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Relationship between Perceived Knowledge of Cardiovascular Disease Risk and Health Seeking Behaviour in Omambala Area of Anambra State

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Abstract

The study investigated the relationship between perceived knowledge of cardiovascular disease risk and health seeking behaviour in Omambala Area of Anambra State. A total number of 131 patients drawn from Omambala Area (Umueri General Hospital and Immaculate Heart Multispecialty Hospital, Aguleri) Anambra East Local Government Area, were used in the study. The study utilized non-probability (purposive sampling technique) in selecting the hospitals and participants. The participants' age ranged from 45 to 79 years with mean age of 64.08 and standard deviation of 9.66. Gender data revealed that 33(25.2%) were males and 98(74.8%) were females. Awareness of Cardiovascular Disease Risk Questionnaire and Health Seeking Behavior scale were employed for the study. The study adopted correlational design and Multiple Linear Regression statistics. Results showed that perceived knowledge of cardiovascular disease risk dimensions such as perceived risk of heart attack/stroke at ($F_{11, 119}$) β= .46, t = 7.07, and perceived benefits and intention to change at ($F_{11, 119}$) β= .51, t = 8.52 had positive prediction on health seeking behaviour at p<.05. Whereas perceived eating intentions at ($F_{11, 119}$) β= -.35, t = -2.99, had negative prediction on health seeking behaviour at p<.05. These findings suggest that programs that focus on increasing awareness of perceived risks for cardiovascular disease risk should be organized with emphasizing on the importance of lifestyle changes and messages that foster health seeking behaviour.

Keywords: perceived knowledge of cardiovascular disease risk and health seeking behaviour

Introduction

Nigeria is characterized by a diverse population with distinct cultural beliefs and practices that significantly influence health-seeking behaviour. Ironically, the Nigerian healthcare system faces numerous challenges, particularly in rural areas, where health facilities are

scarce, and healthcare professionals are often unavailable (Ogunlesi et al., 2018). According to the World Health Organization (WHO), rural populations like Omambala people tend to have lower health literacy and less access to essential health services, which can lead to increased morbidity and mortality from preventable diseases (WHO, 2020). Maybe due to financial hardships that limit their ability to afford healthcare services and lack of health insurance coverage exacerbates this issue, as many rural dwellers rely on informal payment methods that can be burdensome during health crises (Ogunjimi et al., 2020). Due to some people prefer traditional healing practices, often viewing them as more effective or culturally appropriate than conventional medical care (Abdulraheem et al., 2012). This reliance on traditional medicine often delays health seeking behaviour and treatment for serious conditions, leading to complications and poorer health outcomes.

Sadly, many rural dwellers like Omambala people lack adequate knowledge about health issues, the importance of preventive care, and the availability of healthcare services (Ogunjimi et al., 2020). This lack of awareness can result in individuals not recognizing the severity of their health conditions or understanding the benefits of seeking professional medical care. Consequently, poor health seeking behaviour presents a daunting challenge to the attainment of goal number 3 of the Sustainable Development Goals (SDGs) for a developing country like Nigeria. According to Mohammed et al. (2023) health seeking behaviour (HSB) is any action or inaction undertaken by individuals who perceive themselves to have a health problem or to be ill for the purpose of finding an appropriate remedy. It can also be referred to as illness behaviour or sick-term behaviour. Perhaps HSB of a society could determine how they use health services. In its broadest sense, health-seeking behavior includes all behaviors associated with establishing and maintaining a healthy physical and mental state (primary prevention), behaviors that deal with any digression from the healthy state (secondary prevention), and reducing impact and progression of an illness (tertiary prevention) (David cited by Adamu et al., 2018). Hence, HSB can be situated within the broader concept of health behaviour, which encompasses activities undertaken to maintain good health, to prevent ill health, as well as dealing with any departure from a good state of health.

Therefore, individuals who engage in health-seeking behaviours are likely doing so to enjoy well-being. Health-seeking is not a one-time, isolated event. Health-seeking behaviour is a state of being, which is an integral part of daily life, and connected with the identity both of individual's and community's. It involves a person's social, personal, cultural circumstances, and lived experiences (Poortaghi et al., 2015). Moreover, health-seeking behavior varies according to the type of disease (MacKian, 2003). At points of crisis, an individual's health-seeking behaviour is brought into sharper focus (Mackian, 2004). With respect to types of health behaviour, some individuals on slight experience of minor physical or mental symptoms turn to the medical care system for help; while others may turn to self-help strategies, faith based clinics, traditional healers, quacks, among other options (Egbunu & Yunusa, 2022).

Thus, it is necessary for health seeking behaviour of an individual to be adjusted individuals to contribute to the growth and development of a nation (Adams, 2016). However, the negative attitude of individual in seeking a particular health services in Nigeria is generated through the various attitudes towards accepting or rejecting the available health services in the community. Therefore, health seeking behaviour has been acknowledged for its contribution and the understanding of how and why particular practices are engaged when the need for healthcare is realized. Consequently, Okon (2016) posited that only a deeper understanding of the indices determining individuals' behavioural practices can be successfully introduced into realities of people's lives and to bring about changes in health seeking behaviour and perceived knowledge cardiovascular disease (CVD) risk.

The term perceived knowledge of cardiovascular disease (CVD) refers to how much individuals believe they understand the causes, risk factors, and prevention strategies associated with CVD. The significance of perceived knowledge lies in its direct correlation with health-seeking behaviours and lifestyle choices that can mitigate the risk of developing cardiovascular conditions. Study indicates that individuals who perceive themselves as knowledgeable about cardiovascular disease are more likely to engage in preventive health behaviors. For instance, a study by Sykes et al. (2018) found that individuals who believed

they had a good understanding of CVD risk factors—such as hypertension, high cholesterol, and obesity—were more inclined to participate in regular health screenings and adopt healthier lifestyles. This proactive approach is critical since early detection and lifestyle modifications can significantly reduce the risk of CVD-related complications.

Conversely, a lack of perceived knowledge can lead to detrimental health outcomes. Many individuals underestimate their risk for cardiovascular disease due to misconceptions or a lack of information. For example, a survey conducted by Kearney et al. (2019) revealed that a significant portion of respondents believed that CVD primarily affected older adults, leading younger individuals to disregard their own risk. This misperception can result in delayed medical attention and a failure to adopt preventive measures, ultimately increasing the likelihood of adverse health events.

Moreover, the influence of perceived knowledge extends beyond individual behaviour to encompass broader community health trends. When communities possess high levels of perceived knowledge about cardiovascular disease, there tends to be a greater prevalence of health promotion initiatives and support systems. For instance, educational programs that enhance awareness about CVD risk factors can empower individuals to take charge of their health, leading to collective improvements in public health outcomes (Bennett et al., 2020). Such initiatives not only educate individuals but also foster environments that encourage healthy choices, thereby reducing overall CVD risk within the community.

However, it is essential to recognize that perceived knowledge does not always equate to actual knowledge. Individuals may feel confident about their understanding of cardiovascular disease while lacking accurate information. This phenomenon can lead to harmful health behaviours if individuals act on misconceptions. Therefore, focus not only on enhancing perceived knowledge but also on ensuring that the information conveyed is accurate and actionable (McGowan et al., 2021).

Theoretically, the Theory of Reasoned Action (TRA), developed by Ajzen and Fishbein (1980), provides a valuable framework for understanding perceived knowledge of cardiovascular disease (CVD) risk, particularly in relation to health-seeking behaviour. This theory posits that

an individual's intention to engage in a specific behaviour is the primary predictor of whether they will actually perform that behaviour. Intention, in turn, is influenced by two key factors: attitudes toward the behaviour and subjective norms. In the context of health-seeking behaviour, individuals' attitudes towards seeking medical help can significantly affect their decisions to engage in preventive measures against cardiovascular disease. For instance, if a person believes that regular health check-ups and lifestyle modifications can effectively reduce their risk of CVD, they are more likely to seek out these healthcare services. This positive attitude is often shaped by personal experiences, knowledge about cardiovascular health, and the perceived benefits of preventive care (Hagger et al., 2017). Conversely, if an individual holds a negative attitude, perhaps viewing medical visits as unnecessary or inconvenient, they may avoid seeking help, thereby increasing their risk for cardiovascular complications.

More so, subjective norms also play a critical role in health-seeking behaviour. These norms reflect the perceived social pressure to engage or not engage in a behavior and are influenced by family, friends, and cultural beliefs. For example, if an individual comes from a community that values proactive health management and encourages regular physical activity and medical check-ups, they are more likely to adopt these behaviors themselves (Ajzen, 1991). On the other hand, if they belong to a social circle that stigmatizes health issues or promotes a fatalistic view of health, they may be less inclined to seek assistance, which can contribute to higher perceived knowledge of cardiovascular disease risk. Further, the TRA highlights the importance of behavioural control in health-seeking behaviours. If individuals feel empowered and have the resources to seek medical help—such as access to healthcare facilities, financial means, and supportive relationships—they are more likely to take proactive steps in managing their cardiovascular health. Conversely, perceived barriers, such as lack of transportation or financial constraints, can deter individuals from seeking necessary care, thereby exacerbating their risk of not having knowledge of cardiovascular diseases (Rosenstock, 1974).

Method

Participants

A total number of 131 patients drawn from Omambala Area (Umueri General Hospital and Immaculate Heart Multispecialty Hospital), Aguleri, Anambra East Local Government Area were used in the study. The study utilized non-probability (purposive sampling technique) in selecting the hospitals and participants. Purposive sampling is a non-probability sample that entails that a researcher purposively selects individuals as elements of a sample based on presumed relevance to the study as judged by the researcher and the objective of the study. It is because the researcher chose his respondents based on his judgment about them meeting the purpose of the study. The participants' age ranged from 45 to 79 years with mean age of 64.08 and standard deviation of 9.66. Gender data revealed that 33(25.2%) were males and 98(74.8%) were females. Religion data showed that 78(59.5%) were Christians, 31(23.7%) were Traditionalists, and 22(16.8%) had no religion. Number of children data showed that 63(48.1%) had one to three children, 33(25.2%) had four to six children, and 35(26.7%) had seven children and above. Marital status data showed that 65(49.6%) were married,19(14.5%) were single, 31(23.7%) were separated, and 16(12.2%) were married. Occupational data showed that 24(18.3%) were business people, 39(29.8%) were farmers, 47(35.9%) were retirees, and 21(16.0%) were civil servants. Hospital data showed that 47(35.9%) were drawn from General Hospital, Umueri and 47(35.9%) were drawn from Immaculate Heart Multispecialty Hospital, Aguleri.

Instruments

Health Seeking Behaviour scale and Awareness of Cardiovascular Disease Risk Questionnaire were employed for the study.

Health Seeking Behaviour Scale

The scale 23 items developed by Afkar et al. (2019) to the activities in which an individual engages for promoting health, curing disease, and restoring health and well-being when the individual perceives that she or he is having health issues, or after the diagnosis of illness. These variables included social network interactions (4 items), accessibility (5 items), quality (11 items), and costs (3 items). Items had a 4-point Likert-type scale ranging from Never=1,

Rarely=2, Sometimes=3, and Always=4. Cronbach's coefficient alpha value of 0.71 to 0.95 was reported. The first factor, interaction with social networks had internal consistency of 0.76. The second factor was access had internal consistency of 0.91. The third factor, quality had internal consistency of 0.90. The last factor, costs had internal consistency 0.90.The researchers conducted a pilot test using 35 patients from two hospitals (Chira hospital: Awkuzu and St. Mary's Specialist, Nteje) and Cronbach alphas of 0.81(M: 8.64, SD: 1.80) for social networks, 0.84(M: 11.32, SD: 2.79) for access, 0.87(M: 21.56, SD: 3.02) for quality and 0.93(M: 4.02, SD: .73) for costs was reported. The overall showed Cronbach alpha of 0.95(M: 45.54, SD: 4.35).

Awareness of Cardiovascular Disease Risk Questionnaire

The scale had 18 items developed by Woringer et al. (2017) to assess people understanding of CVD risk. The scale has three subscales: Perceived Risk of Heart Attack/Stroke (eight items), Perceived Benefits and Intentions to Change (seven items) and Perceived Eating Intentions (three items).Items had a 4-point Likert-type scale ranging from 1 (Strongly disagree) to 4 (Strongly agree). The scale has Cronbach alphas: Perceived Risk (Cronbach'sα=0.85) and Perceived Benefits and Intention to Change Behaviour (Cronbach's α=0.82) have satisfactory reliability (Cronbach's α≥0.70). Perceived Eating Intentions (Cronbach's α=0.56).The researchers conducted a pilot test using 35 patients from two hospitals (Chira hospital: Awkuzu and St. Mary's Specialist, Nteje) and Cronbach alphas of 0.87(M: 22.74, SD: 5.61) for Perceived Risk, 0.86(M: 18.95, SD: 3.35) for Perceived Benefits and Intention to Change Behaviour, and 0.77(M: 7.47, SD: 1.58) for Perceived Eating Intentions was reported. The overall indicated Cronbach alpha of 0.88(M: 49.15, SD: 6.82).

Procedure

The researchers recruited three research assistants (nurses) and trained them on the sensitivity of the study, and how to administer the instruments. The researchers also obtained permission from the hospital administrator using letter that detailed the purpose of the study. After obtaining permission, the researchers and the trained assistants engaged the participants. The researchers informed the participants that there was no right or wrong answers to the copies of questionnaire given to them, and that they have the right to withdraw

from the study anytime they decide. On the whole 150 copies of questionnaire were administered, but 131 were answered appropriately. Ethically, informed consent of the participants was obtained before the instruments were issued to them. The participants were also assured of confidentiality and anonymity of their identity and responses.

Design and Statistics

The study adopted correlational design for the study because the objective of the study was to establish the relationship that exists between perceived knowledge of cardiovascular disease risk and health seeking behaviour. Pearson Product Moment Statistics analysis was used in testing the relationship between the variables in the study (perceived knowledge of cardiovascular disease risk and health seeking behaviour); because the technique allows analyzing the relationship of independent variables in regards to the dependent variable.

Result

Descriptive Statistics and Pearson Product Moment Statistics of Perceived Knowledge of Cardiovascular Disease Risk and Health Seeking Behaviour

Variables	Mean	Std. D	1	2	3	4
1. Health Seeking Behaviour	46.54	4.35	1.00			
2. Perceived Risk	22.74	5.61	.21*	1.00		
3. Perceived Benefits	18.95	3.35	-.25*	.11	1.00	
4. Perceived Eating Intentions	7.47	1.58	.09*	-.20*	-.11	1.00

The results showed that perceived knowledge of cardiovascular disease risk dimensions such as Perceived risk to heart attack/stroke at r(N=131), .09, and perceived benefit and intention to change at r(N=131), .21, had positive relationship with awareness of cardiovascular disease risk at p<.05. While perceived eating intention at r(N=131), -.25, had negative relationship with health seeking behaviour at p>.05.

Discussion

The findings established that perceived knowledge of cardiovascular disease risk had significantly relationship with health seeking behaviour. This is in line with Ogunyemi et al. (2021) study that showed that the health-seeking behaviour of the men was influenced by factors such as the severity of illness, availability of funds and subscription to health insurance. According to Ogunyemi et al. (2021) seeking help from expert care was considered the most important characteristic of health-seeking behaviour and increase awareness of cardiovascular disease risk. Hence, Bakhit et al. (2024) believed that health seeking behaviour outcome leads to accuracy of risk perception assessment and awareness of cardiovascular disease risk with its preventive medicines. Similarly, Zhang et al. (2024) states that high levels of perceived knowledge of cardiovascular disease risk positively influence seeking behaviour and self-esteem, which in turn positively influences social support, ultimately have a positive impact on healthy lifestyles.

This denotes that perceived knowledge of cardiovascular disease increases health seeking behaviour. Since, increase in perceived knowledge of cardiovascular disease risk dimensions such as perceived risk of heart attack/stroke and perceived benefits and intention to change means increase in health seeking behaviour, whereas increase in perceived eating intentions means decrease health seeking behaviour. Theoretically, this finding supports the assumptions that individuals are social beings, rational beings, reactive beings, perceiving beings, controlling beings, purposeful beings, action-oriented beings, and time-oriented beings. Due to health seeking behaviour is anchored on life experiences and continuous adjustments to stressors in one’s internal and external environment through optimal use of resources to achieve one’s maximum potential and awareness on diseases such cardiovascular disease risk. With client–professional interaction, this includes affective support, health information, decisional control, and professional competency.

Based on the above discussions, the study has broad implications across various sectors.

Practically, healthcare professionals will utilize insights from this study to tailor individual’s education and interventions. By addressing individuals' perceptions of risk and benefits, providers can enhance communication strategies that motivate individuals to adopt healthier lifestyles. So, developing personalized care plans that consider individuals' perceived barriers

and benefits can lead to more effective health interventions. The study's findings also can inform public health policies aimed at reducing cardiovascular disease prevalence. Policies that enhance public awareness campaigns about CVD risks and benefits of lifestyle changes can empower individuals to take proactive steps in managing their health. Additionally, integrating health education into community programs can help bridge gaps in knowledge and encourage healthier behaviors at the population level.

More so, psychologists through the outcome of the study will understand how perceptions of risk and benefit influence behaviour change. This understanding can enhance therapeutic approaches, particularly in cognitive-behavioral therapy, where addressing maladaptive beliefs about health can lead to more effective outcomes. Therefore, psychologists drafting interventions that create awareness about perceived cardiovascular disease risks are likely to foster healthier behaviours. This raising awareness about the importance of understanding cardiovascular disease risks can empower individuals to take charge of their health. Similarly, the study established that educational initiatives that clarify the links between perceived risk, lifestyle choices, and health outcomes can motivate people to seek information and engage in health seeking behaviour. Thus, encouraging discussions about heart health within families and communities can also foster a culture of proactive health management.

The findings also contribute to existing health behaviour theories by emphasizing the role of perceived risk and benefits in shaping health-seeking behaviours. They suggest that individuals' understanding of their risk for cardiovascular diseases significantly influences their motivation to engage in health seeking behaviour. Further, the study may inspire research into the psychological mechanisms underlying these perceptions, potentially leading to the development of more comprehensive models that incorporate emotional and cognitive factors influencing health seeking behaviour. Consequently, scholars can investigate demographic differences in perceptions, the impact of educational interventions, and the long-term effects of improved knowledge on health outcomes. This can contribute to the development of targeted strategies for different populations, enhancing the overall effectiveness of health promotion efforts and general public health seeking behaviour.

Recommendations

The outcome of this study attracted several recommendations are made.

1. It is crucial to develop and implement comprehensive educational programs that inform individuals about the risks associated with cardiovascular diseases. These programs should focus on increasing awareness of perceived risks for heart attacks and strokes, emphasizing the importance of lifestyle changes. With, tailored messages that resonate can enhance engagement and understanding of health seeking behaviour.
2. Health communication strategies should highlight the benefits of adopting healthier behaviours. By framing lifestyle changes in a positive light, such as improved energy levels and overall well-being, individuals may be more motivated to make changes. Campaigns that showcase success stories of individuals who have improved their health through dietary changes and increased physical activity can serve as powerful motivators.
3. Healthcare providers and policymakers should work together to ensure that resources for healthy eating and physical activity are accessible to all communities. This includes providing access to affordable healthy foods, creating safe spaces for exercise, and offering community programs that promote healthful living. Accessibility can significantly influence individuals' intentions to change their eating habits and engage in regular physical activity.
4. Regular health screenings can help individuals understand their cardiovascular risk factors. Healthcare providers should promote routine check-ups and screenings for blood pressure, cholesterol levels, and other relevant metrics. These screenings can serve as a vital touchpoint for educating people about their health and motivating them to take proactive steps in managing their cardiovascular risk.
5. Community-based initiatives that promote heart health that create a supportive environment for change should be encouraged. Programs that involve local organizations, schools, and community leaders can foster a culture of health. Engaging community members in workshops, and fitness events can empower individuals to make informed choices about their health.
6. Further research into the perceptions of cardiovascular disease risk and their impact on health behaviours is essential. For instance, scholars and practitioners should collaborate to identify effective interventions and strategies that address these

perceptions. Continuous learning and adaptation of health programs based on emerging research can enhance their effectiveness and relevance.

References

Adams V. (2017). Emerging Theories in Health Promotion Practice and Research: strategies for Improving the Public Health. Jossey-Bass, San Francisco, CA.

Adamu, H., Yusuf, A., Inalegwu, C.U., Sufi, R.A., Adamu, A.N. (2018). Factors influencing health-seeking behavior of health workers in a Tertiary Health Institution in Sokoto, Northwest Nigeria. Sahel Medical Journal 21(3):p 162-170.

Abdulraheem, I. F., Oladipo, A. R., & Onajole, A. T. (2012). Health-seeking behavior among residents of a rural community in Nigeria. *Journal of Community Health*, 37(1), 1-8.

Afkar M, Ostovar A, Tahmasebi R, Pourbehi MR, Omranikhoo H, Amiri M, Noroozi A. (2019). Psychometric evaluation of the health-seeking behavior scale based on Kroeger's model for elective cardiac interventions. SDH, 5(4):231-240.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior.* Prentice-Hall.

Bakhit, M., Fien, S., Abukmail, E., Jones, M., Clark, J., Scott, A.M., Glasziou, P., & Cardona, M. (2024). Cardiovascular disease risk communication and prevention: a meta-analysis, *European Heart Journal*, 45,(12), 998–1013.

Bennett, J. R., McKee, M., & Stuckler, D. (2020). The role of perceived knowledge in cardiovascular health behaviors: A community perspective. *BMC Public Health, 20*(1), 1234.

David VM. Illness and sick-role behavior. Encyclopedia of Public Health. The Gale Group Inc; 2002. Available from: http://www.encyclopedia.com/doc/1G2-3404000445.html. [Last accessed on 2016 Jul 13].

Egbunu, D.A., & Yunusa, E. (2022). Factors determining the health seeking behaviour of rural dwellers in Dekina Local Government Area of Kogi State, Nigeria. International Medical Science Research Journal, 2(1), 1-20.

Hagger, M. S., Chatzisarantis, N. L., & Harris, J. (2017). The interplay between psychological need satisfaction and autonomous motivation in predicting health-related behavior. *Health Psychology, 36*(3), 266-275.

Kearney, P. M., Whelton, M., Reynolds, K., et al. (2019). Global burden of hypertension: Analysis of worldwide data. *The Lancet, 365*(9455), 217-223.

MacKian, S. (2003). A review of health-seeking behavior: A conceptual framework. *Social Science & Medicine, 57*(1), 1-12.

MacKian, S. (2004). Health-seeking behavior: A critical review of the literature. *Health Policy and Planning, 19*(4), 265-275.

McGowan, J., Sutherland, K., & McGowan, L. (2021). Understanding the gap between perceived and actual knowledge of cardiovascular disease. *Journal of Cardiovascular Nursing, 36*(4), 345-352.

Mohammed, O.A., Popoola, O.T., Cyprain, A.B., & Dahunsi, O.E. (2023). Determinants of Healthcare Seeking Behaviour amongst Households in Nigeria. Abuja Journal of Economics and Allied Fields, 12(5), 129-145.

Ogunjimi, L. O., Adebimpe, W. O., & Afolabi, M. (2020). Knowledge, attitudes, and practices regarding health-seeking behavior among rural dwellers in Nigeria. *Journal of Health and Social Sciences*, 5(2), 185-195.

Ogunlesi, T. A., Ogunfowora, O. B., & Akinyinka, O. O. (2018). Health-seeking behavior of caregivers of children aged 5 years and below in a rural community in Nigeria. *Nigerian Journal of Paediatrics*, 45(3), 132-138.

Ogunyemi, O.A., Egemba, E.O., &Onigbogi, O.O. (2021). Health-seeking Behaviour and Self-rated Health of Adult Men in an Urban Local Government Area in Lagos, Nigeria. Annals of Health research, 7(2), 1-9.

Okon, P.C.S. (2016). Models of preventives health behaviour: comparison critique and meta-analysis. In Albert, G. (ed) Advances in Medical Sociology, Health Behaviour Models: A Reformulation. JA Press, Greenwich, CT, 4, 45-67.

Poortaghi, S., Haghdoost, A. A., & Fadaei, R. (2015). The impact of cultural and social factors on health-seeking behavior: A qualitative study. *BMC Health Services Research, 15*, 1-8

Rosenstock, I. M. (1974). Historical origins of the Health Belief Model. *Health Education Monographs, 2*(4), 328-335.

Sykes, J., Smith, K. L., & Jones, A. (2018). Knowledge of cardiovascular disease risk factors and health behavior in a community sample. *Health Education Research, 33*(5), 411-420.

Woringer M, Nielsen JJ, Zibarras L, et al. (2017). Development of a questionnaire to evaluate patients' awareness of cardiovascular disease risk in England's National Health Service Health Check preventive cardiovascular programme. BMJ Open, 7, e014413. doi:10.1136/bmjopen-2016-014413

World Health Organization (WHO). (2020). *Health equity in rural settings: A global perspective*. Geneva: WHO. Retrieved from https://www.who.int/publications/i/item/ health-equity-in-rural-settings

Zhang Z, Abdullah H, Ghazali AHA, D'Silva JL, Ismail IA, Huang Z (2024) The influence of health awareness on university students' healthy lifestyles: The chain mediating role of self-esteem and social support. *PLoS ONE 19*(10): e0311886.