-value	Moderate response	Chi square & p-value	Low response	Chi square & p-value
1	I	10	X^2 =12.66	80	X^2 =	10	X^2 = 50.19
		03		13	32.13	85	
2	II*	30	p =.01	63		08	p =<.00
3		10		41	p=<.00	49	
4	III**	35		40		25	
5		00		18		83	
6	IV	60		35		05	
		10		28		63	
7	V	05		45		50	
		03		05		63	

* Parameter 2 and 3 combined ** Parameter 4 and 5 combined

Highlighted data in column c, e and g belong to Implementers, whereas the remaining data in these columns belong to Beneficiaries.

Among Supervisors and Beneficiaries, high responses were significant (p = 0.046), whereas moderate and low responses were highly significant (p < 0.00001 and p = 0.00003, respectively), as illustrated in **Table 4.**

Table 4: Parameter wise association of varied responses between Supervisors and

Parameter Number	Studied Parameter / Parameter Cluster	Supervisors Vs Beneficiaries					
		High response	Chi square & p-value	Moderate response	Chi square & p-value	Low response	Chi square & p-value
1	I	70	X^2 =9.66	30	X^2 =68.38	00	X^2 = 25.54
		03		13		85	
2	II*	70	p =.04	30	p=<.00	00	p =.00
3		10		41		49	
4	III**	55		40		05	
5		00		18		83	
6	IV	100		00		00	
		10		28		63	
7	V	50		40		10	
		03		05		63	

* Parameter 2 and 3 combined ** Parameter 4 and 5 combined

Highlighted data in column c, e and g belong to supervisors, whereas the remaining data in these columns belong to Beneficiaries

Overall, each group of responses (High, Moderate, and Low) demonstrated a highly significant intra-group association ($p < 0.00001$) for cumulative parameters related to Universal Health Care, as detailed in Table 5. The assessment of public health needs revealed both achievements and gaps in the current system. Among the met needs, health resource capacity was consistently appreciated across all groups, with program managers and supervisors rating it highly (90%). Patient empowerment emerged as another significant strength, particularly noted by supervisors (100%) and program managers (95%), reflecting effective initiatives to engage individuals in health care decisions. Access to care also received positive feedback from program managers (90%) and beneficiaries (72.5%), indicating reasonable availability and reach of health services. Leadership, policy, and governance were acknowledged as moderately satisfactory by program managers (75%) and implementers (80%), suggesting a fair level of confidence in the management and direction of health services.

Table 5: Intragroup association for cumulative parameters as per various response categories.

Groups	Chi Square value (X^2)	p-value (p)
High	46.07	<.00
Moderate	88.64	<.00
Low	117.39	<.00

However, several unmet needs highlight critical areas requiring attention. Public health interventions were highly prioritized by beneficiaries (92.5%), yet supervisors (50%) and program managers (45%) rated them lower, signaling gaps in preventive care and community health programs. Similarly, Information, Education, and Communication (IEC) efforts were rated as moderate by implementers (60%) and supervisors (50%), indicating insufficient health communication strategies. Screening and prevention services were identified as moderate by beneficiaries (62.5%) and supervisors (50%), highlighting a need for more accessible and comprehensive preventive care initiatives. Disparities in perceptions of leadership, policy, and governance, particularly dissatisfaction among beneficiaries (85%) and moderate satisfaction among implementers (80%), further underscore the need for improvements in policy implementation and governance inclusivity. Additionally, inconsistencies in satisfaction levels across stakeholders point to inequities in service delivery and the need for a more cohesive and inclusive approach to public health reforms. Addressing these unmet needs requires strengthening public health programs, enhancing communication strategies, expanding preventive care, and fostering inclusive policy frameworks that align with the expectations of all stakeholders.

Discussion

The highest positive response to Leadership Policy and Governance parameter of Universal Health Care (Parameter 1) (85%) was observed among beneficiaries with reducing order of response for the same among implementers (80%), program managers (75%) and supervisors (70%) in this study. It resonates with the need for leadership in policy, governance and infrastructure, indicated by studies conducted elsewhere and also gauged public health need. Although, the government's policy focuses on age integrated society and the persistent need for

service expansion for elderly especially women, there is observed dire requirement of inter-sectoral, inter facility, inter provider and inter disciplinary research with implementation initiatives which can be attained by carefully identifying and allocating the roles of various stake holders. [13] In an extensive assessment of ever-increasing health care burden for super-aged population (80 years or older), a comprehensive recommendation made to address cross cutting issues in Japan includes non-conventional health support strategies, development of technically powered spectrum of service providers, emphasis on geriatrics as a subject of learning and interventions. [10]

The highest positive response to Resource Capacity parameter of Universal Health Care (90%) was observed among supervisors and program managers with reducing order of response for the same among beneficiaries (57.5%) and implementers (50%) in the study. The need for manpower, infrastructure, funds, skill, knowledge, time and technique is hence essential to understand the phenomenon of Universal Health Care to support geriatric care facility and health care systems to be strengthened. It is a matter of concern for policy makers and professionals to provide adequate representation and equated support through health system alignment by using decentralized mechanism, application of modern health management tools and continuum of health services A critical analysis of the problems and challenges faced by the elderly highlights the need for concentric layering of care — that is, a tiered system of technologically intensive services, ongoing support, and structured follow-up plans. These strategies must be rooted in realistic assessments of the actual needs and demands of older adults, who are often deprived due to weakening financial support networks. This decline in support systems underscores the urgent need for evidence-based interventions that are responsive to their vulnerabilities and grounded in reliable data.[7]. The critical analysis of the problems and challenges faced by elderly directs for concentric layering of technologically intensive care, support and follow up plans by addressing the realistic needs and demands of the generally deprived population base of old adults due specifically to decreasing financial support networks meant for evidence-based interventions.[7]

The need as emphasized by authors Pin S et al.[15] and via reports on Elderly in India [8] are in resonance with the observations made here especially among the groups of implementers and beneficiaries. Srilanka has reformed its geriatric care services based on the success stories of maternal mortality ratio reduction by envisioning and implementing provisions of 'National Secretariat for Elders', reducing generation gap, advancing community networks of supportive supervision, multi-disciplinary interventions, collaboration at inter and intra sectoral levels and continuing education-research in geriatric medicine through national association and national post graduate institute. [6]
As a best practice, example of inter disciplinary initiative, the engineers and medical experts have developed specific designs in Netherlands which are helpful for prevention of fall, dementia, also providing comprehensive care to the aged by application of user-friendly devices in various spheres of rehabilitation. [18]
The highest positive response to IEC parameter of Universal Health Care (80%) in the current study was observed among implementors with reducing order of response for the same, among beneficiaries (72.5%), program managers (60%) and supervisors (50%). Although National Health Insurance provides infrastructure, facilities and services, the burden of disabilities and non-coverage of eligible older adults is a challenged, unaddressed area for achieving optimum Universal Health Coverage. [19] A study, focused on identifying the at risk scenario of geriatric population observed that the health infrastructure, service expansion and community support are needed to address anemia and physical disability amongst elderly. [14]
Care, support, and follow-up are crucial, as reflected by the highest positive response to the UHC parameter on access to care (90% among program managers), with decreasing responses from beneficiaries (72.5%), supervisors (70%), and implementers (60%). The increasing geriatric population increase the demand for secondary and tertiary preventive care and also is an additional burden on the constrained resources of concerned

countries. It also affects the health systems, Sustainable Development Goals SDGs fulfilment and social needs adversely. [16] Researchers have expressed concerns about the geriatric population not availing health facilities due to accessibility, affordability, availability and technical capacity related issues [1] In addition, training of medical, nursing and paramedical health care providers preferably with advanced technological support is recommended for filling the critical gaps of education, capacity building, research, social support, strategy formulation, public awareness and continuing health services and related researches.[5] The emphasis should be on making a justified equilibrium among the demography, available facilities and prospective planning especially for attaining self-sustainable home based care with the support of community volunteers. It is emphasized that the health services paradigm shifts should be discussed and appropriately merged with the national plans of multidisciplinary provisions and support systems.[10]

The unmet health needs of elderly are a challenge for geriatric health and associated social problem. Therefore, addressing the drivers of common morbidities like non communicable diseases is important through behaviour change communication. [17,19]

. While there are underlying differentiated demands across spectrum of socio-economic beneficiaries, another study suggests concerted holistic approach obtained through community participation under various national health programs for ascertaining strata wise quality of life. [9] Recommendations are made focussing on capacity building of geriatric care facilities, health care providers and geriatric care program, and the gold standard institutional models for comprehensive geriatric care are suggested to be 'acute geriatric units'. [12] With the narrowing of demographic difference in the share of elderly population in rural and urban areas, more growth of elderly population than general population and inability of elderly population to avail facilities, the social security network needs further strengthening, diversification and expansion of coverage.[5] The identification of challenges, resolving the problems, adding life to years, expansion of appropriate health services, all-inclusive approach for ethno-cultural diversities, insurance provisions and volunteer support groups are highly recommended for better institutionalized and home based care of elderly population.

It emphasizes the importance of developing cost-effective, priority-based screening programs tailored to the diverse health needs of the elderly population. Additionally, the study advocates for the active involvement of community health workers in disseminating information and enhancing health education to improve the lifestyle and well-being of the elderly. It also underscores the value of integrating health promotion, care, support, and treatment through holistic approaches, focusing on rejuvenation, longevity, and geriatric pharmacotherapy, with specific attention to integrating AYUSH systems (Ayurveda, Yoga, Naturopathy, Unani, Siddha, and Homeopathy). The study concludes by stressing the need for public health reforms and proactive decision-making through robust screening, prevention, and control programs.

The study findings aligns with *India Ageing Report 2023*, which emphasizes the need for targeted screening and preventive care for the elderly, highlighting the role of community engagement and policy-driven initiatives. The report shares the findings from this study and focus on cost-effective interventions along with the importance of community health workers in addressing the demographic and health challenges of aging.[5] Meanwhile, the study by Arai et al. on Japan's super-aged (80 years or older) society provides a contrasting perspective, emphasizing advanced geriatric care strategies through strengthening infrastructure facilities to provide better institutionalized care. While the Japanese model reflects a high level of technological integration and structured geriatric systems, this study focuses on integrating AYUSH systems, highlights culturally relevant, cost-efficient approaches suited to the Indian context. Both studies highlight the need for tailored, holistic, and preventive strategies for elderly care, with the *India Ageing Report* complementing the local perspective and the Japanese study providing a vision for future advancements in geriatric care.[5,11]

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Conclusion

Demographic characteristics are intricately linked to Sustainable Development Goals (SDGs) 3, 4, 5, 8, 10, and 17, highlighting the importance of world population aging policies to prioritize economic growth, gender equality, preventive care, social security, and evidence-based strategies (World Population Aging Highlights: The United Nations, 2019). Consequently, there is an urgent need for comprehensive, coordinated, and results-driven interventions for Universal Health Care, aligned with the United Nations' SDGs. However, the study has certain limitations, including a lack of generalizability due to population sampling, reliance on self-reported data with potential information bias, and the cross-sectional study design, which limits the ability to establish causal relationships. Addressing these limitations in future research may provide a more robust understanding of the relationship between demographic characteristics and the SDGs.

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Research Ethics

Research Project Code no. IEC-2019/52 granted permission vide letter no. PCMS/OD/2019/1518(6), Date 01.11.2019 by Institutional Ethics Committee of People's College of Medical Sciences and Research Centre, Bhopal having registration number ECR/519/Inst/MP/2014/RR-17.

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