Important findings of 10 best research articles

1. **Ganeshkumar P**, Bhatnagar A, Burka D, Durgad K et al intended to describe the experiences of discovering, developing, and deploying a point-of-care digital information system for public health facilities under the India Hypertension Control Initiative. A user-centered design (UCD) approach with an agile development model was adopted for the discovery, development, and deployment of the Simple information system. The development process of a digital information system for tracking hypertension and diabetes patients in the primary healthcare setting of India using a user-centered design approach with agile methodology was documented and aimed to share the experiences of the design, development, and deployment of a highly usable digital information system. My contribution in the paper was Responsible for the overall conception, Actively participated in the data analysis and interpretation, and contributed to the preparation of the manuscript. (10.1177/20552076241250153)
2. **Ganeshkumar P** et al published a protocol on hybrid 3 trial in BMC Public health, an implementation research protocol on community-based interventions to improve the control of hypertension and diabetes. India faces a significant health crisis, with millions suffering from hypertension and diabetes. The Community Control of Hypertension and Diabetes (CoCo-HD) program addresses this by implementing large-scale lifestyle interventions in Kerala and Tamil Nadu. This research evaluates the effectiveness of peer support and community mobilization strategies in overcoming barriers to diabetes and hypertension control. It uses a hybrid type III trial and frameworks like RE-AIM to assess clinical outcomes, treatment adherence, and scalability. The study's findings are expected to inform the scaling of effective interventions in India's healthcare system and other low- and middle-income countries. I'm study principal investigator. Overall a study conceptualization and developed implementation strategies has been developed for the scale-up the project. https://doi.org/10.1186/s12889-024-19746-6.
3. **Ganeshkumar P**, Saigal R, Gopal B, Shankar H, Kaur P et al aimed to explain the methods for setting up the continuum of care for NCDs in the disaster response. State health officials and the Disaster Response Team were sensitized about the importance of including NCDs in the response action. Steps to tackle NCDs during the disaster response were formulated. The state NCD cell decided to integrate NCDs in the response measures. The technical guidance document by the World Health Organization South-East Asia Region was consulted to formulate actions. The activities were implemented in 6 steps: prioritizing of major NCDS, patient estimation and drug stock preparation, standard treatment protocol, mapping of referral facilities, public engagement, and daily reporting of NCD consultations. Prioritizing the continuum of care of NCDs during floods among the program managers and care providers was crucial. The health education and communication campaign was done to sensitize the known NCD patients to seek early care. I'm study principal investigator. Contributed to the development of the methodology, supervised the research, and critically reviewed and revised the manuscript. 10.1017/dmp.2020.461
4. **Parasuaraman G**, Ayyasamy L, Aune D, Sen A, Nagarajan R et al. aimed to summarize evidence on association between adiposity and adult asthma. Relevant studies were retrieved through searches conducted in PubMed, and EMBASE up to March 2021. A total of sixteen studies (63,952 cases and 1,161,169 participants) were included in the quantitative synthesis. The summary RR was 1.32 (95% CI 1.21 1.44, I2 = 94.6%, pheterogeneity < 0.0001, n = 13) per 5 kg/m2 increase in BMI, 1.26 (95% CI 1.09–1.46, I 2 = 88.6%, pheterogeneity < 0.0001, n = 5) per 10 cm increase in waist circumference and 1.33 (95% CI 1.22–1.44, I2 = 62.3%, pheterogeneity= 0.05, n = 4) per 10 kg increase in weight gain. Although the test for nonlinearity was significant for BMI (pnonlinearity < 0.00001), weight change (pnonlinearity = 0.002), and waist circumference (pnonlinearity = 0.02), there was a clear dose-response relationship between higher levels of adiposity and asthma risk. The magnitude of the associations and the consistency of the results across studies and adiposity measures provide

strong evidence that overweight and obesity, waist circumference and weight gain increases asthma risk. These findings support policies to curb the global epidemic of overweight and obesity. My contribution in the research was secured funding for the project, wrote the initial draft of the manuscript, contributed to its revision, and approved the final version for submission. 10.1038/s41598-023-31373-6

5. **Ganeshkumar P**, Ilangovan K, Jagadeesan M, Reddy M, Vidhya FP, Vairamani V, et al. The Greater Chennai Corporation in partnership with the National Institute of Epidemiology conceptualized and implemented a remote monitoring program for home isolated COVID-19 patients. The key steps used to develop the program were to (1) decentralize triage systems and establish a home-isolation protocol, (2) develop a remote monitoring platform and remote health care workforce, and (3) onboard patients and conduct remote hybrid monitoring. This study describes the pragmatic solutions, critical components of the systems and processes, lessons, and experiences in implementing a remote monitoring program for home-isolated COVID-19 patients in a large metropolitan setting. I have developed implementation strategies, handled troubleshooting during the research, edited the manuscript, and approved the final version. 10.9745/GHSP-D-21-00458
6. **Ganeshkumar P**, Muthappan S, Ponnaiah M, Virumbhi V, Thangaraj JV, Muthuperumal P, et al. aimed to study the use of information technology tools for syndromic surveillance at selected mass gatherings in South India between 2015 and 2018. The number of participants in the religious mass gatherings ranged from 100 thousand to 3 million, and out-patients seeking care for syndromic illness ranged from 4,000 to 25,000 per event. More than five platforms were used and captured information on 17 syndromes. A total of 61,523 patient details during syndromic surveillance were captured. The most frequently reported syndromes were injuries, fever, and diarrhoea of the reported illness. This study concluded that cost-effective open-source technologies are intuitive, adaptable, and inexpensive to maintain and operate in real-time. Therefore, enhanced syndromic surveillance could detect diseases early in mass gatherings. I Played a major role in the conceptualization of the project, developing methodology, software validation, and supervising the writing process, including drafting and editing the manuscript. 10.9745/GHSP-D-21-00458
7. Kaur P, Kunwar A, Sharma M, Durgad K, **Ganeshkumar P** Gupta S, India Hypertension Control Initiative collaboration, et al. The project was launched in 2018–2019 in 26 districts across five states: Punjab (5), Madhya Pradesh (3), Kerala (4), Maharashtra (4), and Telangana (10), with five core strategies: standard treatment protocol, reliable supply of free antihypertensive drugs, team-based care, patient-centered care, and an information system to track individual patient treatment and blood pressure control. The proportion of the estimated people with hypertension who had it controlled and documented in public clinics increased three-fold, albeit from very low levels (1.4–5.0%). The IHCI demonstrated the feasibility of implementing protocol-based hypertension treatment and control supported by a reliable drug supply and accurate information systems at scale in Indian primary health care facilities. Lessons from the IHCI's initial phase has informed plans to improve screening in health care facilities, increase retention in care, and ensure a sustained supply of drugs as part of a nationwide hypertension control program. Contributed to the development of the methodology, supervised the research, and critically reviewed and revised the manuscript. 10.1038/s41371-022-00742-5
8. Chavan TA, Kaviprawin M, Sakthivel M, Kishore N, Jogewar P, **Ganeshkumar P**, et al. conducted a retrospective cohort study using secondary data from the India Hypertension Contol Initiative (IHCI) for five districts in Punjab (Bathinda, Gurdaspur, Hoshiarpur, Mansa, and Pathankot) and four in Maharashtra (Bhandara, Satara, Sindhudurg, and Wardha) during 2018–2021 to assess the enrolment and treatment outcomes changes across facilities from 2018 to 2022 and examine the associations between the decentralization process and BP control. The study explained that among **394,038** individuals registered with hypertension from 2018–2021,

69% were under care in 2022. Nearly half of those under care (129,720/273,355) received treatment from HWCs in 2022. Care of hypertensive individuals from district hospitals (14%), community health centres (20%), and primary health centres (24%) were decentralized to HWCs. Overall BP control rose from 20% (4,004/20,347) in 2019 to 58% (157,595/273,355) in 2022, while missed visits decreased from 61% (12,394/20,347) in 2019 to 26% (70,894/273,355) in 2022. This trend was consistent in both states. HWCs exhibited the highest BP control and the lowest missed visits throughout the study period compared to other facility types. Responsible for the overall conception and design of the research, analysis of the data, interpretation of results, and drafting and editing of the manuscript. Contributed to formal analysis, software development, validation, and visualization of the results, as well as writing and editing the manuscript.

9. Kunwar A, Kaur P, Durgad K, **Parasuraman G**, Sharma M et.al., conducted a study to quantify the availability of antihypertensive drugs in 2019–20 and described the practices in supply chain management in 22 districts across four states of India. Twenty-two districts from 4 states (Punjab, Madhya Pradesh, Telangana, and Maharashtra) were studied. Data collected on drug procurement from 2018 to 2020 and drug availability from April 2019 to March 2020. Results showed that all states selected drug- and dose-specific protocols with Amlodipine as the initial drug and shifted to morbidity-based forecasting. The total number of antihypertensive tablets procured for the 22 districts increased from 16 million in 2017–2018 to 160 million in 2019 2020. The proportion of facilities with Amlodipine stock-out was below 5% during the study period. Amlodipine stock was available for at least 60 patient days from the third quarter of 2019 onward in all districts. As a conclusion, this study demonstrated that including best practices can gradually strengthen the procurement and supply chain for anti-hypertensive in a low-resource setting. Contributed to formal analysis, software development, validation, and visualization of the results, as well as writing and editing the manuscript. 10.1371/journal.pone.0295338
10. Kaur P, Sakthivel M, Venkatasamy V, Jogewar P **Ganeshkumar P** et al conducted a study to improve hypertension treatment in primary care as the treatment coverage is low in India and estimated the effectiveness of various protocol steps to achieve blood pressure (BP) control in public sector health facilities in Punjab and Maharashtra, India, where the India Hypertension Control Initiative (IHCI) was implemented. Study population involved the treatment records of people who were enrolled for hypertension treatment and follow-up as per treatment protocol under IHCI between January 2018 and December 2021 across 23 districts of two states in India, namely Maharashtra and Punjab. From the results, it was evident that simple drug- and dose-specific protocols helped achieve a high control rate among patients retained in care under program conditions and treatment protocols starting with a single low-cost drug and escalating with the same or another antihypertensive drug depending on the cost and availability was recommend. Played a key role in developing the methodology, overseeing the research process, acquiring data, and revising the manuscript. 10.5334/gh.1305

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