Research Topics/Areas for Ph.D. Fellowship Programme

CENTRAL COUNCIL FOR RESEARCH IN AYURVEDIC SCIENCES
MINISTRY OF AYUSH, GOVT. OF INDIA, NEW DELHI

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Certain Groups of interlinked subjects identified for placing the common research topics in accordance with the priority areas under the concerned schemes and mandate of CCRAS and Ministry of AYUSH are as under:

Drug Rsearch:

(in Dravyaguna / Rasashastra / Botany / Chemistry / Pharmacognosy / Pharmacology)

1. Validation of classical Ayurvedic medicines, formulations and therapies which are not taken up for research studies so far or confirm the results of previous studies, if any, in wider aspects.
2. Comparison of original drug with substitute drug for its identification, properties and action.
3. Comparison of drugs with different Botanical identity used with one Ayurveda nomenclature.
4. Comparison of different parts of a particular plant in comparison with indicated / used part.
5. Comparison of drugs under same category described like Mahakasaya, Ganas, Dasemani etc.
6. Validation of Shodhan of plants, particularly Toxic plants as listed in Schedule 'E' of D&C Act.
7. Validation of Shodhan and Marana of metals / minerals as applicable.
8. Study of variation as per season / time of collection / habitat of plants in terms of chemical compound / active principle / pharmacological activity.
9. Study of detoxification effects (विषघ्न प्रभाव) of some Ayurvedic drugs like Shigru, Shirish etc.
10. Variation in chemical compound / active principle / pharmacological activity in different dosage form of single drug / compound formulation.
11. Development of alternate / different dosage forms like churna instead of kwath in single drugs / compound drugs.
12. Chemical and Pharmacognostical profiling of Ayurveda plants (Chemotype / Phenotype / Genotype / Ecotype) not covered under API. *(eg. If an aromatic plant continues to produce the main constituents of the essential oil in different habitat it will be defined as chemotype "because the biosynthesis has a chemical stability", while if the aromatic plant changes its main constituents of the essential oil depending on the environmental conditions it will be considered as ecotype: "very susceptible to the environmental conditions")*
13. *In-vitro*, *in-vivo* & *in-silico* study of incompatible (Virudha) drug / food items described in Ayurveda.
14. Development of objective parameters for validation of Rasa, Guna, Virya, Vipaka, Karma etc.
15. Study on variation in chemical characterization and activity of different Ayurveda dosage forms in relation to shelf-life.
16. Critical end points study in different stages of Shodhana / Marana etc.
17. Safety / Toxicity study of classical Ayurveda formulations especially drugs of Schedule – E under Drug & Cosmetic Act.
18. Development of suitable animal models for fatty liver / diabetic neuropathy / diabetic nephropathy etc.

19. Biological activity / mechanism of action of Ayurveda single drugs / compound formulation.
20. Standard Operative Procedures (SoP), standardization, chemical analysis, safety / toxicity and biological activity of various Panchagavya products (single / compound).
21. Isolation and characterization of Marker compound for Identification & Quality Control (Q.C) of Ayurvedic drugs / formulations.
22. Comparative study of nano particles of metals / minerals in purified / incinerated form as per Ayurvedic method with nano particles of original metals / minerals prepared by modern techniques with regard to their action, bioavailability, toxicity etc.
23. Antimicrobial (Anti-bacterial / Anti-protozoal/ Antifungal / Anti-viral etc.) activity of various dosage form of Ayurveda drugs / formulations.
24. Bio-technologic intervention for increasing quality/ efficacy / shelf-life of Ayurvedic formulations.
25. Development of protocols for Tissue culture of rare / endangered / slow growing Ayurveda plants.
26. Medico-ethno-botanical survey of unexplored areas.
27. Documentation / validation of traditional practices and folk claims / folklores in relation to human & veterinary use.
28. Study of drug –drug interaction between Ay./Ay. drug ; Ay./allopathic drugs.
29. Study of Molecular target / activity of Ayurveda drugs.
30. Pharmacodynamics / Pharmacokinetics of Ayurvedic drugs.
31. Antioxidants/ Immunomodulator activity of Ayurvedic Medicines especially Classical formulations.

Clinical Research:

(in Kayachikitsa-Rog Nidan-Manas Roga / Panchakarma / Shalya-Shalakya / Stri Roga & Prasuti Tantra / Bal Roga)

32. Standardization of various procedures of Poorva-karmas, Panchakarma and Allied procedures.
33. Standardization of various para-surgical procedures including leech therapy.
34. Standardization, chemical characterization and uses of various types of Ksharasutra in anorectal and other sinuses.
35. Development of subjective and objective parameters / tools for various types of Roga & Rogi Pariksha as per Ayurvedic classics.
36. Study of Shatkriyakala in relation to some specific diseases and establishment of correlation in the clinical, pathological, bio-chemical / immunological, molecular Markers etc.
37. Validation of chikitsa-sutra and kriya-karma mentioned for management of various diseases e.g. "तमके तु विरेचनं"
38. Study on Anupana & Sahapana in relation to Bioavailablity & efficacy (Experimental / clinical).
39. Validation/comparison of efficacy of Classical medicines those described in reference texts as per first schedule of D&C Act.
40. Study of Ama in relation to causation of various diseases, change in clinical / pathological / biological / immunological profile.

41. Study of Ayurvedic interventions in the management of some Endocrine disorders like Hypothyroidism, Infertility etc.
42. Study of Ayurvedic Drugs in relation to Quality of Life , reduction of severity and burden of Allopathy medicines in critical diseases like TB, HIV/AIDS, Cancer, Dengue, D.M., Chikungunya etc.
43. Study of Ayurvedic drugs and regimens in various life style disorders / Non Communicable Diseases (NCDs).
44. Development of parameters / tools for observing pulse pattern in healthy & diseased conditions and validation/correlation of pulse descriptions in different Ayurvedic classics w.r.t. modern disease conditions
45. Study on Rasayana, Garbhinicharya, Samskar for newborn / child etc.
46. Wound healing, Ano-rectal diseases, including Shasti Upakrama of Vrana.
47. Study on Nutraceuticals (food supplements, beverages)
48. Study of Mental health
49. Study of Geriatric health.

Literary Research:

(in Ayurveda Samhita / Siddhanta / Sharir Kriya / Sharir Rachana / Swathavritta & Yoga)

50. Revival of Ayurvedic texts from rare / unpublished manuscripts with critical remarks, Hindi / English translation.
51. Exploration of Medical/Ayurveda description in Non-Ayurveda literature like Vedas, Puranas, Samhitas, Sanskrit Literature etc.
52. Health seeking behavior/pattern in different parts of the country w.r.t. acceptance of Ayurveda.
53. Reporting of Ayurvedic Medical prescriptions among practitioners of different parts of the country.
54. Validation of Pathyapathya in relation to specific disease condition.
55. Occupational diseases and Management through Ayurveda.
56. Validation of Agni / objective assessments.
57. Validation of Ojas – Biochemical / Immunological / clinical.
58. Survey on prevalence of disease in different community / geographical location in relation to diet / environment etc.
59. Study on Correlation of various physiological and pathological conditions in relation to Prakriti.
60. Study of Dincharya, Ritucharya and Sadavritta in promotion of positive health and prevention of some common illnesses due to seasonal variation.

The above-mentioned research topics/areas are for the guidance of the candidates to select the concerned topic for their Ph.D. research work.

Further, the relevant prerequisites and guidelines are to be followed for undertaking preclinical and clinical studies as per existing Research guidelines and D&C Act. For example, the requirement of clinical trial for classical drugs include the Quality compliance and SoPs as per the API format. For newly formulated combinations, the requirement would be preclinical safety studies in addition to quality assurance.