Original Article

Assess the Knowledge, Attitude and Perception of Patients who Suffered from Myocardial Infarction Towards the Disease and their Associated Life Style Behaviour

Radha K[1], Prabha Agnibhoj[2], Gigini George[3], Priya Rathore[4]

[1]College of Nursing, SGPGIMS, Lucknow, UP, [2]Lecturer, Bhopal Nursing College, BMHRC-ICMR, Bhopal, [3]Tutor/ clinical instructor, College of Nursing, AIIMS Nagpur, [4]Priya MSc Nursing (Alumni student), Bhopal Nursing College, BMHRC-ICMR, Bhopal.

How to cite this article: Radha K, Prabha Agnibhoj, Gigini George et. al. Assess the Knowledge, Attitude and Perception of Patients who Suffered from Myocardial Infarction Towards the Disease and their Associated Life Style Behaviour. Indian Journal of Public Health Research and Development / Vol. 16 No. 2, April-June 2025.

Abstract

Introduction: Cardiovascular diseases (CVDs) are the leading cause of death worldwide, accounting for 17.9 million deaths annually. In India, CVDs account approximately 25% of all mortality, with ischemic heart disease and stroke being the most predominant causes. The study aims to assess knowledge, attitude, and perception of Myocardial Infarction patients' towards Myocardial Infarction (MI) and their associated life style behaviour.

Material and Methods: A cross-sectional non-experimental study was to assess the knowledge, attitude, and perception of Myocardial Infarction (MI) patients and their associated lifestyle behaviours. The study was focused exclusively on patients diagnosed with MI, excluding those with acute illness, limited comprehension, or psychiatric illness. A validated questionnaire was used to assess the level of knowledge, and standardized scales were used to measure to assess the attitude and perception. The study received ethical and administrative approval from institution and data analysis was performed using SPSS version 20.

Results: The mean knowledge score was 12.9 out of 25, with a significant association between age groups and knowledge scores. The study found that a majority of myocardial patients have a positive attitude and 65% having moderate positive perception towards lifestyle behaviour modification related to myocardial infarction (66.7%), with male showing a higher association compared to female.

Conclusion: This research has highlighted the importance of health literacy in determining cardiovascular outcomes, which will guide the development of targeted interventions for secondary prevention of MI that specifically address health literacy gaps.

Keywords: Myocardial Infarction, lifestyle behaviour , knowledge, attitude, perception

Corresponding Author: Radha K, Principal, College of Nursing, SGPGIMS, Lucknow, UP.

E-mail: radha.adn@gmail.com

Submission date: September 24, 2024 **Acceptance dat**e: October 24, 2024 **Published date: March 11 , 2025**

Introduction

Cardiovascular diseases (CVDs) account for 17.9 million deaths worldwide each year, making them the primary cause of death. These illnesses include rheumatic heart disease, coronary heart disease, and cerebrovascular disease, among other medical conditions. Heart attacks and strokes account for more than four out of five deaths from CVD, with one-third of these deaths occurring prematurely among those under the age of 70. Tobacco, alcohol, poor diet, and physical inactivity are behavioral risk factors for heart disease and stroke. An increased chance of heart attack, stroke, heart failure, and other consequences can result from these risk factors.[1]

The South Asian region accounted for the biggest portion of the estimated 422 million prevalent cases of cardiovascular disease (CVD) worldwide in 2015, according to the findings of the Global Burden of Disease (GBD) study group.[2] In 2022 alone, CVD caused an estimated 19.8 million deaths worldwide, corresponding to 396 million years of life lost and another 44.9 million years lived with disability (YLD)[3].Between 2025 and 2050, a 90.0% increase in cardiovascular prevalence, 73.4% increase in crude mortality, and 54.7% increase in crude DALYs are projected, with an expected 35.6 million cardiovascular deaths in 2050 (from 20.5 million in 2025).[4]

CVDs have become the leading cause of mortality in India, accounting for a quarter of all mortality. In 2017, CVD accounted for 26.6% (25.3%-27.4%) of overall fatalities and 13.6% (12.5%-14.6%) of total DALYs in India, up from 15.2% (13.7-16.2) and 6.9% (6.3-7.4) in 1990.[5]Ischemic heart disease and stroke are the predominant causes, responsible for over 80% of CVD deaths. The epidemic is characterized by socioeconomic gradients, with tobacco use and low fruit and vegetable intake becoming more prevalent among those from lower socioeconomic backgrounds.

MI has a major prevalence among heart patients in India, with the main incidence occurring in men aged 29-69 years. Many studies suggest that lack of knowledge about lifestyle changes before and after MI increases morbidity and mortality rates. A study by Ängerud, K. et al(2013) found that only 16% had adequate knowledge about heart diseases and factors associated with them. A study on patients' attitudes and knowledge about MI revealed that 65% had inadequate knowledge and negative attitudes towards the disease, leading to increased morbidity and mortality rates.[6,7] Cardiac rehabilitation in terms of medication compliance, regular follow up, life style modifications and exercises are very important to prevent future cardiac events. This is only possible with adequate knowledge, attitude, and perception to change behaviour. Moreover, there are limited studies conducted among patients with myocardial infarction to understand their perception. Hence the current study was planned to assess the knowledge, attitude and perception regarding Myocardial Infarction (MI) and associated life style behavior of the patients with MI which will be a potential determinant in maintaining the subsequent health behaviour of the patients.

Title

A descriptive study to assess the knowledge, attitude and perception of patients who suffered from myocardial Infarction towards the disease and their associated life style behaviour

Objectives

The objectives of this study are to

1. Assess the level of knowledge, attitude and perception regarding MI and associated lifestyle behavior among patients with myocardial infarction.
2. Associate the score of knowledge, attitude and perception of MI and associated life style behavior of patient with selected socio-demographic variables.
3. Corelate the score of knowledge with attitude, knowledge with perception and perception with attitude of MI and associated life style behavior of patient with MI.

Hypotheses

H_0-There is no significant difference between knowledge, attitude and perception regarding MI and associated life style behavior of the patients with myocardial infarction.

H_1- There is a significant difference between knowledge, attitude and perception regarding MI and associated life style behavior of the patients with myocardial infarction.

H_2- There is a significant association between knowledge, attitude and perception regarding MI and associated life style behavior with selected demographic variables among myocardial infarction patients.

H_3- there is no significant correlation of the score of knowledge with attitude, knowledge with perception and perception with attitude of MI and associated life style behavior of patient with MI.

Materials and Methods

- Research design: A Non-Experimental descriptive design was used to assess the knowledge, attitude, perception regarding Myocardial Infarction (MI) and their associated life style behaviour of patients with MI.
- Setting: The study was conducted in the outpatient department of Cardiology department at Bhopal Memorial Hospital and Research Centre. The study was limited to the OPD of a single health care facility and to the patients diagnosed with Myocardial Infarction(MI).
- Sampling & sample size: A convenient sampling technique is used in this study. As the time duration for data collection was limited ,the probability sampling techniques were not utilized. The sample size was 150, calculated using Epi-info. The sample size was adequate enough to account for the generalizability. Further, the sample was not assessed for any comorbidities. Epi-info was used to calculate the sample size and a sample of 150 was derived. Moreover, those patients with acute illness, limited comprehension and having a confirmed diagnosis of psychiatric illness were excluded
- Data collection: data was collected from July to September 2022 over a period of three months, with each patient's data collection taking 20-30 minutes.

Tools used in this study:

- **TOOLI:** Demographic Variables which included age, gender, incomeper month, education, familyhistory, maritalstatus, religion, residential area, occupation, diet
- **TOOLII**: A validated questionnaire comprising 25 questions was used to assess the knowledge regarding MI. The validation was done by six experts in the field of medicine and nursing.
- **Tool III and IV:** Standardised scales-Control Attitude Scale-Revised and Brief Illness perception questionnaire were used to measure attitude and illness perception. Both the scales had 8 items measured on a likert format with 5 points ranging from "5 = strongly agree'' to ''1 = strongly disagree'' and a rating scale with 10 points ranging from"0-10".[8,9] Permisisons were obtained from the respective authors to use the tools in the study.

Ethical approval: The permission obtained to conduct of the research study has been approved by the Ethical Committee (IEC/30/Nursing College/22) and Scientific Committee (BMHRC/ISC/ Desp/2022/50) of the institution, Bhopal Memorial Hospital & Research Centre, Bhopal (BMHRC).

Validity and reliability of the tool: The validation was done by six experts in the field of medicine and nursing for self-structured knowledge questionnaire. A robust score of 0.8 for reliability was obtained for the tool. Standardized tools were used for measuring the attitude and perception. The permission was obtained from consent author.

Tools	Reliability Method	Reliability coefficient	Remarks
Knowledge - Structured Knowledge Questionnaire	Split Half Method	r=0.811	Self-structured tool
Attitude Scale	Cronbach's alpha internal consistency coefficient	r= 0.8	Standardized tool
Brief Illness Perception Questionnaire (B-IPQ) – likert scale	Cronbach's alpha internal consistency coefficient	r=0.85	Standardized tool

Data analysis: Descriptive and inferential statistics was used to analyse the data using SPSS version 20.Karl Pearson correlation was used to correlate the different outcome variables of the study as the outcome variables were continuous data and may influence each other.

Results and Interpretation

Table 1: Assess demographic variables of among patients with myocardial infarction. (n=150)

S.no	Socio-demographic variables of patients		Frequency (%)
1.	Age in years	<30-40 year	24(16%)
		41-50 year	45(30%)
		51-60 year	51(34%)
		Above 60	30(20%)
2.	Gender	Male	90(60%)
		Female	60(40%)
3.	Family income (Monthly)	Rs<10,000	69(46%)
		Rs.10,001-20,000	49(32.7%)
		Rs.20,001-30,000	17(11.3%)
		Rs.>31,000	15(10%)
4.	Educational status	Illiterate	40(26.7%)
		Primary	34(22.7%)
		Secondary	49(32.7%)
		Graduate and above	27(18%)
5.	Marital status	Married	111(74%)
		Unmarried	13 (8.7%)
6.	Religion	Divorced	1(.7%)
		Widow	25(16.7%)
		Hindu	87(58%)
		Muslim	63(42%)
7.	Residential area of patient	Rural	10 (6.7%)
		Urban	140(93.3%)
8.	Occupational status	Service	61(40.7%)
		Non-service	89(59.3%)
9.	Diet	Vegetarian	78(52%)
		Nonvegetarian	72(48%)
10.	Family history of myocardial infarction	Yes	53(35.33%)
		No	97(64.67%)

2. Assess the level of knowledge regarding MI and associated lifestyle behavior among patients with myocardial infarction (n=150)

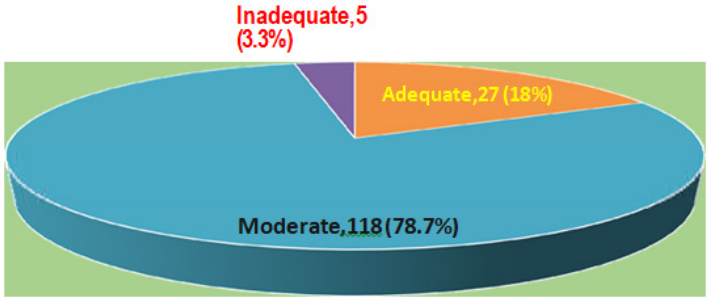

Fig 1: Frequency and percentage distribution of knowledge score among Myocardial Infarction patients

The figure above illustrates that the mean knowledge score was 12.9 ± 2.7; it was shown that 3.3% (5) of participants had inadequate knowledge, 18% (27) had adequate knowledge, and 78.7% (118) had moderate knowledge.

Table 2: Assess the level of attitude regarding MI and associated lifestyle behavior among patients with myocardial infarction n=150

Level of Attitude	Frequency(f)	Percentage(%)	Mean	SD
Moderate	50	33.3	30.33	7.10
High	100	66.7	30.49	7.14

The table 2 shows that the majority of participants have high level of attitude (66.7%), compared to a moderate level (33.3%). This indicates that majority of the participants has a more positive or favorable attitude. The mean score of moderate (30.33) and high (30.49) levels and the standard deviations are similar (7.10 for moderate and 7.14 for high).

Table 3: Assess the level of attitude regarding MI and associated lifestyle behavior among patients with myocardial infarction

Level of Perception	Frequency(f)	%	Mean	SD
Very low	4	2.7	52.93	14.02
Low positive	12	8.0	52.82	12.80
Moderate	98	65.3	52.79	11.17
High positive	36	24.0	54.24	9.86

The data presented in table 2 shows the level of perception among patients with myocardial Infarction. In the perception assessment, majority of the subjects have moderate level of perception (65.3%) with mean score of 52.79, SD = 11.17 and high positive perception (24.0%) mean score of 54.24, SD = 9.86.

Correlate the score of knowledge, attitude and perception of MI and associated life style behavior of patient with selected socio- demographic variables.

Figure 3 and figure 4 depicts the relationship between knowledge and attitude of the patients, attitude and perception score of the patients respectively. The Karl Pearson's correlation coefficient, r = .163 with the p = .05 shows a significant moderate positive correlation between the knowledge score and attitude of the patients. Similarly there was a significant moderate positive correlation between attitude and perception score(r=0.20, p=0.01) while there was no relationship between the knowledge and perception score of the patients.

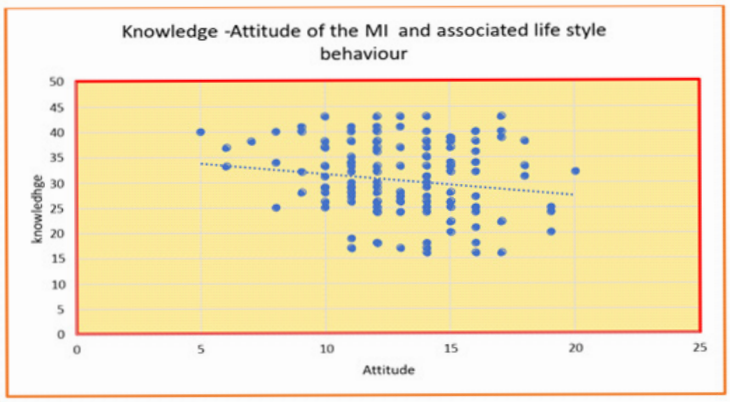

Figure 3: Scatter diagram showing the relationship between knowledge and attitude of the patients related to MI

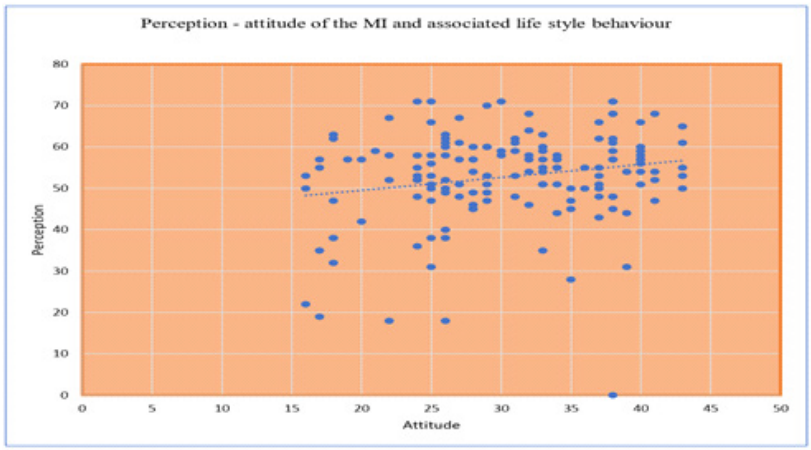

Figure 4: Scatter diagram showing the relationship between attitude and perception of the patients related to MI

Discussion

The study findings reflect that amongst 150 participants most are middle-aged to older 51-60 year age group (34%), while fewer patients were in the 30-40 age with a higher representation of males (60%). In a similar way, the INTERHEART study, which found that South Asians had a lower mean (SD) age of first myocardial infarction (53.0 [11.4] years) than people from other countries (58.8 [12.2] years; $p < 0.001$)[10]. This was probably explained by the higher level of risk factors in younger individuals. In addition, several conditioning factors such as education, socio-economic status, fetal programming and early life contribute to the increased risk of cardiovascular risk among South Asians[11]. The study also observed that 60% of MI patients were male, reported by Kundu et al. (2017-18) study, which found that men experience a greater burden of premature cardiovascular mortality compared to women[(12)].

In this study majority of the participants were reported as vegetarian as compared to nonvegetarians. Furthermore, most (64.7%) of the patients reported no family history of MI. contrasting with a systematic review which found vegetarians had a 15% lower risk of cardiovascular disease and a 21% lower risk of ischemic heart disease compared to non-vegetarians[13].Clinical guidelines suggest that after a MI, patients should be assisted in changing their lifestyle and using medicine to lower their risk of recurrence and its related complications[14-15]. However, maintaining these preventive behaviours can be challenging, if they do not follow regular life style modification it may lead to higher mortality or hospital readmissions. The ability to get and comprehend basic health information and services and, as a result, take part in decisions pertaining to one's health is known as health literacy. Health literacy crucial for secondary prevention in patients with MI[(16-18)].

The current study found majority of the participants have secondary education 49(32.7%) indicating a need for enhanced health literacy strategies. This is consistent with findings by[19]Diederichs et al (2018), which reported A significantly higher proportion of individuals with CVD had inadequate health literacy as compared to those without CVD(men 41.8% vs. 33.6%, women 46.7% vs. 33.4%). The socio-demographic variables had no association with the health literacy score of the individuals except the various categories of age groups.

In contrast, Garcia-Codina O reported younger age, high socio-economic status and employed status as significant determinants of health literacy[20]. Despite relatively low health literacy scores, 66.7% of participants demonstrated a positive attitude and 65.3% had a positive perception towards MI-related lifestyle changes. Males exhibited a stronger association with attitude towards lifestyle modification than females. Other socio-demographic factors did not significantly influence attitudes or perceptions related to MI.

The study findings focus on the need to incorporate health literacy in the management of the post MI patients. Health literacy includes the skills and resources that people need to appraise health information, and to access and engage with health services and providers.[21,22] Even though, patients had a positive attitude and perception towards their lifestyle changes, sustained motivation from the healthcare providers are essential to keep up the momentum.

Conclusion

In conclusion, this study highlights that while patients with MI generally possess moderate knowledge and have a positive attitude and perception towards their condition and lifestyle changes, and also highlighted the importance of health literacy as a determinant of cardiovascular outcomes,. Enhanced educational programs tailored to patients' specific needs and socio-demographic backgrounds could further improve their knowledge and management of MI. Additionally, healthcare providers' especially nursing officers, nurse educators, nurse practitioners and policy makers should consider these factors when developing and implementing lifestyle modification programs to ensure better patient outcomes and adherence.

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Conflict of Interest: The authors declare no conflict of interest.

References

1. World Health organization Available from: https://www.who.int/health-topics/ cardiovascular-diseases#tab=tab_1
2. Roth GA, Global, Regional, and National Burden of Cardiovascular Diseases for 10 Causes, 1990 to 2015. J Am CollCardiol. 2017 Jul 4;70(1):1-25. doi: 10.1016/j.jacc.2017.04.052. Epub 2017 May 17. PMID: 28527533; PMCID: PMC5491406.
3. Mensah G.A., Fuster G.A., Murray C.J.L., Roth G.A. "Global Burden of Cardiovascular Diseases and Risks Collaborators. Global Burden of Cardiovascular Diseases and Risks, 1990-2022". J Am CollCardiol . 2023;82:2350-2473.
4. Chong B, Jayabaskaran J, Jauhari SM, Chan SP, Goh R, Kueh MTW, Li H, Chin YH, Kong G, Anand VV, Wang JW, Muthiah M, Jain V, Mehta A, Lim SL, Foo R, Figtree GA, Nicholls SJ, Mamas MA, Januzzi JL, Chew NWS, Richards AM, Chan MY. Global burden of cardiovascular diseases: projections from 2025 to 2050. Eur J PrevCardiol. 2024 Sep 13:zwae281. doi: 10.1093/eurjpc/zwae281. Epub ahead of print. PMID: 39270739.
5. India State-Level Disease Burden Initiative CVD Collaborators. The changing patterns of cardiovascular diseases and their risk factors in the states of India: the Global Burden of Disease Study 1990-2016. Lancet Glob Health. 2018 Dec;6(12):e1339-e1351. doi: 10.1016/S2214-109X(18)30407-8. Epub 2018 Sep 12. PMID: 30219317; PMCID: PMC6227386.
6. Ängerud, K. H., Brulin, C., &Näslund, E. (2013). Longer pre-hospital delay in first myocardial infarction among patients with diabetes: An analysis of 4266 patients in the Northern Sweden Monica Study. BMC Cardiovascular Disorders, 13, 7
7. Baxter, S. K., &Allmark, P. (2013). Reducing the time-lag between onset of chest pain and seeking professional medical help: A theory-based review. BMC Medical Research Methodology, 13(1), 11.
8. Broadbent E, Petrie KJ, Main J, Weinman J. The brief illness perception questionnaire. J Psychosom Res. 2006 Jun;60(6):631-7. doi: 10.1016/j.jpsychores.2005.10.020. PMID: 16731240.
9. Moser DK, Riegel B, McKinley S, Doering LV, Meischke H, Heo S, Lennie TA, Dracup K. The Control Attitudes Scale-Revised: psychometric evaluation in three groups of patients with cardiac illness. Nurs Res. 2009 Jan-Feb;58(1):42-51. doi: 10.1097/NNR.0b013e3181900ca0. PMID: 19092554; PMCID: PMC2668922.
10. Joshi P, Islam S, Pais P, Reddy S, Dorairaj P, Kazmi K, Pandey MR, Haque S, Mendis S, Rangarajan S, Yusuf S. Risk factors for early myocardial infarction in South Asians compared with individuals in other countries. JAMA. 2007 Jan 17;297(3):286-94. doi: 10.1001/jama.297.3.286. PMID: 17227980.
11. Nair M, Prabhakaran D. Why Do South Asians Have High Risk for CAD? Glob Heart. 2012 Dec;7(4):307-14. doi: 10.1016/j.gheart.2012.09.001. Epub 2012 Oct 16. PMID: 25689942.
12. Graham I, Atar D, Borch-Johnsen K, et al.. European guidelines on cardiovascular disease prevention in clinical practice: Executive summary: fourth joint Task force of the European Society of cardiology and other societies on cardiovascular disease prevention

in clinical practice (constituted by representatives of nine societies and by invited experts). Eur Heart J 2007;28:2375–414. 10.1093/eurheartj/ehm316 [PubMed] [CrossRef] [Google Scholar]

13. Smith SC, Allen J, Blair SN, et al.. AHA/ACC guidelines for secondary prevention for patients with coronary and other atherosclerotic vascular disease: 2006 update: endorsed by the National heart, lung, and blood Institute. Circulation 2006;113:2363–72. 10.1161/CIRCULATIONAHA.106.174516 [PubMed] [CrossRef] [Google Scholar]
14. Kundu, J., James, K.S., Hossain, B. et al. Gender differences in premature mortality for cardiovascular disease in India, 2017–18. BMC Public Health 23, 547 (2023). https://doi.org/10.1186/s12889-023-15454-9
15. Dybvik JS, Svendsen M, Aune D. Vegetarian and vegan diets and the risk of cardiovascular disease, ischemic heart disease and stroke: a systematic review and meta-analysis of prospective cohort studies. Eur J Nutr. 2023 Feb;62(1):51-69. doi: 10.1007/s00394-022-02942-8. Epub 2022 Aug 27. PMID: 36030329; PMCID: PMC9899747.
16. ed.National Heart Foundation and Cardiac Society of Australia and New Zealand . Reducing risk in heart disease: an expert guide to clinical practice for secondary prevention of coronary heart disease. Melbourne: National Heart Foundation of Australia, 2012. [Google Scholar]
17. Greenland M, Knuiman MW, Hung J, et al.. Cardioprotective medication adherence in Western Australians in the first year after myocardial infarction: restricted cubic spline analysis of adherence-outcome relationships. Sci Rep 2020;10:4315. 10.1038/s41598-020-60799-5 [PMC free article] [PubMed] [CrossRef] [Google Scholar]
18. Piepoli MF, Corrà U, Dendale P, et al.. Challenges in secondary prevention after acute myocardial infarction: a call for action. Eur J PrevCardiol 2016;23:1994–2006. 10.1177/2047487316663873 [PubMed] [CrossRef] [Google Scholar]
19. Bansilal S, Castellano JM, Garrido E, et al.. Assessing the Impact of Medication Adherence on Long-Term Cardiovascular Outcomes. J Am CollCardiol 2016;68:789–801. 10.1016/j.jacc.2016.06.005
20. Diederichs C, Jordan S, Domanska O, Neuhauser H. Health literacy in men and women with cardiovascular diseases and its association with the use of health care services - Results from the population-based GEDA2014/2015-EHIS survey in Germany. PLoS One. 2018 Dec 6;13(12):e0208303. doi: 10.1371/journal.pone.0208303. PMID: 30521588; PMCID: PMC6283547.
21. Garcia-Codina O, Juvinyà-Canal D, Amil-Bujan P, Bertran-Noguer C, González-Mestre MA, Masachs-Fatjo E, Santaeugènia SJ, Magrinyà-Rull P, Saltó-Cerezuela E. Determinants of health literacy in the general population: results of the Catalan health survey. BMC Public Health. 2019 Aug 16;19(1):1122. doi: 10.1186/s12889-019-7381-1. PMID: 31420029; PMCID: PMC6698033.
22. Talevski J, Wong Shee A, Rasmussen B, Kemp G, Beauchamp A. Teach-back: A systematic review of implementation and impacts. PLoS One. 2020 Apr 14;15(4):e0231350. doi: 10.1371/journal.pone.0231350. PMID: 32287296; PMCID: PMC7156054.