

## ORIGINAL RESEARCH

# Diet effect on Cardiac Vascular Diseases

## A qualitative study on the effects of diet modification in the United Kingdom

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**Keywords:** Diet modification, cardiovascular diseases, Indian origin, religious belief.

## ABSTRACT

**Aim:** To determine the experiences of Indian origin having minimize cardiac vascular diseases with diet modification.

### Summary of method:

These studies explore and understand the lived experience of the persons with CVD throughout their lives and determine specific positive aspects that act as catalyst for their positive living during the illness. This research will be a valuable addition in explaining how and why elements are recurring and provide answers about experiences, perceptions and perspectives of CVD patients.

Semi structured in depth interviews were carried out. The interview questions were asked in a way to enable patients to answer questions in their own words, which will help to understand their views. The interview session includes open ended questions to include the respondent's own perspectives and experiences in their own words. This study includes the personal views and perceptions of the cardiovascular patients that may have not been previously considered, and it will add importance to understanding of the study focus.

### Result:

The result showed how these 10 participants have lived with CVD. Living with CVD starts with being diagnosed, then accepting the condition and wanting to find more information about the condition. It moves on to learning, adjusting and committing to diet modifications. The issues pertaining to healthcare setting for Indian ethnic group was viewed and the participants expressed themselves such as despite the efforts and advancement by the government, there are still people belonging to indigenous background have limitations to cope and comprehend the benefits of Government's intervention efforts for nutritional intervention programs according to Indian culture. More concerning factors were the facts where CVD patients were ignorant about the health promotions and intervention aspects. Majority of the respondents complained the NHS center was too far away from their residents and have faced difficulties in getting an appointment. The more concerning part was very revealing that the doctors and GPS have difficulty to educate the patients about their health issue and treatment care because of language misunderstanding

### Conclusion:

In conclusion, the better intervention process it becomes essential to understand one's ethnic background, religious beliefs and diet patters in terms of CVD.

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**What do we already know about this topic?**

Diet plays important role for our healthy body, If we follow healthy diet, we can keep ourselves from diseases. However, we are ignoring this fact and consuming unhealthy food for certain reasons which lead to various health conditions.

**What is the main contribution to evidence-based practice from this research?**

A) For future in depth study responses of the same participants should be recorded along with new participants. This would provide more accurate data validating the data collected for this study. It would also assist in comparing the status of healthcare system advancement or decline in the process. Inclusion of more participants would provide more data coverage with more frequency of responses. In depth study of this study would highlight the areas which have been overlooked in previously.

B) The lived experience of participants of varied background and ethnicity through their inclusion into future study would give more knowledge of their respective cultures, values and dietary patterns. This would help aligning new diet plans and course for balanced diet regime. Information gathered in such way would assist in assessing the UK healthcare system internationally as well.

**What are the implications towards theory, practice or policy?**

There is a need for patient education about cardiac vascular diseases and its management. The Government should focus on initial phase of cardiac problems by identify the risk factors along with medicine and concentrate on nutritional intervention program according to different ethnicity.

Through this study the limitations and implications were identified. These will enable to include such steps in intervention plan that would be patient centric and empathetic intervention plans could be devised. Availing interpreters at NHS center or appointing multilingual individual or health practitioners are just mere examples. The knowledge gained from this study will help the researcher develop more effective strategies and policies for cardiovascular patients and its control with context to their personal perceptions, experiences and diet. Understanding a life-threatening medical condition from patient's own lived experiences and their perceptions, beliefs and even their acceptance and denials in following the process enlightens the prevention process of CVD for future perspectives.

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**Author's Contribution statement:** Madhuri Vaghela conceptualized and drafted the research study.

**INTRODUCTION:**

Diet is considered a chief catalyst in the etiology of Cardiac vascular disease. (Buttar, Timao Li, & Ravi, 2005). Though, it is not definite that diet and its components are directly related to CVD risk causation. (Enas A.Enas and Sudesh Kanan, 2005). This leads to questions of what causes the diet related risks. However, in a study on "Nutrient profiling and adherence to components of the UK national dietary guidelines association with metabolic risk factors for CVD and diabetes: Airwave Health Monitoring Study"; diet is considered as a key modifiable component in the development of CVD. (Eriksen, et al., 2018). CVD is a general conception involving circulatory system of human body. CVD development is depending on causation factors and certain conditions. These causation factors also aid in the severity of the present CVD conditions. Living healthy and active life is the only

simple and straight forward prevention that can prevent. (NHS, 2019). Indians have three to four times higher risk ratio of developing CAD than white American, six times greater than Chinese, and twenty times superior to Japanese. (Ghaffar, Reddy, & Singi, 2004). There are many studies that have been carried out on CVD and their lived experiences in relation to diet. In this research an effort was made to assess and review the same concept with an analytical approach. One of such a study was carried out in 2014 on cardiovascular disease risk factors in Asian Indian population. Asian Immigrants have high mortality and morbidity rate in England and Wales. In the same study is was also included that People belonging to Punjab region of Indian origin living in West London consist of high hazard factor than their relatives residing in their home country of India. (Nag & Ghosh, 2014). Risk factors for CVD are classified as:

- Non-modifiable: Not amenable to intervention
- Modifiable: amenable to intervention – lifestyle, behaviors, clinical risk factors

Non-Modifiable Risk Factors	Modifiable Risk Factors
Age	Hypercholesterolemia
Gender	Hypertension
Ethnicity	Diabetes
Deprivation	Overweight/obesity
Socio economic disadvantage	Psychosocial stress
Family history	Hypo-cholesterolemia
	Excess alcohol use
	Diet

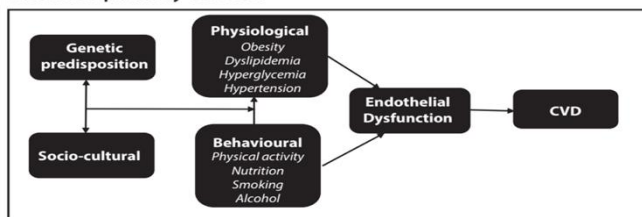
(American heart association and American college of cardiology function, 2014)

Here, Diet is the main concentration for this study as it directly affects the CVD health. An unhealthy eating habits can cause major issues for existing CVD conditions increasing its severity. It is modifiable but solely depends on the individual's perception and circumstances to adhere.

**Causation Pathway for CVD:**

The CVD is caused by several factors, but the causation has a systematic and defined pathway. The progression of the CVD starts from the very being of the human body which can be either genetic or which may have been altered by social or cultural influences leading to psychological or behavioral factors. That results into Endothelial Dysfunction resulting into CVD.

Causation pathway for CVD.



Causation pathway for CVD. Adapted from Stoner et al. 2014 (2)

**Theoretical Framework (or Model) and Theory**

The healthy lifestyle and preventing disease is being supported by theoretical models and theories by means of interpretation, explanation, understanding and behavioral predictions of health and developmental interventions. (RHlhub, 2019). Understanding CVD from a biological, psychological, and social perspectives, is essential for CVD management and prevention.

Harmonious interconnectivity of application and practices of Health Promotions and Disease Prevention Theories lead to successful CVD prevention. The cycle of CVD treatment incorporates initial detection, therapy, Follow up and Case Management. the nature and usage of the theories of CVD help to understand the disease for a better outcome and prevention.

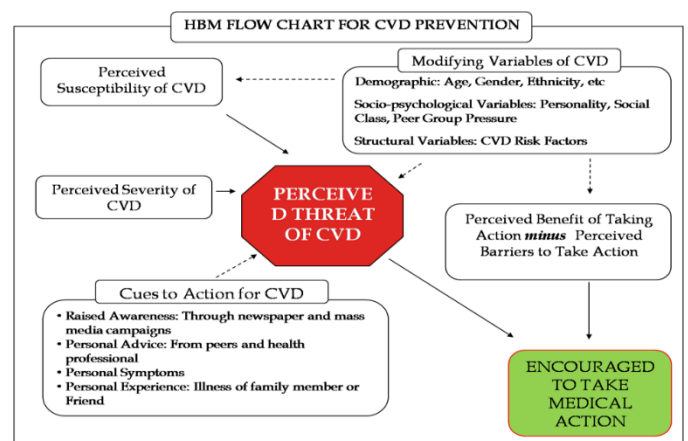
It is crucial to know the hazardous compartments of the target population for the CVD stimulation and therapy. Following theories and models are considered are essential for CVD health promotion and intervention:

- Health belief model
- Social Cognitive Theory

**Health Belief Model for CVD:**

Health Belief model being an explanatory model provides support in understanding a person's conduct, insights, beliefs, opinions, concepts, views and principles about the health and illness. HBM emphasizes on the individual's belief and perception towards CVD. The individual will act only on following four concepts in prevention and cure process of CVD:

- If the person, consider himself vulnerable to the CVD condition
- If the person considers CVD circumstances hypothetically severe and life endangering
- If the person imagine that a path of action can lessen or reduce the vulnerability and significance of CVD threat
- If the person, consider that the value of the therapy will be greater than the gains in the end. (Roy, 2016).

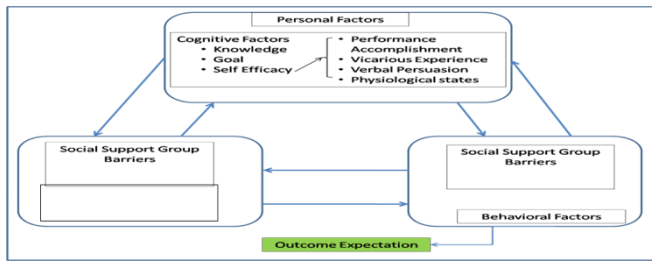


**Social Cognitive Theory**

It was drawn from Social Learning Theory by Albert Bandura in 1960s, focused on education by studying others along with behavioral doctrines of strengthening and penalties. But later, rational considerations of belief,



expectations and self-perceptions were included into concentration; hence it was described as a Social Cognitive theory. (McLeod, 2016)



Social cognitive theory chart

For CVD prevention this theory can be very helpful for a small target group where the individual being a model himself can also learn from observation or experiencing the consequences of our actions from a controlled environment and positive approach behavior change can be optimized. The personal factors for SCT regarding CVD are cognitive in nature and consist of Knowledge of CVD determinants, Goals to prevent CVD effects and Self efficacy by means of individual's ability and willingness to succeed in preventing CVD. But this theory can only be utilized for follow up of the CVD patients with existing heart conditions

## METHODOLOGY:

This study accepted a qualitative research approach. Qualitative research goals to gather an in-depth understanding of human behavior and the reasons that govern such behavior. The qualitative method investigates the why and how of decision making, not just what, where, when. Hence, smaller but focused samples are more often used. (Loyola Marrymount University, 2020). It provides answers to questions such as what dignity and respect means to people, why did they use that service and not another and what might work better for our users. A qualitative study is used to get an understanding of underlying reasons, opinions and motivations, explaining why people feel and think the way they do. (NHS England, 2017). This qualitative study was conducted in 2014 at Tabriz University of Medical Sciences, Iran. The rationale for choosing the method of qualitative studies was because of the capability of these studies in accessing the experiences and the unknown knowledge within the participants and their ability to pull them out. (NCBI, 2015).

### Study design:

This study used interpretative phenomenological analysis as its research design. IPA is concerned with the detailed

examination of human lived experience. And it aims to conduct this examination in a way which as far as possible enables that experience to be expressed in its own terms, rather than according to predefined category systems. This is what makes IPA (Interpretative Phenomenological Analysis) phenomenological and connect it to the core ideas unifying the phenomenological study. (Australian International Academic Centre, 2017). IPA aims to provide insight into how individuals understand and identify certain situation and that situation or event usually relevant to experience of personal event or initiative of situation. (SMITH, 2009). IPA was used because it suits the research topic as it aims to the experience of a sample of a people of Indian origin with CVD on diet modification.

## Area of Study

This study was carried out in Sunderland in UK. Sunderland is a city located in the Northeast England. Sunderland is surrounded by South Tyne side to the North, Gates head to the Northwest, County Durham to the West and South. Sunderland is seen to be the second biggest local authority in Tyne and Wear, having about 137 kilometers square. Approximately over 277,962 people are recorded to reside in Sunderland. They are about 10.57% of the total Northeast population. (Sunderland city council, 2019). This study was conducted in gurudwara and Indian market store and church using British Indian adult group in the Sunderland is in the Northeast of England. The reason why the study was conducted in Sunderland is because adult group mostly visited to gurudwara and Indian market store and church.

Inclusion Criteria-

- Must be over 45 years old and above
- must be resident of UK
- having problems of cardiac vascular diseases
- Accept to participate and sign the consent form
- must be a male

Exclusion Criteria-

- Indian adult group but not resident of India
- Indian adult group but not resident of India
- did not accept to participate or sign the consent form
- Not female

## Recruitment of participants/sampling:

This research used purposive sampling in recruiting participants. The purposive sampling technique, also called judgment sampling, is the deliberate choice of an informant due to the qualities the informant possesses. It is a nonrandom technique that does not need underlying theories or a set number of informants. Simply put, the

researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by virtue of knowledge or experiences. (Bernard, 2002).

This method of sampling suits this research because participant who have been diagnosed with CVD, age 40 or above of Indian origin living in UK were selected.

Participant information leaflet was shared among Indian adult group in the local community. This leaflet gave a summary about the study and stated the criteria for the willing participants. It also had the contact of the researcher so that willing participants can contact. The interview was audio-taped using a recorder. At the time of the interview, the information leaflet was given to the participants again. A formal written consent was obtained where the participants signed before the commencement of the interview. All the participants agreed to a recording of the interview. Each interview lasted approximately 15 to 20 minutes. It was strictly voluntary. Participants were not compelled to participate, and it was explained to the participants that they would remain anonymous throughout the study and no rewards were given. Eleven Participants were recruited. Three were south Indian and 8 were north Indian.

#### **Data Collection:**

The data was collected using face to face Individual Interviews through open-ended questions for between 15 to 20 minutes. These questions were focused on the research questions based on participant's responses. Hence no fixed set of questionnaire pattern was used. The interview or rather the data collection was emphasizing on sharing views, perceptions, belief regarding diet and diet changes, family-social background, and implications for cardiovascular diseases. A tape recorder was used to get all the information from each of the participants and notes were also taken where needed. Prompts and probes were used when necessary.

#### **Data Analysis:**

The data recorded was later listened to and transcribed verbatim manually. The analysis was done with the use of inductive deductive methods of thematic analysis which makes the whole process fit to extract information and analyses them, the technique of thematic analysis identifies, groups and reports the themes in the data collected. This is done by systematic interpretation of the different parts of the data. The next step after manual transcribing was coding, conceptualization, classifying and identifying themes.

These themes are further connected and finally interpretation, explanation and provision of meaning following wider literature. Braun and Clarke (2006) put the thematic data analysis under six steps which included becoming familiar with the data, generation of initial codes, searching for themes, review of themes, definition of themes and write-up. This thematic analysis will allow rich and detailed explanation of data as it is not tied to any particular theoretical perspective. Perspective (Moria and Brid, 2017). The interpretation of the participants experience is necessary in thematic analysis because a well conducts qualitative study is expected to be reliable in the interpretation of data collected. This implies that thematic analysis is good enough to acknowledge anything that will sway experience of the participants.

#### **Ethical Approval:**

An outline (proposal) for this research was drafted and the ethics form filled with the aid of the supervisor. A letter of approval was received from Public Health Department, University of Sunderland Ethics Committee.

The University of Sunderland Ethical Committee is the consent approval authority for this research study. Research ethics aim to protect the rights of participants and ensure that they are not exposed to harm and that the methodology is appropriate for the study aim (M C Kenna and Gary 2018). The process of ethical review is also carried out to ensure that participants can be confident, and rest assured that possible risk has been considered, reduced to the lowest possibility and is acceptable (Gelling 2015).

An information letter and consent form was given to participants. These letters informed the participants fully about the study, stating that it was voluntary and that they would remain anonymous throughout the study and had every right to withdraw from the study at any time. The letter also stated that the interview was going to be audio-recorded and it was going to be destroyed after the study. If they agreed to it, they signed at the bottom part of the form. Participant's anonymity, confidentiality, privacy and safety were strictly maintained. In maintaining that, all interviews were done in a confidential location that was comfortable for the participant, no real names were given. All recorded data was kept in a password protected safe that was only accessible by the researcher. No videos or pictures whatsoever and the recorded interviews were destroyed after completion of the research.



**RESULT:**

This research aimed towards reveal the lived experiences of the Indian Origin CVD patients and the results revealed some known factors that includes dietary challenges due to demography and weather along with some overlooked factors like food prohibitions and diversity of the food selection. This study also revealed the stereotyping of ethnic background in their kind of diet consumption increasing the severity of CVD conditions.

The result showed how these 10 participants have lived with CVD. Living with CVD starts with being diagnosed, then accepting the condition and wanting to find more information about the condition. It moves on to learning, adjusting and committing to diet modifications. The issues pertaining to healthcare setting for Indian ethnic group was viewed and the participants expressed themselves such as despite the efforts and advancement by the government, there are still people belonging to indigenous background have limitations to cope and comprehend the benefits of Government's intervention efforts for nutritional intervention programs according to Indian culture. More concerning factors were the facts where CVD patients were ignorant about the health promotions and intervention aspects. Majority of the respondents complained the NHS center was too far away from their residents and have faced difficulties in getting an appointment. The more concerning part was very revealing that the doctors and GPs have difficulty to educate the patients about their health issue and treatment care because of language misunderstanding. This study also reflected on the socio-psychological aspects of selected candidates denoting their lifestyle before and after CVD diagnostics and life changes along with their adherence to live a healthy risk-free life.

**DISCUSSION:**

Public Health, UK and Governments of UK have been proactive in providing benefits to CVD patients; to eradicate the health issue. But lack of awareness in people has put their efforts to stagnation. (Wirrmann EJ, Carlson C, 2005). Government should put more efforts in educating people in more upfront and practical way. Educating people is indeed a challenging task but indigenous group rising in the UK requires a different approach and so far government agencies and community initiative like 'Apnee Sehat' are doing a commendable job in health promotions and bringing about change in people. (Sehat, 2011). Patients are refraining to visit NHS due to reasons that are solely humane. E.g. not being able to book an appointment, language barrier, satisfaction, distance, etc. These

challenges are stagnant, but the resolution is just around the corner. The Indian Patient has a different understanding of health care system.

This definite division in one system only, enables the Indian Patients to have prejudices towards government health care. As they are so habituated to prefer private hospitals and doctors that they still have a skeptical eye for Government hospitals or NHS, UK. (Bhopal R, 2008). Through this study perceptions of patients were revealed not only towards their own pertaining health issue but also for the whole system. Understanding the person's background will enable to reach to Indian patients in the UK with more ease.

Spirituality/religion influences health through these pathways, they act in an indirect way on health. (Oman D, Kurata, J, H., Strawbridge, W. J. & Cohen, R. D, 2002). In India during some festival season people fast or avoid certain types of food consumption, whereas some festivities include lot of food varieties. (G. Leung, S. Stanner, 2011). This affects in maintain healthy diet for CVD patients. This requires an effort and willingness to adhere to from the individual himself as well as his friends and family. Not only this proves to be a collective effort but requires a constant control and vigil. Frequent routine checkups, regularity in medication and following the dietary suggestions are the only steps where CVD risk can be prevented or reduced.

**CONCLUSION:**

CVD is a public health issue that has affected and is still affecting people of different ethnicities globally. In UK, CVD is seen among the different ethnic groups with some ethnic group having more prevalence than others. Individuals with CVD will experience better health care if health care providers advise them on diet modifications according to them culture in daily routine life that suit everyone upon every clinic appointment. This would greatly enhance their knowledge and practice and as such result in better control of CVD problems. Helping people manage their CVD, including the Indian needs to include a rapt understanding of their diet routine according to them religion as this would help to understand and incorporate Indian population's beliefs towards cardiac vascular self-management.

This study observed that participants have no idea about cardiac vascular diseases. This word was new for them because of not getting proper information from health care providers. It revealed that knowledge is necessary for the management of CVD for the patient. If the patients have adequate information about the cardiac diseases such as risk factors specially for diet and lifestyle, they can

more self-manage. Participants also admitted that the knowledge they had about cardiac diseases was basically on medicine and regular checking and exercise. The study observed healthy diet choices made by the participants, however, only a few engaged in exercise because of lack of time and older age. This study was aiming to understand the lived experiences of CVD patients emphasizing on diet modification for CVD risk reduction or prevention. The study revealed that irrespective of the duration of CVD, Indian heart patient individuals managed the condition adequately. . However, different challenges were identified. These challenges were regarded main issues such as language problem, ignorant, and some physical issues. Findings from this study also showed that the health services gotten by the participants were challenged by the task of person-centered support services based on culture and getting appointments with the GP for their regular check-up was difficult. It discovered the need for person-centered cultural management as culture influenced for Cardiac diseases management.

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## REFERENCES:

- American heart association and american college of cardiology function. (2014). *cardiovascular prevention*. public health guideline.
- Antunes, V. (2022). On Nursing Research and Evidence-Based Practice: Topics for researchers and practitioners. *International Healthcare Review* (online), 1(1). <https://doi.org/10.56226/ihr.v1i1.12>
- Australian International Academic Centre. (2017). The Interpretative Phenomenological Analysis(IPA):A guide to a Good Qualitative Research Approach. *International Journal of Education & Literacy Studies*, 9.
- Bernard, H. (2002). *Research method in Anthropology*. california: Atlamira press,walnut creek.
- Bhopal R, U. N. (2008). *Ethnicity and Health in Scotland:Can we fill the information Gap? A demonstration Project Focusing on coronary Heart Disease*. Edinburgh: University of Edinburgh.
- Buttar, H. S., Timao Li, P., & Ravi, n. (2005). prevention of cardiovascular diseases:Role of exercise,dietary interventions, obesity and smoking cessation. *Experimental and Clinical cardiology*.
- Chen, S., & Qin, Y. (2023). On Ethics, Biomedical Education and Health Promotion: International and Chinese Perspectives. *International Healthcare Review* (online). <https://doi.org/10.56226/46>
- Dsouza, B. (2022). On Sustainable Health Systems: A Research Emergency in Pandemic times. *International Healthcare Review* (online), 1(1). <https://doi.org/10.56226/ihr.v1i1.7>
- Enas A.Enas and Sudesh Kanan. (2005). Heart diseases in particular populations:Cracking the Indian paradox in how to beat the heart diseases Epidemic among south. *Prevention and Management Guide for Asian Indians and Their Doctors(Illinois: Advanced Heart Lipid Clinic,2005*, 122.
- Eriksen, R., Gibson, R., Lamb, K., MCMeel, Y., Vergnaud, A.-c., & Spear, J. (2018). Nutrient profiling and adherence to components of the UK national dietary guidelines association with metabolic risk factors. *British journal of Nutrition*, 695-705.
- G.Leung,S. Stanner. (2011). *Diet Of Minority ethnic group in UK*. London: British Nutrition Foundation.
- Ghaffar, A., Reddy, K. S., & Singi, M. (2004, April 3). Burden of non-communicable diseases in South Asi. *BMJ*, pp. 328(7443):807-10.
- Kehinde, O., Dixon-Lawson, K., & Mendelsohn, A. (2023). On Community Pharmacists and Promotion of Lifestyle Modification in Adults with Hypertension: Practice Protocol. *International Healthcare Review* (online). <https://doi.org/10.56226/49>
- Li, N., GUO, M., YOU, S., & JI, H. (2022). On Patient Readiness for Hospital Discharge: an update on recent Evidence. *International Healthcare Review* (online). <https://doi.org/10.56226/ihr.v1i2.30>
- Lloyd Williams, D. (2022). On Healthcare Research Priorities in the USA : From Long COVID to Precision Health, what else is new?. *International Healthcare Review* (online), 1(1). <https://doi.org/10.56226/ihr.v1i1.14>
- Loyola Marrymount University. (2020). *LMU*. Retrieved from <https://academics.imu.edu/irb/qualitativeresearchandapproaches/>
- McLeod, S. (2016). *Simply Psychology*. Retrieved from <https://www.simplypsychology.org/bandura.html>
- Nag, T., & Ghosh, A. (2014). Cardiovascular disease risk factors in Asian Indian Population: A systematic review. *Journal of cardiovascular disease research*, 4(4),222-228.
- Monachino, M. . (2022). On Healthcare Research for Disease Prevention: Critical Knowledge Gaps in European Public Health. *International Healthcare Review* (online), 1(1). <https://doi.org/10.56226/ihr.v1i1.6>
- Moreira, P. (2022). On New Clinical Research Methods and Technologies: From decentralised designs to Artificial Intelligence. *International Healthcare Review* (online), 1(1). <https://doi.org/10.56226/ihr.v1i1.11>
- NCBI. (2015). US National Library of Medicine National Institute of Health. *Arya Atheroscle*, 281-288. Retrieved from Arya Atheroscler.
- Nguyen, T. L. H. (2022). On Improving Healthcare with a world perspective: Evidence for Global Health Programs. *International Healthcare Review* (online), 1(1). <https://doi.org/10.56226/ihr.v1i1.10>

- NHS England. (2017). *Bite size guide to patient insight*. Retrieved from <https://www.england.nhs.uk/wp-content/uploads/2017/04/bitesize-guide-qualitative-research.pdf>
- NHS, U. (2019). *Cardio Vascular Disease*. Retrieved from <https://www.england.nhs.uk/ourwork/clinical-policy/cvd/>
- Oman D, Kurata,J>H,Strawbridge,W.J.& Cohen,R.D. (2002). Religious attendance and cause of death over 31 yea. *Internaional Journal of Psychiatry in Medicine*3, 69-89.
- RHHub. (2019). *Health promotion and disease prevention*. Retrieved from [https://www.ruralhealthinfo.org/toolkits/health-promotion/2/theories and models](https://www.ruralhealthinfo.org/toolkits/health-promotion/2/theories-and-models).
- Roy, D. (2016, may 24). *Health belief model*. Retrieved from <https://www.slideshare.net/kitturoy/health-belief-model-62345546>
- Sehat, A. (2011). *Apnee Sehat*. Retrieved from <http://www.apneesehat.net/index.html>
- SMITH. (2009). Interpretative Phenomenological Analysis: Theory,Method and Research. *Qualitative research in Psychology*, 346-347.
- Sunderland city council. (2019). *sunderland city data*. Retrieved from <https://www.sunderland.gov.uk/article/13270/sunderland-city-data>
- Tian, M., Li , X., Zhou, F., Wang , Y., Wang, Q., Pan , N., & Ji , H. (2023). On the Psychological experiences of Hematopoietic stem cell donors: an update on International Evidence. *International Healthcare Review* (online). <https://doi.org/10.56226/31>
- Wirrmann EJ,Carlson C. (2005). Public health leadership in primary care practice in England:everybody's busiess? *critical public health*, 205.
- Zhang, L., Moreira, J. P., & Xi, Y. (2022). What is Long COVID-19? Clarifying Definitions and Symptoms. *International Healthcare Review* (online). <https://doi.org/10.56226/ihr.v1i2.28>