

Project Title

Global Prevalence of Pregnancy Planning and Preparedness: A Systematic Review

Supervisor: Prof Amie Steel

Co-Supervisor: n/a

Location: flexible

Project Summary

Pregnancy planning is an important determinant of preconception health behaviours and may influence maternal, birth, and child health outcomes. However, estimates of pregnancy planning prevalence vary substantially across countries, populations, and measurement approaches. This project will undertake a systematic review of the international literature to identify and synthesise evidence on the prevalence of pregnancy planning among women and couples of reproductive ages. Particular attention will be given to differences between countries, including comparisons by Organisation for Economic Co-operation and Development (OECD) classification, the presence or absence of national preconception health policies, and the use of validated measures of pregnancy planning and intention. The project will provide an up-to-date overview of global patterns in pregnancy planning and identify gaps in measurement, policy, and research. Findings will contribute to a broader program of research examining preconception health behaviours, pregnancy preparation, and opportunities to strengthen preconception care and public health policy.

Systematic review of the effectiveness and tolerability of partially hydrolysed guar gum in irritable bowel syndrome

Supervisor: Dr Chrissy Freer

Co-Supervisor: Vanessa Vigar

Location: flexible

Irritable bowel syndrome (IBS) is a common digestive condition that can cause symptoms such as abdominal pain, bloating, constipation, diarrhoea, and significantly reduce quality of life. Dietary and nutritional strategies are important to help manage these symptoms, however, evidence supporting the effectiveness of specific fibre supplements is limited. Partially hydrolysed guar gum (PHGG) is unique in that it is a water-soluble prebiotic fibre well tolerated by people with FODMAP sensitivity. PHGG has shown potential benefits for symptoms of IBS and improving overall gut health.

This project will undertake a systematic review of the clinical literature to evaluate the effectiveness and tolerability of PHGG for people with IBS. The review will identify, assess, and synthesise all available clinical studies to determine PHGG effects on symptoms such as bloating, abdominal discomfort, bowel habits, and overall quality of life, with the aim of systematically mapping the global evidence on PHGG in this condition. Students will search academic databases (e.g., Medline, Scopus, Cochrane), extract and collate data and help to prepare a manuscript for publication in a peer-reviewed journal.

The findings may help clarify the role of PHGG in IBS management, identify gaps in current evidence, and inform future research, clinical practice, and dietary recommendations for people living with IBS.

Understanding the health and wellbeing needs of children and young people who have experienced family violence

Supervisor: A/Prof Georgina Dimopoulos (Faculty of Law)
Co-Supervisor: Dr Carrie Thomson-Casey

Location: flexible

This project will explore the health and wellbeing needs of children and young people who have experienced family violence, with a focus on understanding the practices that support recovery and the factors that influence access to and engagement with those practices. Although there is increasing recognition of children and young people as victim-survivors in their own right; important gaps remain in understanding the types of supports and wellbeing strategies that are most meaningful and accessible to them.

The study will undertake four online focus groups with 20 participants aged 12 to 17 years who have experienced family violence. Participants will be recruited through relevant services across Australia, with separate groups for younger and older adolescents to ensure discussions are appropriate to developmental stage and experience. Focus group discussions will be recorded, transcribed and analysed to identify key themes relating to recovery, wellbeing, barriers to access, and supportive factors that facilitate engagement in health and wellbeing practices.

The RFSP student will contribute to participant recruitment, co-facilitation of focus groups, qualitative data analysis, and writing up of the research findings. The project will provide valuable experience in child-centred research, qualitative methodologies, trauma-informed practice and knowledge translation, while contributing evidence to inform services and supports for children and young people affected by family violence.

Can a herbal infusion enhance the activity of a conventional antimicrobial against UTI-related biofilms?

Supervisor: Dr Cathrina Geldard
Co-supervisor: A/Prof Andrea Bugarcic

Location: Gold Coast

Urinary tract infections (UTIs) are commonly associated with microorganisms that form biofilms—structured communities of microbial cells attached to a surface and enclosed within a protective matrix. Biofilm formation can reduce susceptibility to antimicrobial treatment and contribute to persistent or recurrent infection. Previous work in our laboratory found that selected herbal infusions reduced microbial viability in established biofilms.

This in-vitro study will investigate whether combining a herbal infusion with a conventional antimicrobial increases activity against established biofilms. A checkerboard assay will be used to test a range of concentrations of each treatment, alone and in combination. Antimicrobial activity will be assessed by culturing treated samples and using colony counts to determine the number of viable microorganisms remaining.

The project will determine whether the combination produces a synergistic effect—that is, greater antimicrobial activity than either treatment alone. The findings will provide preliminary evidence on whether combining a herbal infusion with a conventional antimicrobial warrants further investigation as an approach to managing UTI-related biofilms.

The potential of Citizen Science for health research— a systematic review

Supervisor: A/Prof Romy Lauche
Co-Supervisor: Dr Andrea Bugarcic

Location: flexible

Citizen science involves the active participation of members of the public in scientific research, contributing to data collection, analysis, and knowledge generation. In the field of health research, citizen science offers significant potential to enhance community engagement, improve the relevance of research questions, and support more inclusive and locally informed health solutions. This project will conduct a systematic review to investigate the role and potential of citizen science in health research. The review will examine how citizen science has been applied in health research, evaluate its methodological approaches, and assess its impact on research quality, participant empowerment, and health outcomes. The findings will inform future research design and policy by identifying best practices and highlighting opportunities to strengthen the integration of citizen science in health research.

Global Mapping of Naturopathic Research: A Bibliometric and Altmetric Analysis

Supervisor: Prof Amie Steel

Co-Supervisor: n/a

Location: flexible

This project is supported by the World Naturopathic Federation (WNF)

Naturopathy is practised in more than 100 countries and is increasingly engaged in research, education, and healthcare delivery, yet the scope, influence, and evolution of naturopathic scholarship remain poorly understood.

In partnership with the World Naturopathic Federation (WNF), this project will undertake the first comprehensive global bibliometric and Altmetric analysis of research conducted by naturopaths. Using the Dimensions database, we will identify publications authored by naturopaths and analyse research productivity, collaboration networks, institutional affiliations, funding patterns, publication trends, and citation impact over time. Altmetric data will be used to assess broader societal engagement, including attention from policymakers, healthcare organisations, news media, and the public.

The project will provide a global map of naturopathic research activity, identify influential researchers and emerging areas of scholarship, and reveal opportunities to strengthen research capacity and international collaboration. Findings will inform strategic planning by the WNF and the profession more broadly, supporting evidence-informed policy, education, and health system engagement.

Does the same herb work the same way from batch to batch?

Supervisor: Dr Cathrina Geldard

Co-supervisor: A/Prof Andrea Bugarcic

Location: Gold Coast

A study may find that a herbal tea affects microorganisms in a biofilm, but will a new batch of the same herb give the same result? Our earlier study found that infusions made from commercially sourced dried herbs changed the numbers of living microorganisms in UTI-related biofilms. Those results were obtained using particular batches of plant material. This project asks whether the effect is reproducible across different, identifiable lots of the same herb from one supplier, via a comparative in vitro laboratory study.

You will select one promising herb and prepare infusions from several lots of the same botanical species and plant part. Using an identical preparation method and biofilm model, you will compare viability: the number of microbial cells still alive and able to grow after treatment. If facilities allow, you may also compare a simple measure of the infusions' chemical composition to explore whether chemical differences accompany any differences in activity.

The study might find that the effect is consistent across lots, varies substantially, or does not replicate in the newly tested material. All three outcomes are useful. They help answer a question for herbal research: when a paper names a herb, how confident can another researcher be that a different lot will produce the same effect?

The effects of leech therapy on postherpetic neuralgia – a secondary data analysis

Supervisor: Prof Romy Lauche

Location: flexible

Postherpetic neuralgia is a common chronic condition following the shingles. It is characterised by pain and sensory misperception in the affected skin areas. The treatment of PHN is challenging, and the effects of drug therapy often limited. An intervention often used by naturopaths is leech therapy, however apart from a single case report no research has been conducted to examine the effects of leech therapy on PHN. The aim of this project is to analyse (and publish) data from an observational trial conducted in Germany. Data from 6 participants are available, and outcomes include pain ratings as well as sensory perception (quantitative sensory testing) before and after therapy.

The student will first have to manually code/recode some data and will then be able to analyse the data under close supervision. Interest and basic statistical knowledge are required. Based on the limited number of participants the results will likely be published as a case series.

Nature-derived biopesticides for invasive ants: what works, and at what cost to native species?

Supervisor: Prof Nigel Andrew (Faculty of Science)
Co-supervisor: Prof Romy Lauche

Location: flexible

Invasive ants such as the red imported fire ant threaten biodiversity, agriculture, and human health. Control efforts rely heavily on synthetic baits and insecticides, but concerns about non-target effects have increased interest in plant-derived and other natural biopesticides as potential alternatives. However, the effectiveness and safety of these products against invasive ants have not been systematically mapped.

This project will synthesise the available evidence on natural-product biopesticides used to control invasive ants. The review will address the question: which botanical or other natural biopesticides have been tested against invasive ants, how effective are they, and what non-target effects have been reported?

Using a scoping review methodology guided by PRISMA-ScR, the student will search Scopus, Web of Science and CAB Abstracts, screen eligible studies, and extract data on active compounds, target ant species, efficacy outcomes and reported non-target effects. The student will learn how to search databases, and be responsible for screening and charting the studies, and contributing to the preparation of a summary table and short report. The findings may contribute to a co-authored publication.

Preconception and Pregnancy Health Behaviours Among Indigenous Women

Supervisor: Prof Amie Steel
Co-Supervisor: n/a

Location: flexible

Health behaviours before and during pregnancy are important determinants of maternal and child health outcomes, yet relatively little is known about how these behaviours change across the transition into pregnancy among Indigenous women. This project will analyse existing survey data to examine health behaviours during the preconception and pregnancy periods, including factors such as nutrition, physical activity, smoking, alcohol use, and other health-related practices. The study will explore patterns of behaviour across these two life stages and identify factors associated with continuity or change in health behaviours before and during pregnancy. Findings will contribute to a better understanding of strengths, challenges, and opportunities for supporting preconception and pregnancy health among Indigenous women, with the aim of informing culturally responsive health promotion, policy, and service delivery. The project offers experience in quantitative data analysis, Indigenous health research, and maternal and child health epidemiology.

Evaluation on issues in standardised testing and chromatographic fingerprint profiling of medicinal herbs including adulteration, substitution, pharmacovigilance and specific chemical markers for identification.

Supervisor: Mahmudur Rahman

Location: flexible, Lismore lab visit encouraged

Medicinal herbs serve as the primary source of modern pharmaceutical lead compounds. The presence and level of lead compounds in medicinal herbs are often altered due to improper harvesting and adulteration, which is a legislative and ethical obligation under standard practices to analyse that each medicinal herb is the right species, the right plant part, and satisfies the stipulated quality specifications. This study aims to profile the bioactive therapeutic components found in widely used medicinal plants from traditional and complementary medicine, standardised testing and chromatographic fingerprint profiling and scrutinize for adulteration, substitution, pharmacovigilance and specific chemical markers for identification employing High-Performance Liquid Chromatography coupled with Mass Spectrometry (HPLC/MS). The obtained crude data would be inspected using existing databases, multidimensional structure databases, and network pharmacology. The study's outcomes may facilitate bioactivity guided identification, isolation, and identify potential marker for adulteration, substitution and pharmacovigilance in standardised testing.

How clearly do herbal clinical trials report what was tested?

Supervisor: Dr Cathrina Geldard

Location: flexible

A herbal trial may report its findings clearly while leaving a more basic question unanswered: what exactly did participants receive? In an analysis of 206 herbal randomised trials, only 45% of the assessed reporting items were reported overall, the figures however are from 2006. This project is a cross-sectional methodological review of clinical trials. You will choose a health condition with a manageable body of published clinical trials involving herbal extracts and audit how clearly the tested interventions are described. Using a checklist informed primarily by the ConPhyMP guidelines you will examine whether studies report the botanical species, plant part, source and authentication of the material; how the extract was prepared; and whether its chemical composition or marker compounds were characterised. You will also record the product, dose and treatment duration reported in each trial. The aim is to establish whether readers can identify, compare and potentially reproduce what was tested, not to assess whether the herbs were effective. This is not an effectiveness review. You might find excellent reporting, recurring omissions, changes over time, or differences between types of herbal products. Your final output will be an item-by-item analysis of reporting practices and recommendations for making future herbal trials more transparent

Relationship Between Preconception and Pregnancy Health Behaviour Change

Supervisor: Prof Amie Steel

Co-Supervisor: n/a

Location: flexible

Health behaviours often change when individuals become pregnant or begin preparing for parenthood, yet little is known about the relationship between behaviours before pregnancy and those adopted during pregnancy. This project will analyse survey data from pregnant women and their expectant partners to examine patterns of health behaviour change across the preconception and pregnancy periods. Areas of interest may include nutrition, physical activity, smoking, alcohol use, supplement use, and other lifestyle factors. The study will investigate whether health behaviours prior to pregnancy predict behaviours during pregnancy, identify factors associated with positive or negative behaviour change, or explore similarities and differences between women and men. Findings will contribute to a better understanding of when and how health behaviour change occurs around the transition to parenthood and may help inform future preconception health promotion, education, and intervention. The project offers experience in data analysis, maternal & family research, and public health epidemiology.

Meaning, Purpose, and Connectedness in Living with Chronic Illness in Young Adults: An Integrative Review

Supervisor: Dr Nas Parsian

Co-Supervisor: tbd

Location: flexible

Living with chronic illness during young adulthood can affect identity, relationships, future goals and overall wellbeing. Although meaning in life, purpose and social connectedness have been examined across different conditions and disciplines, these concepts are often considered separately. This project will undertake an integrative review to synthesise evidence on how young adults with chronic physical illness experience and understand meaning, purpose and connectedness. Guided by Whittemore and Knaf's (2005) five-stage approach—problem identification, literature search, data evaluation, data analysis and presentation—the review may include qualitative, quantitative, mixed-methods and relevant theoretical literature. CINAHL, MEDLINE/PubMed and PsycINFO will be searched using terms related to young adults, chronic illness, meaning in life, purpose in life, belonging and social connectedness. The review will identify common themes, connections among the three concepts, gaps in current evidence, and implications for psychosocial support and future research. The student will gain practical experience in database searching, article screening, data extraction and evidence synthesis, with the findings expected to support preparation of a manuscript for publication.

Medicinal Cannabis Delivery Systems: An Updated Systematic Review

Supervisor: A/Prof Janet Schloss

Medicinal cannabis can be administered through a range of delivery systems, including oral, inhaled, oromucosal and topical formulations. These delivery systems may differ in their pharmacokinetic profiles, safety and suitability for clinical use. This project will update an existing systematic review examining medicinal cannabis delivery systems. The student will conduct an updated database search, manage references in EndNote, screen studies in Covidence, extract data and assess risk of bias. The review will synthesise evidence on the delivery systems used for medicinal cannabis, their pharmacokinetic characteristics and the safety of different administration methods. The student will gain practical experience in systematic review methods and contribute to preparation of a manuscript for publication in a peer-reviewed journal.

Which herbs does generative AI suggest for urinary tract infections?

Supervisor: Dr Cathrina Geldard

Location: flexible

When someone asks generative AI about herbal options for a urinary tract infection (UTI), which herbs does it name, why does it suggest them, and what safety advice comes with the answer? Generative-AI responses can sound fluent and persuasive. This project examines whether the herbal claims and safety messages in those responses are clear, appropriately qualified and supported by the evidence cited, using a cross-sectional content analysis of generative-AI responses. You will submit a predefined set of consumer-style UTI questions to selected generative-AI tools and analyse their responses using a structured coding framework. You will catalogue the herbs named, the proposed purpose of each, the reasons given for suggesting them, and whether cited sources support the specific claims made. You will also assess advice on contraindications, interactions, uncertainty, when to seek medical assessment, and using herbs alongside rather than in place of conventional care. The project may find well-qualified advice, unsupported claims, inconsistent safety messages, or a mixture of these. Its final output will be a reproducible account of the herbs and claims appearing in AI-generated UTI advice, with a focused analysis of how benefits, limitations and risks are communicated.

The Use of Preventive Health Products and Practices Among Migrant Populations: A Systematic Review

Supervisor: Dr Peter James

Location: flexible

Migrant populations often face socio-economic, linguistic, cultural and structural barriers that affect their engagement with preventive healthcare. As a result, uptake of preventive measures such as immunisations, screening programs, dietary supplements, routine health checks and traditional wellness practices is often lower than in host populations. This systematic review will synthesise international evidence on the use, determinants and outcomes of preventive health products and practices among migrants. It will identify commonly used preventive health behaviours, examine barriers and facilitators to uptake across different migration contexts, and explore the influence of factors such as health literacy, documentation status and cultural beliefs. Following PRISMA guidelines, the review will include a systematic search of major databases and appraisal of quantitative, qualitative and mixed-methods studies published within the last decade. Findings will be synthesised narratively, with subgroup analyses undertaken where appropriate. The review will provide a comprehensive overview of preventive health practices among migrants and inform culturally responsive interventions, policies and strategies aimed at reducing health inequities and improving access to preventive care.

The Effects of Dietary Interventions in Adults with Fatigue: A Systematic Review

Supervisor: Dr Joanne Bradbury

Location: flexible

About 1 in 5 adults experiences persistent or chronic fatigue symptoms. Fatigue features in conditions such as burnout, Long COVID and Chronic Fatigue Syndrome (CFS/ME). It accompanies many chronic conditions and sometimes it has no known cause. We want to find out whether what people eat is linked to fatigue. Our systematic review (and meta-analysis where possible) will cover studies from the past five years in adults with fatigue. It includes three kinds of dietary interventions: overall *dietary patterns* (such as Mediterranean or plant-based diets), *when* people eat (such as fasting and time-restricted eating), and *how* people eat (such as mindful eating). As a summer scholar you will help extract key details from published studies into a structured spreadsheet, help check study quality using established appraisal tools, and flag studies where cooking or food preparation was part of the intervention. This will feed into a wider culinary medicine research program.
