

APPLICATION FOR ETHICAL APPROVAL

In order for research to result in benefit and minimise risk of harm, it must be conducted ethically.

The University follows the OECD Frascati manual definition of **research activity**: “creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications”. As such this covers activities undertaken by members of staff, postgraduate research students, and both taught postgraduate and undergraduate students working on dissertations/projects.

The individual undertaking the research activity is known as the “principal researcher”.

This form must be completed and approved prior to undertaking any research activity.

SECTION A: About You (Principal Researcher)

1	Full Name:	Pokal Mitesh Bharatbhai
2	Student Number:	2528089
3	Email address:	2528089@student.uwtsd.ac.uk
4	Programme of Study:	Msc public health and social care in practice
5	Supervisor:	Ping wu

SECTION B: Internal and External Ethical Guidance Materials

Please list the core ethical guidance documents that have been referred to during the completion of this form (including any discipline-specific codes of research ethics, location-specific codes of research ethics, and also any specific ethical guidance relating to the proposed methodology).

Please tick to confirm that your research proposal adheres to these codes and guidelines. You may add rows to this table if needed.

1	<u>UWTSd Research Ethics & Integrity Code of Practice</u>	☒
2	UWTSd Research Data Management Policy	☒
3		☐
4		☐

SECTION C: Details of Research Activity

1	Indicative title: The Effectiveness of Personalised Nutrition in Managing Metabolic Syndrome Among Adults in the UK: A Systematic Review		
2	Proposed start date: 28 September 2026	Proposed end date: 31 January 2027	
Introduction to the Research (maximum 300 words in each section) Ensure that you write for a <u>Non-Specialist Audience</u> when outlining your response to the three points below: • Purpose of Research Activity • Proposed Research Question • Aims of Research Activity • Objectives of Research Activity Demonstrate, briefly, how Existing Research has informed the proposed activity and explain • What the research activity will add to the body of knowledge • How it addresses an area of importance.			
Purpose of Research Activity Metabolic syndrome is a major public health concern because it increases the risk of cardiovascular disease, type 2 diabetes, and premature mortality. The condition is associated with several health risk factors, including obesity, high blood pressure, elevated blood glucose levels, and abnormal lipid profiles. As the prevalence of metabolic syndrome continues to			

	increase, healthcare professionals are seeking more effective approaches to support disease management and prevention. Personalised nutrition has emerged as a potential alternative to traditional dietary approaches. Unlike general dietary recommendations, personalised nutrition provides tailored dietary advice based on an individual's health status, lifestyle, genetic factors, and clinical characteristics. Previous studies suggest that personalised nutrition may improve dietary behaviours, weight management, and metabolic health outcomes. However, findings remain inconsistent across studies, and there is limited agreement regarding its overall effectiveness. The purpose of this research is to systematically review and synthesise existing published evidence on the effectiveness of personalised nutrition interventions in managing metabolic syndrome among adults. The review will evaluate the impact of personalised nutrition on metabolic health markers, compare it with standard dietary advice, and examine its influence on patient adherence and engagement. The study will also explore implementation challenges and sustainability within healthcare settings. This research is important because it may provide a clearer understanding of the benefits and limitations of personalised nutrition. The findings may support healthcare professionals, policymakers, and researchers when developing future nutrition strategies and interventions for metabolic syndrome management.
4	Research Question How effective are personalised nutrition interventions in managing metabolic syndrome among adults in the United Kingdom?
5	Aims of Research Activity To systematically review and synthesise existing evidence on the effectiveness of personalised nutrition interventions in managing metabolic syndrome among adults in the United Kingdom.
6	Objectives of Research Activity • To evaluate the impact of personalised nutrition interventions on metabolic syndrome markers, including blood pressure, blood glucose, lipid profile, and body weight among adults. • To compare personalised nutrition interventions with standard dietary advice in the management of metabolic syndrome. • To examine whether personalised nutrition improves patient adherence, motivation, and engagement compared with conventional dietary approaches. • To explore the sustainability, practicality, and implementation challenges of personalised nutrition within healthcare settings.
	Proposed data collection methods (maximum 600 words) Provide a brief summary of all the methods that may be used in the research activity to collect data, making it clear what specific techniques may be used. If methods other than those listed in this section are deemed appropriate later, additional ethical approval for those methods will be needed. You do not need to justify the methods here but should instead describe how you intend to collect the data necessary for you to complete your project.
	This study will adopt a systematic review research design. No primary data will be collected. Data will be obtained from published peer-reviewed journal articles identified through a structured search process. The review will use the PICO framework to guide the development of the research question. The population will be adults with metabolic syndrome, the intervention will be personalised nutrition, the comparison will be standard dietary advice or conventional nutrition approaches, and the outcomes will include metabolic syndrome markers, patient adherence, motivation, and engagement. A comprehensive literature search will be conducted using electronic databases including PubMed, Scopus, Web of Science, CINAHL, and ScienceDirect. These databases were selected because they provide access to high-quality healthcare and nutrition research. The search strategy will use keywords such as: • Personalised nutrition • Precision nutrition • Metabolic syndrome • Dietary intervention • Nutrition intervention • Weight management • Blood glucose • Patient adherence Boolean operators such as AND and OR will be used to combine search terms. Inclusion criteria will include peer-reviewed articles published between 2015 and 2026, studies involving adults aged 18 years and above, studies focused on personalised nutrition interventions, and articles published in English and studies must be relevant to adults in the UK. Exclusion criteria will include animal studies, studies involving children, conference papers, editorials, opinion articles, and studies not related to personalised nutrition.

The screening process will follow the PRISMA 2020 guidelines. Titles and abstracts will first be reviewed, followed by full-text assessment against the inclusion and exclusion criteria.

Number of studies:

The final number of included studies will be determined by the systematic literature search, PRISMA-guided screening process and predefined inclusion and exclusion criteria.

Study screening and selection:

The obtained records will be uploaded to the reference management software, where duplicate records will be recognised and eliminated first. Thereafter, the titles and abstracts of the papers will be screened based on the predefined inclusion and exclusion criteria. The overall selection process of relevant studies will be presented through the PRISMA flow diagram that will consist of a number of records identified, duplicates eliminated, records screened, and finally selected articles (Haddaway et al., 2022). This will ensure a transparent process about how selection of articles is done for this review.

Quality appraisal and risk of bias:

The methodological quality of the selected studies will be critically accessed using the appropriate validated appraisal tools based on the study design. For example, randomised controlled trials could be evaluated through the Cochrane Risk of Bias tool and the mixed-methods study using the Mixed Method Appraisal Tool (MMAT) (Oliveira et al., 2021). The appraisal will consider methodological limitations such as selection bias, incomplete reporting, outcome measurement, and other potential sources of bias.

Data extraction and synthesis:

A standard data extraction form will be created to ensure the consistent collection of information from different studies. The extracted information consists of the author, publication year, research design, sample size, characteristics of participants, methodological limitations and key findings, and intervention duration. In addition, at the time of reporting, information like engagement, motivation, implementation challenges, adherence will also be extracted.

On the other hand, the narrative and thematic approach of synthesis will be used for this research. This synthesis will be created based on the research objectives. Firstly, information like blood glucose, lipid profile, blood pressure, and body weight will be compared. Secondly, the comparison of personalised nutrition will occur from the comparative evidence. Thirdly, evidence related to engagement and motivation will be synthesised. Lastly, sustainability and the implementation challenges in the UK healthcare setting will be evaluated.

Ethical consideration

This research is based on secondary research where no primary data will be collected from human participants. To maintain ethics, this study will reference every source used for different information. The usage of references and citations will help to maintain academic integrity and avoid plagiarism. Also, the researcher will maintain honesty and transparency when using different information for this research from different sources, which is one of the most important ethics in secondary research (Dougherty, 2021). Additionally, this review will represent both the positive and negative aspects that will ensure high reliability and credibility of the research. Formal UWTSD ethical approval will be obtained before the systematic review begins.

SECTION D: Scope of Research Activity

Will the research activity include:	YES	NO
1 Use of a questionnaire or similar research instrument?	☐	☒
2 Use of interviews?	☐	☒
3 Use of focus groups?	☐	☒
4 Use of participant diaries?	☐	☒
5 Use of video or audio recording?	☐	☒
6 Use of computer-generated log files?	☐	☒
7 Participant observation with their knowledge?	☐	☒
8 Participant observation without their knowledge?	☐	☒
9 Access to personal or confidential information without the participants' specific consent?	☐	☒
10 Administration of any questions, test stimuli, presentation that may be experienced as physically, mentally or emotionally harmful / offensive?	☐	☒
11 Performance of any acts which may cause embarrassment or affect self-esteem?	☐	☒
12 Investigation of participants involved in illegal activities?	☐	☒
13 Use of procedures that involve deception?	☐	☒

- 14 Administration of any substance, agent or placebo? ☐ ☒
- 15 Working with live vertebrate animals? ☐ ☒
- 16 Procedures that may have a negative impact on the environment? ☐ ☒
- 17 Other primary data collection methods. Please indicate the type of data collection method(s) below. ☐ ☒
- Details of any other primary data collection method:

If you have ticked NO to every question then the research activity is (ethically) low risk and you may skip section E and continue to section F.

If YES to any question, then no research activity should be undertaken until full ethical approval has been obtained.

SECTION E: Intended Participants

Who are the intended participants:

- | | YES | NO |
|--|--------------------------|--------------------------|
| 1 Students or staff at the University? | ☐ | ☐ |
| 2 Adults (over the age of 18 and competent to give consent)? | ☐ | ☐ |
| 3 Vulnerable adults? | ☐ | ☐ |
| 4 Children and Young People under the age of 18? (Consent from Parent, Carer or Guardian will be required) | ☐ | ☐ |
| 5 Prisoners? | ☐ | ☐ |
| 6 Young offenders? | ☐ | ☐ |
| 7 Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper? | ☐ | ☐ |
| 8 People engaged in illegal activities? | ☐ | ☐ |
| 9 Others. Please indicate the participants below, and specifically any group who may be unable to give consent. | ☐ | ☐ |

Details of any other participant groups:

Participant numbers and source

Provide an estimate of the expected number of participants. How will you identify participants and how will they be recruited?

10	How many participants are expected?	
11	Who will the participants be?	
12	How will you identify the participants?	

Information for participants:

- | | YES | NO | N/A |
|--|--------------------------|--------------------------|--------------------------|
| 13 Will you describe the main research procedures to participants in advance, so that they are informed about what to expect? | ☐ | ☐ | ☐ |
| 14 Will you tell participants that their participation is voluntary? | ☐ | ☐ | ☐ |
| 15 Will you obtain written consent for participation? | ☐ | ☐ | ☐ |
| 16 Will you explain to participants that refusal to participate in the research will not affect their treatment or education (if relevant)? | ☐ | ☐ | ☐ |
| 17 If the research is observational, will you ask participants for their consent to being observed? | ☐ | ☐ | ☐ |
| 18 Will you tell participants that they may withdraw from the research at any time and for any reason? | ☐ | ☐ | ☐ |
| 19 With questionnaires, will you give participants the option of omitting questions they do not want to answer? | ☐ | ☐ | ☐ |
| 20 Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs? | ☐ | ☐ | ☐ |
| 21 Will you debrief participants at the end of their participation, in a way appropriate to the type of research undertaken? | ☐ | ☐ | ☐ |

22 If NO to any of above questions, please give an explanation

Information for participants:

YES NO N/A

- 24 Will participants be paid? ☐ ☐ ☐
- 25 Is specialist electrical or other equipment to be used with participants? ☐ ☐ ☐
- 26 Are there any financial or other interests to the investigator or University arising from this study? ☐ ☐ ☐
- 27 Will the research activity involve deliberately misleading participants in any way, or the partial or full concealment of the specific study aims? ☐ ☐ ☐
- 28 If YES to any question, please provide full details

SECTION F: Anticipated Risks

☐ Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them.	
Risks to participants	
1 For example: sector-specific health & safety, emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information. If you have identified in section D that there are no participants, then enter N/A and go skip to question 3.	
Risk to participants: NA	How you will mitigate the risk to participants: NA
2 If research activity may include sensitive, embarrassing or upsetting topics (e.g. sexual activity, drug use) or issues likely to disclose information requiring further action (e.g. criminal activity), give details of the procedures to deal with these issues, including any support/advice (e.g. helpline numbers) to be offered to participants. Note that where applicable, consent procedures should make it clear that if something potentially or actually illegal is discovered in the course of a project, it may need to be disclosed to the proper authorities	
NA	
Risks to the investigator	
3 For example: personal health & safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest	
Risk to the investigator: The main risk to the researcher is potential stress associated with conducting literature searches, screening studies, and meeting project deadlines.	How you will mitigate the risk to the investigator: • Effective time management. • Regular meetings with the supervisor. • Maintaining a realistic project schedule. • Accessing university wellbeing support if required.
University/institutional risks	
4 For example: adverse publicity, financial loss, data protection	
Risk to the University: There is a potential risk of inaccurate reporting, plagiarism, or misuse of published data which could affect the University's academic reputation.	How you will mitigate the risk to the University: • Following university research ethics guidelines. • Using accurate referencing. • Maintaining academic integrity. • Reporting findings honestly and transparently.
Environmental risks	
5 For example: accidental spillage of pollutants, damage to local ecosystems	
Risk to the environment: Minimal environmental impact may result from the use of electricity and electronic devices during the review process.	How you will mitigate the risk to environment: • Use digital documents where possible. • Minimise unnecessary printing. • Store documents electronically.

SECTION G: Feedback, Consent and Confidentiality

If you have identified in section D that there are no participants, then enter skip this section and continue to section H.

1	Feedback
	What de-briefing and feedback will be provided to participants, how will this be done and when?
2	Informed consent
	Describe the arrangements to inform potential participants, before providing consent, of what is

	involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.
3	Confidentiality / Anonymity Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.

SECTION H: Data Protection and Storage

	Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 "GDPR" and the Data Protection Act 2018 "DPA")?	YES	NO
1	"Personal data" means any information relating to an identified or identifiable natural person ('data subject'). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person. Any video or audio recordings of participants is considered to be personal data.	☐	☒
	If YES, provide a description of the data and explain why this data needs to be collected:		
2			
	Does it involve special category data (as defined by the GDPR)?	YES	NO
3	"Special category data" means sensitive personal data consisting of information as to the data subjects' – (a) racial or ethnic origin, (b) political opinions, (c) religious beliefs or other beliefs of a similar nature, (d) membership of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992), (e) physical or mental health or condition, (f) sexual life, (g) genetics, (h) biometric data (as used for ID purposes).	☐	☒
	If YES, provide a description of the special category data and explain why this data needs to be collected:		
4			

	Will data from the research activity (collected data, drafts of the thesis, or materials for publication) be stored in any of the following ways?	YES	NO
5	Manual files (i.e. in paper form)?	☐	☒
6	University computers?	☒	☐
7	Private company computers?	☐	☒
8	Home or other personal computers?	☒	☐
9	Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	☒	☐
10	"Cloud" storage or websites?	☒	☐
11	Other – specify:	☐	☒

For all stored data, explain the measures in place to ensure the security of the data collected, data confidentiality, including details of backup procedures, password protection, encryption, anonymisation and pseudonymisation:

All research materials, downloaded journal articles, screening records, extraction tables, and dissertation drafts will be stored on a password-protected personal computer and secure University Office 365 cloud storage. Access will be restricted to the researcher and supervisor. Files will be backed up regularly, and all documents will be handled in accordance with the University Research Data Management Policy.

Data Protection

Will the research activity involve any of the following activities: YES NO

- 13 Electronic transfer of data in any form? ☒ ☐
- 14 Sharing of data with others at the University outside of the immediate research team? ☐ ☒
- 15 Sharing of data with other organisations? ☐ ☒
- 16 Export of data outside the UK or importing of data from outside the UK? ☐ ☒
- 17 Use of personal addresses, postcodes, faxes, emails or telephone numbers? ☐ ☒
- 18 Publication of data that might allow identification of individuals? ☐ ☒

19 If YES to any question, please provide full details, explaining how this will be conducted in accordance with the GDPR and Data Protection Act (2018) (and/or any international equivalent):

No participant-identifiable personal data will be collected or processed. Electronic research materials will be stored securely using University-approved password-protected storage. Access will be restricted to authorised members of the research team. Published studies will be appropriately referenced, and extracted information will be used only for the purposes of the systematic review. No names, addresses, telephone numbers or other direct identifiers of research participants will be collected.

Research materials will be retained until completion of the project and subsequently deleted in accordance with University data-management requirements.

20 List all who will have access to the data generated by the research activity:

Principal Researcher and Academic Supervisor

21 List who will have control of, and act as custodian(s) for, data generated by the research activity:

Principal Researcher.

22 Give details of data storage arrangements, including security measures in place to protect the data, where data will be stored, how long for, and in what form.

All research documents will be stored securely on password-protected devices and University Office 365 cloud storage. Data will be retained until the completion and assessment of the project in accordance with University requirements and then managed according to University data retention policies.

22 Confirm that you have read the UWTSD guidance on data management (see <https://www.uwtss.ac.uk/library/research-data-management/>) ☒

23 Confirm that you are aware that you need to keep all data until after your research has completed or the end of your funding ☒

SECTION I: Use of AI tools

Use of generative AI and other AI-based tools

There are a number of ethical issues relating to the use of generative AI and other AI-based tools, including data security, output bias, and output errors. In general you should assume that any generative AI or other AI-based tool that you pay to use is more secure and accurate than one which is free to use.

YES NO N/A

Will the research use AI tools to do any of the following:

- | | | | |
|---|-------------------------------------|-------------------------------------|--------------------------|
| 1 Capture data? | ☐ | ☒ | ☐ |
| 2 Generate and/or edit text? | ☒ | ☐ | ☐ |
| 3 Generate graphics? | ☐ | ☒ | ☐ |
| 4 Generate video? | ☐ | ☒ | ☐ |
| 5 Generate sound/music? | ☐ | ☒ | ☐ |
| 6 Generate code? | ☐ | ☒ | ☐ |
| 7 Generate synthetic data? | ☐ | ☒ | ☐ |
| 8 Analyse data? | ☐ | ☒ | ☐ |
| 9 Analyse personal or sensitive data? | ☐ | ☒ | ☐ |
| 10 Classify data? | ☐ | ☒ | ☐ |
| 11 Do you intend to use the free version of any AI tools? | ☒ | ☐ | ☐ |

If you have answered **YES** to any of questions O1-O11, please provide justification detailing why this is necessary for the research.

AI tools may be used only for limited language-support purposes, such as proofreading, grammar

checking and improving clarity of the researcher's own writing. AI will not be used to collect research data, generate synthetic research evidence, analyse sensitive or personal data, determine study eligibility, perform critical appraisal or replace the researcher's academic judgement. The researcher will remain responsible for checking the accuracy, originality and appropriateness of all work.

SECTION J: Declaration

The information which I have provided is correct and complete to the best of my knowledge. I have attempted to identify any risks and issues related to the research activity and acknowledge my obligations and the rights of the participants. In submitting this application I hereby confirm that I undertake to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice which is published on the website: https://www.uwtsd.ac.uk/research/research-ethics/			
1	Signature of applicant:	Pokal Mitesh Bharatbhai	Date: 17/08/26
2	Supervisor:	Ping Wu	Date: 17/08/26
3	Signature:	Ping Wu	

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UNDERGRADUATE AND TAUGHT POSTGRADUATE COURSES ONLY