TAMIL NADU HEALTH SYSTEM REFORM PROGRAM

OPERATIONAL RESEARCH PROGRAM
DISSEMINATION WORKSHOP

Date : 23rd January 2025

About the Operational Research Program

The Operational Research Program (ORP) is an innovative and pioneering initiative launched by the Department of Health and Family Welfare, as part of the Tamil Nadu Health System Reform Program (TNHSRP) supported by the World Bank.

The primary purpose of this program is to encourage and support "Operational Research" studies that would help in strengthening the public healthcare delivery system in Tamil Nadu. Research teams from across the country are encouraged to take part in this program. The program has a rigorous evaluation process for selecting research proposals, as these studies are expected to (i) identify current challenges and operational impediments in the implementation of various healthcare interventions and (ii) suggest operational measures to enhance the overall effectiveness and efficiency of the delivery system.

So far, the program has commissioned 30 studies (from 206 research proposals received during 2020-24) on diverse topics ranging from primary health care to higher tertiary care services in Tamil Nadu. Research teams from several private and public Institutions have been engaged in this program. Indian Institute of Technology (Madras) serves as the Nodal Agency for implementing this program.

This brochure provides details of the eight studies commissioned under the OR program for the year 2022-2023. It provides the overall objectives, study settings, key findings/results, and suggestions/recommendations.

Operational Research Program is expected to (a) provide evidence for introducing operational measures to improve the performance of the public health care delivery system, (b) build "research capacity" in the public health system, and (c) promote networking among research groups within Tamil Nadu and other parts of the country.

I am very glad to note here that the studies carried out so far have contributed substantially in fulfilling the above-mentioned objectives of the Operational Research Program. I wish the very best for the successful continuation of this pioneering initiative of the Dept of Health and Family Welfare, GoTN.

Dr. A Arun Thamburaj IAS.
Project Director, TNHSRP

Operational Research Program : 2020-2021
(Dissemination held on 21.01.2023)

01 Patient Safety

02 Antimicrobial Use

03 Bio-Medical Waste Management

04 108 Ambulance Services

05 Tamil Nadu Accident and Emergency Care Initiative (TAEI)

06 Screening of Breast and Cervical Cancer

Operational Research Program : 2021-2022
(Dissemination held on 09.10.2023)

01 Strengths and Weaknesses of Mental Health Program in TN

02 Impact of Covid 19 on RCH services in TN

03 Effect of CoVID-19 on Tuberculosis in TN

Operational Research Program : 2022-2023

This brochure highlights the Objectives, Methodology, Results and Recommendations for the eight studies commissioned under following six themes - Dissemination 23rd January 2025

01 Quality Accreditation Process (NQAS Certification)

02 Equipment Utilization and cost benefit Analysis of High End Equipment

03 Evaluation of Health and Wellness Centres

04 Cancer Management and Outcomes for Solid Tumours

05 Emergency Care and Recovery Centre -Mentally ill People

06 Chronic Kidney Disease of Undetermined Aetiology

Operational Research Program : 2023-2024 (Ongoing)

01 Non-communicable diseases - Social and Behavioural Change, and Communication (NCD – SBCC)

02 Tamil Nadu Quality Enhancing Structured Training (TAN-QuEST)

03 Trauma Care

04 Adolescent Anaemia

05 Chief Minister's Comprehensive Health Insurance Scheme Tamil Nadu (CMCHIS TN)

06 Labour Room Quality Improvement Initiative (LaQshya)

A situational analysis of Quality / Accreditation of public facilities in Tamil Nadu - Shree Balaji Medical College, Chennai

Study 1
Theme 1
ORP : 2022-23

OBJECTIVES

- To comprehend the various lessons learnt from NQAS certification process
- To assess the current status of certification, with all its strengths, weaknesses, opportunities, and threats for sustenance of certification status
- To provide an evidence-informed basis for formulating future strategic directions for scaling and sustaining certification of health facilities
- To compare certified health facilities with non-certified health facilities in terms of provision of quality care and outcomes

STUDY SETTING

- Primary and Secondary public health facilities in Kancheepuram, Trichy, Coimbatore, Madurai & Kanyakumari districts

STUDY POPULATION

- State nodal officers, District administrators, consultants & Nodal officers. CMOs, MS, MOs and staff of selected PHCs, CHCs, DHs & SDHs and patients visiting these health facilities.

STUDY BUDGET

Actual Sanctioned INR 21,38,280/-
Completed study by budget of INR 13,83,445/-

RESULTS

- Lack of need-based funding & delay in fund release
- Difficulty in preparing SOPs, understanding check list & lack of skills were barriers for certification
- Good infrastructure, provision of good services &availability of essential drugs were strengths for sustenance and renewal
- Lack of basic health workers was a major issue in SDHs with bed strength < 100
- Registers were not updated & quality related meetings were not regularly conducted
- Joint working culture & sense of ownership was visible in certified health facilities compared to of non-certified
- Clean ambience, good patient amenities, and adoption of recommended practices were observed in certified health facilities compared to non-certified, however, no visible changes were observed in terms of performance

RECOMMENDATIONS

- District training cell should be established, to provide periodic quality training for staff related to certification
- Funding provided should be need based & finalised in consultation with the District officials.
- Periodic monitoring systems should be established and inclusion of quality related indicators in regular HMIS is essential for sustenance and renewal
- The State should explore the possibility of developing standard guidelines/formats, which can be uploaded in the health department website for easy reference and downloading and to move to digital registers as it saves time and makes monitoring easy.

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Managing & sustaining accreditation for transforming health care in public settings-Evidence from Tamil Nadu - NMIMS (Narsee Monjee Institute of Management Sciences, Mumbai)

Study 2
Theme 1
ORP : 2022-23

OBJECTIVES

- To examine the differences in service quality experienced by patients visiting accredited public facilities and those in non-accredited ones
- To identify challenges faced by public hospitals in maintaining NQAS accreditation standards, explore potential solutions, and design an optimal mix to sustain these standards

STUDY SETTING

- Data collected from 40 facilities including DHQHs, GHs, CHCs, and PHCs across 22 districts of Tamil Nadu.

STUDY POPULATION

- Survey respondents: 1756 (Outpatients: 912, Inpatients: 844).
- In-depth interviews and focus group discussions with 98 healthcare personnel and administrators from various facilities.

STUDY BUDGET

INR 24,88,500/-


Non Accredited


Accredited

RESULTS

- Patients experience better service quality in accredited facilities compared to that in non-accredited ones
- Major issues: lack of cleanliness, physical privacy, drinking water, mosquitoes, waiting time, etc.
- Inadequate NQAS Gap funds; irregular NHM funds flow and utilization; 20 to 30% of CMHIS claims rejected.
- Shortages of manpower at all levels; Deputation and reliance on PG Bond students affecting quality standards
- PWD non-compliance with NQAS standards
- Clutter of regulatory and directional signages and IEC in the wall
- Documentation burden compromising patient care; incomplete case sheets
- Patients incur out-of-pocket expenses on drugs and diagnostic tests

RECOMMENDATIONS

- Ensure adequate allocation of funds for NQAS gaps and quality management based on performance.
- Review manpower adequacy and regular recruitment.
- Rationalization of registers; periodic audit of registers, prescriptions, case sheets, etc.
- Mandate consultation/approval with the hospital superintendent or MO in charge of PWD works in the facility
- Enhance supervision and accountability for biomedical waste management and disposal and housekeeping practices
- Encourage a "Quality Culture" in public facilities with peer review assessments and inculcate a sense of collective responsibility.

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Evaluation of functioning of Health and Wellness Centres in Tamil Nadu -St. John's Research Institute, Bangalore

Study 3
Theme 2
ORP : 2022-23

OBJECTIVES

- To assess utilization of health care services by the communities for AB-HWCs and HSCs.
- To assess the functionalities of both AB-HWCs and HSCs in terms of delivery of health services
- To assess the competencies of health care workers (HCWs) at both HWCs and HSCs
- To assess the opportunities and challenges faced by HCWs and suggestions to improve the delivery of services.

STUDY SETTING

- Three districts of Tamil Nadu, Kanyakumari, Nagapattinam and The Nilgiris

STUDY POPULATION

- 145 health facilities in these 3 districts (75 Health and Wellness Centres, and 70 Sub Centres). 1200 households for community survey in the 3 districts.

STUDY BUDGET

INR 35,26,950/-

RESULTS

- The surveyed population in Kanyakumari (68%) and Nilgiris (65%) had moderate awareness of the HWCs, and the utilization in last 1 year was only 22% and 50% respectively. While the awareness and utilization of HWCs was minimal in Nagapattinam (<10%).
- As compared to HSCs, HWCs had better infrastructure in all 3 study districts. Drinking water availability and lack of functional toilets were the major concerns both for health facility staff and the patients.
- Vital shortage of health workforce training coupled with lack of available equipment, as well as some shortage in supply of essential medications in both the health facilities.

RECOMMENDATIONS

- The community awareness and utilization need to be scaled up by conducting more outreach activities including health camps.
- The infrastructure of the existing HWCs and HSCs needs to be improved and maintained for cleanliness – better building, proper waiting area, consultation and examination area, functional toilets and availability of drinking water to be prioritized.
- Addressing non-availability, non-functional status, and lack of internet connection for data entry equipment like laptops/desktops/tabs at health facilities as they play a major role in routine data entry, teleconsultation, and referral chain mechanisms.
- Re-skilling and up-skilling the HCWs by repeated and robust training for improving their health care services.

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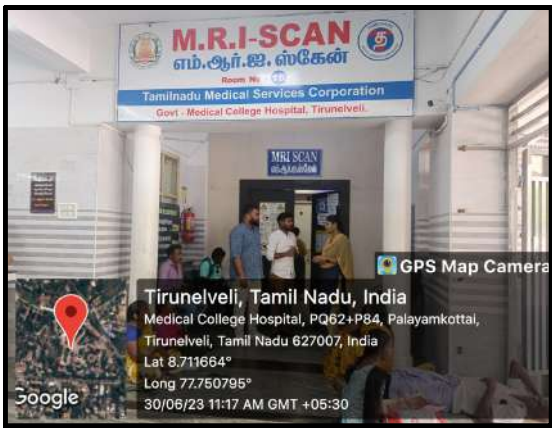
Utilization and economic evaluation of advanced diagnostic and therapeutic healthcare equipment in public healthcare facilities of Tamil Nadu - ESIC Medical College & PGIMSR, Chennai

Study 4
Theme 3
ORP : 2022-23

OBJECTIVES

- To determine the equipment utilization indices for the advanced diagnostic and therapeutic healthcare equipment
- To perform economic evaluation for the advanced diagnostic and therapeutic healthcare equipment from health system and societal perspective

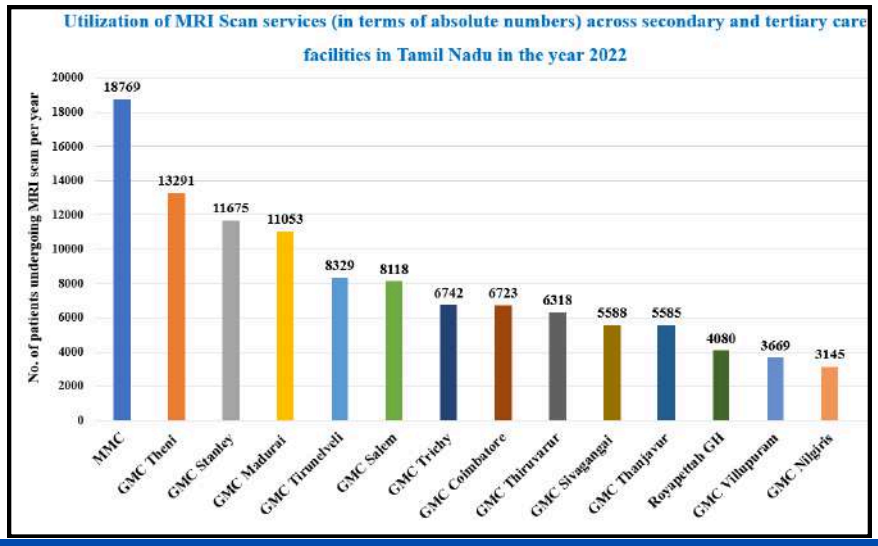


STUDY SETTING

- 23 public healthcare facilities (14 Medical colleges and 9 GHs) in Tamil Nadu

STUDY POPULATION

- Advanced diagnostic and therapeutic healthcare equipment in the selected healthcare facilities.
- Patients undergoing advanced diagnostic and therapeutic procedures in the selected healthcare facilities.



STUDY BUDGET

Actual Sanctioned INR 24,19,939/-
Completed study by budget of INR 18,14,954/-

RESULTS

- The utilization rate per 100,000 OPD visits was highest in moderate and low HDI districts such as Salem, Thiruvarur, Nilgiris, Sivagangai for equipment like CT and MRI scans.
- Significant non-utilization of CMCHIS for diagnostic procedures like CT scan (53.4%), PET (51.4%) and MRI (28.9%).
- From a societal perspective, patients spend twice as much as the health system to access services.
- For radiotherapy equipment, the cost per procedure spent by the Government was about 10-100 times more in low-utilization facilities when compared to high-utilization facilities
- The Government spends almost five times higher the cost per CT scan procedure in low-utilization facilities, compared to high-utilization facilities

RECOMMENDATIONS

- Implement robust scheduling systems, and referral pathways, to efficiently direct patients to facilities with available advanced therapeutic equipment.
- Implement strong awareness initiatives about CMCHIS-claimable services, and establish helpdesks, prioritizing facilities with higher CMCHIS non-utilization
- Consider covering a portion of direct nonmedical and indirect costs of patients
- For high-cost diagnostics and therapeutics, such as MRI scans and radiotherapy, ensure that patients are aware of and utilize their insurance benefits to reduce out-of-pocket expenses.

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Understanding the correlation between social determinants of delays in diagnosis and management and outcomes for solid cancers in Tamil Nadu using a multicentric mixed method study -PSG Institute of Medical Sciences and Research, Coimbatore

Study 5
Theme 4
ORP : 2022-23

OBJECTIVES

- Identify social determinants & geographical barriers for delays in cancer diagnosis and management for patients Head & Neck, lung and Gastrointestinal tract cancers in Tamil Nadu.
- Correlate these delays with cancer outcomes.

STUDY SETTING

- 32 Cancer Hospitals across Tamil Nadu
  - North Zone: 7 Hospitals
  - West Zone: 8 Hospitals
  - East Zone: 9 Hospitals
  - South Zone: 8 Hospitals

STUDY POPULATION

- Patients: 2076
  - Resident of Tamil Nadu
  - Head and Neck, cancers, lung cancers and GI cancers (any age & stage)

Type of Delay	Definition	Significant Delay
Primary/Patient Delay	Time from onset of symptoms to first medical contact in days (or weeks)	4 weeks (28 days)
Secondary/Diagnostic Delay	Time from presentation to a doctor/hospital to diagnosis of cancer in days (or weeks)	4 weeks (28 days)
Tertiary Delay/ Treatment Delay	Time from diagnosis of Cancer to start of cancer treatment in days (or weeks)	4 weeks (28 days)
Referral Delay	Time from presentation to a doctor/hospital to referral to a cancer centre for diagnosis/treatment of cancer in days (or weeks)	4 weeks (28 days)
Total Medical Related Delay	Time from presentation to a doctor/hospital to start of cancer treatment in days (or weeks)	8 weeks (56 days)
Total Delay	Time from onset of symptoms to start of cancer treatment in days (or weeks)	8 weeks (56 days)

STUDY BUDGET

INR 24,36,000/-

RESULTS

Primary delay or patient delay

- There was no significant difference in the primary delays between the cancer sites.

Secondary Delay or Diagnostic Delay

- The most common reason for secondary delays was that the patient obtained a second opinion (25%).
- There was relative risk of having a secondary delay if there was a referral delay: There was 36 times more risk of having a secondary delay if there was a referral delay.

Tertiary Delay

- The most common reason for tertiary or treatment delays was financial reasons (23.8%) followed by patient not being aware of the disease (19.9%) and time taken for second opinions (15.9%)
- Tertiary delays were significantly more with the distance from home to current treating hospital (P=0.02).

RECOMMENDATIONS

- Improve Access to Screening, Diagnostic Services, Oncopathology and Oncologists
- Leverage Technology
- Telementoring/Doctor-Doctor Teleconsultation/ Virtual Tumour Boards
- Expand Health Insurance Coverage-Include diagnostic procedures, alternate systems of medicine, palliative care, day-care/home-based cancer care
- Monitor Delays: "Carrot and Stick Approach"
- Carrot- Reward hospitals with fewer cancer delays,
- Stick- Action on hospitals with more cancer delays for Performance

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A mixed method study on the factors leading to the delay in cancer management and its implication for treatment outcomes for most common solid tumours among women in regional cancer centre in Tamil Nadu.
- Stanley Medical College, Chennai

Study 6
Theme 4
ORP : 2022-23

OBJECTIVES

- To explore the factors leading to delay in cancer management among the study participants with ovarian and genitourinary malignancies and association with treatment outcomes.

STUDY SETTING

- Patients registered with genitourinary and ovarian cancers (2017 to 2021) in districts across Tamil Nadu were interviewed in their households[n=606]; In Depth Interviews(n=38) were conducted.

STUDY POPULATION

- Households [n=606]
- In-Depth Interviews (n=38)

STUDY BUDGET

INR 25,32,000/-

RESULTS

- More than half [55% of participants] had global delay of more than 3 months for cancer care.
- The median duration for access, diagnostic and treatment intervals were 39 days [IQR:144], 7.5 [IQR:26 days] and 12 [IQR:24 days] respectively. The proportion of patients with access delay, diagnostic delay and treatment delay were 55.1%, 21.6% and 22.6% respectively.
- The highest delay was documented for penile cancer followed by testicular cancer and ovarian cancer. Perceived and internalized stigma played a vital role in delay, esp. for cancer penis.
- About 71% of patients had non-compliance to treatment/follow-up.
- The participants faced worse financial outcomes: Catastrophic health expenditure rate was 71.9%; About half [55.8%] of the participants got into debts for cancer management.

RECOMMENDATIONS

- A cancer survivor card with a unique ID number to be generated at the initial point of registration for effective tracking and to ensure adherence to follow-up.
- The need for One-stop cancer centres for integrated cancer care to avoid fragmented, impoverishing cancer care trajectory linked with a Toll-free helpline to provide lifelong holistic and psychosocial support for cancer patients/families.
- Focused behaviour change communication sessions to promote healthy proactive lifestyle for cancer patients as well as advocacy to destigmatize cancer and its management to be provided to cancer patients and their families
- Mandatory competency upgradation training on early detection of cancer and continuum of care with effective communication to be provided for all categories of health care professionals.

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Evaluation of rehabilitation of wandering mentally ill people, and reunion with their families (through Emergency Care and Recovery Centres, ECRCs) run by NGO model in Tamil Nadu
-National Institute of Epidemiology, Chennai

Study 7
Theme 5
ORP : 2022-23

OBJECTIVES

- To describe the ECRC program implemented in Tamil Nadu
- To evaluate and compare the functioning of Government-run and NGO-run ECRC centers in Tamil Nadu
- To explore the strengths and challenges of ECRC centers in Tamil Nadu

STUDY SETTING

- Govt. run ECRC (N=7) (Thiruppur, Theni, Villupuram, Thiruvannamalai, Pudukottai, Chennai, Vellore)
- NGO run ECRC (N=6) (Thanjavur, Madurai, Tirunelveli, Erode, The Niligiris, Sivagangai)


Ranipet ECRC centre

STUDY POPULATION

- Beneficiary survey: All the eligible patients admitted during the visit N=52 (Govt-run=24 & NGO-run=28)
- Clinical record review: N= 250
- IDIs among stakeholders: N=32

STUDY BUDGET

INR 9,97,500/-.

RESULTS

- In 2023, the 13 surveyed ECRC centers admitted more than 1600 homeless persons with mental illness (around 1200 from 7 government-run ECRCs and around 400 from 6 NGO-run ECRCs).
- Overall the bed occupancy rate of the ECRC centers is above 90%. Government-run centers have a bed occupancy rate of 104%, indicating the need for more beds in these centers. Government-run centers provide relatively better clinical care.
- Six out of ten admitted patients reunite with their families, with a slightly higher reunification rate in government-run centers. Most patients reported symptomatic improvement during discharge (78%); however, only 2 out of 10 patients discharged reported remission. Three out of ten discharged patients reported good ADL and social skills.

RECOMMENDATIONS

- **Integrate Best Practices:** Combine the strengths of both government-run and NGO-run models and share best practices. Develop and adopt a single unified convergent model across the state.
- **Increase resources** (Fund, staff and training). A Dedicated Psychiatrist position should be ensured in all the ECRCs
- **Diversity in Food Menus:** Revise food menus to include a variety of protein-rich foods, ensuring balanced and nutritious meals. Assess the nutritional status (BMI) of patients at admission and discharge
- **Female Admissions:** Explore reasons for reduced female admissions to address the inequity issue. Intervene in centers with no female admissions to start admitting female patients.

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Prevalence and risk factors of chronic kidney disease of uncertain aetiology among agricultural workers in different agroclimatic zones of Tamil Nadu - Institute of Nephrology, MMC

Study 8
Theme 6
ORP : 2022-23

OBJECTIVES

- To estimate the **prevalence of CKD** among agricultural workers in different agroclimatic zones of Tamil Nadu
- To estimate the **prevalence of CKD-u** among agricultural workers in different agroclimatic zones of Tamil Nadu
- To analyse the **risk factors of CKD-u** if any among agricultural workers in in different agroclimatic zones of Tamil Nadu

STUDY SETTING

- North Eastern Zone, North Western Zone and Hilly zone, Western Zone, Cauvery Delta Zone Southern Zone of Tamil Nadu

STUDY POPULATION

Adult more than 18 years of age whose predominant occupation is farming related manual labour and are actively involved in manual farming-related field works.

STUDY BUDGET

Actual Sanctioned INR 24,56,120/-
Completed study by budget of INR 12,28,060/-

RESULTS

- The overall prevalence of CKD among the agriculture population is 5.31% (178/3350).
- Among the five agro-climatic zones the north-east has highest prevalence of 7.7%.
- As per the definition of Srilankan Nephrology Association for CKDu, 2.66% (89/3350) were clinically diagnosed as CKD of Unknown origin. Age, lack of formal education, diabetes, hypertension, proteinuria, history of calculus, history of high cholesterol, anaemia, exposure to smokeless tobacco and long hours of outdoor work was found to be significant risk factor for CKD among agricultural workers.

RECOMMENDATIONS

- Estimated prevalence of chronic kidney disease among agricultural workers in five agroclimatic zones of Tamil Nadu was 5.3%
- Prevalence of CKD-unknown aetiology in this study was 2.6%
- The North- East zone has a higher prevalence of CKD compared to other zones.
- prevalence of diabetes and hypertension among the study population was 13.4% and 30.6% respectively
- Nearly 87% of them were asymptomatic for kidney disease and need screening annually.
- The prevalence increases after as age cut-off of 45 years, so those above this age can be defined as high-risk groups and can be subjected to screening by measurement of serum creatinine and urine dipstick for proteinuria.

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Operational Research Program Team

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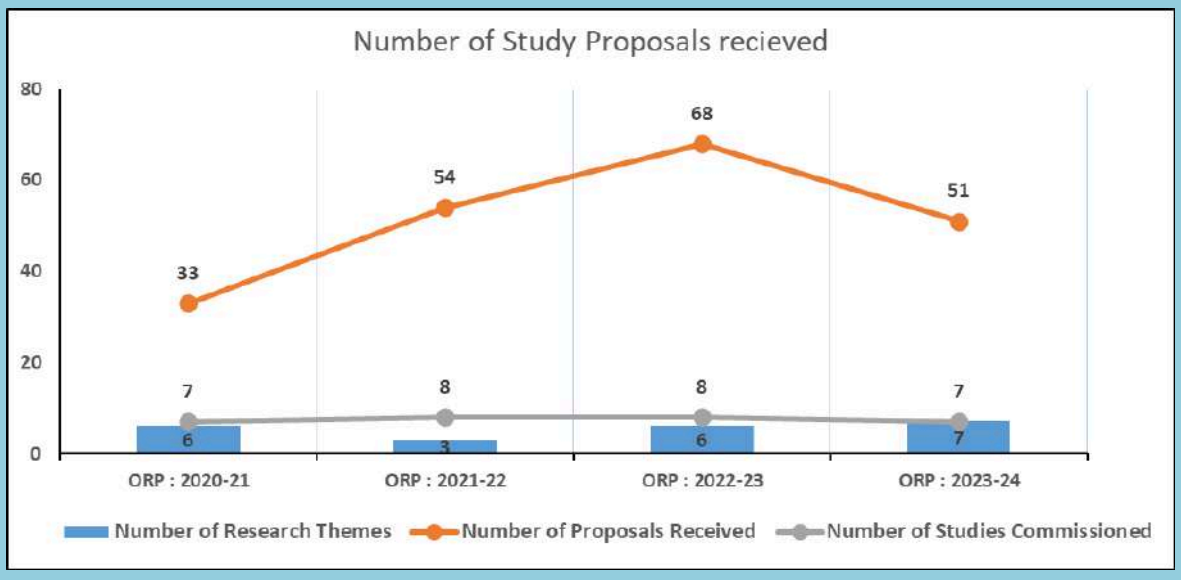

We have received 206 Proposals and commissioned 30 studies during 2020-24.

ORP: 2020-21 – Study Results Disseminated on 21-1-2023

and

ORP: 2021-22 – Study Results Disseminated on 09-10-2023
