

Life Style of Newly Diagnosed Adults with Heart Attacks

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ABSTRACT

Background: Heart attacks among adults are considered one of the most prevalent global health concerns. **Aim:** to assess the lifestyle of newly diagnosed adults with heart attacks. **Design:** A descriptive research design was utilized in this study. **Setting:** The study was conducted in the outpatient cardiology clinics of the Academy of Heart at Ain Shams University Hospital in Cairo governorate. **Sample:** A Purposive sample of 251 newly diagnosed adults. **Study tool:** Two tools were used for data collection: **The first tool** was a structured interview questionnaire, which consisted of five parts: **Part 1:** Socio-demographic characteristics of a newly diagnosed adult with heart attacks. **Part 2:** Knowledge of newly diagnosed adults with heart attacks. **Part 3:** Reported practices of newly diagnosed adults with heart attacks related to lifestyle. **Part 4:** Health needs and problems of newly diagnosed adults with heart attacks. **Part 5:** Lifestyle questionnaire sheet. **The second tool:** Medical records. **Results:** The mean age of the newly diagnosed adults with heart attacks was 37.65 ± 5.22 . 57.2% of the studied sample had a satisfactory level of total knowledge. 55.6 % of the studied sample reported unhealthy practices. 62.8% of the studied newly diagnosed adults with heart attacks had not achieved health needs. However, 58.4% of the studied newly diagnosed adults with heart attacks had unhealthy lifestyles. **Conclusion:** More than half of the studied newly diagnosed adults with heart attacks had a satisfactory level of total knowledge. More than half of the studied newly diagnosed adults with heart attacks had unhealthy reported practices. There was a highly statistically significant relationship between total knowledge and total practices, and there was a highly statistically significant relationship between total problems and total practices. **Recommendation:** A health education program to increase the adult's knowledge, improve their practices, and teach them the importance of early treatment and healthy lifestyle guidelines.

Key words: Life Style, Heart Attacks, Newly Diagnosed Adults.

Introduction

Heart attacks are life-frightening diseases and should be contemplated as a global health priority. Moreover, heart attacks place great stress on adults, carers, and healthcare systems. For the present, almost 30 million adults worldwide are living with heart diseases, such as adults affected by heart attacks because of cholesterol deposits, high blood sugar, poor hygiene, being physically inactive, an unhealthy diet, smoking and hand-to-mouth smoking, being overweight, high blood pressure, and viral infection, with survival rates worse than any other disease (Roth *et al.*, 2020).

Globally, heart attacks are the leading cause of death for both men and women, with more than half of the deaths occurring in men. One in every four adults is afflicted with and dies of a heart attack, and in the United States, over 610,

000 afflicted Americans lose their lives annually. The number of cardiovascular disease-related deaths was up to 17.9 million in 2016 and is expected to reach 22.2 million by 2030. Heart attacks are responsible for more than 70,000 deaths in the United Kingdom each year (WHO, 2021).

Heart attack is, an acute episode of coronary heart disease marked by the death or damage of heart muscle due to insufficient blood supply to the heart muscle usually as a result of a coronary artery becoming blocked by a blood clot formed in response to a ruptured or torn fatty arterial (CDC, 2022). A heart attack also called a myocardial infarction or coronary thrombosis. Other terms may come across include: Coronary heart disease, Ischemic heart

disease, Coronary artery disease, or Angina pectoris (*Claessen et al., 2020*).

Life style is identifying the relative nature of life that requires a comparison between a present and an aspirational or ideal state. The widely accepted definition of life style is: The value assigned to the duration of life as modified by the impairments, functional states, perceptions (*Reavan & Jackson, 2020*). Physical inactivity, smoking, hypertension, diabetes, and high cholesterol all played more of a role in adults with heart attack than genetics. Adopting healthy lifestyle habits should be a top priority for preventing heart attack, even among adults with a family history of the condition (*Lloyd et al., 2021*).

Community health nurses (CHN) play an important role in the prevention and management of heart attacks by helping adults and their families develop positive coping strategies against factors such as lifestyle modification, time management, and stress management, enhancing the adults feelings of life mastery, and preparing them for a healthier lifestyle for life (*Stuart, 2020*).

Significance of the Study

In Egypt, mortality secondary to coronary artery disease is rapidly rising. According to the latest WHO data published in 2020, coronary heart disease deaths in Egypt reached 173, 871 or 32.40% of total deaths. The age-adjusted death rate of 268.11 per 100, 000 adults ranks Egypt 33 in the world (*WHO, 2020*).

Heart attacks constitute a major health problem in the world, and adults with heart attacks face serious problems. It is considered life-threatening; annually, approximately 700,000 adults in the United States experience their first heart attack, and another 500,000 suffer from heart attacks subsequent to the initial one (*Brusca et al., 2022*).

Aim Of The Study

The aim of this study is to assess life style of newly diagnosed adults with heart attacks through:-

1. Assessing knowledge of newly diagnosed adults with heart attacks about heart attacks.

2. Assessing reported practice of newly diagnosed adults with heart attacks related to lifestyle.
3. Assessing health needs and problems of newly diagnosed adults with heart attacks.

Research questions:

- 1- What is the knowledge of newly diagnosed adults with heart attacks about heart attacks ?
- 2- What is the reported practice of newly diagnosed adults with heart attacks related to lifestyle?
- 3- Is there a relationship between knowledge of newly diagnosed adults with heart attacks and their practices?
- 4- Is there a relationship between practice of newly diagnosed adults with heart attacks and their health problems?

Subjects And Methods

Research design:

A descriptive research design was used to conduct this study.

Research setting: The study was conducted at outpatient cardiology clinics at Ain Shams University Hospital in Cairo governorate as it's considered one of the most important hospitals in Cairo that serves a large number of population. The two clinics provide a free different service for heart patients through treatment at the expense of the state or health insurance and part of the treatment is paid less than the prices of private hospitals, also it serves patients from all the governorates.

Subjects of study:

The total number of newly diagnosed adults with heart attacks in the outpatient cardiology clinics at Ain Shams University Hospital during the years of 2017-2018 / 2018-2019 was 720. A Purposive sample of 251 newly diagnosed adults with heart attacks was used in this study according to the power analysis equation.

Inclusion Criteria of the adults :

1. Adults with first time to be diagnosed for heart attack.
2. Age ranged from 30 – 50 years old.

Tools of data collection:

Two tools were used for data collection:

First tool: A structured interviewing questionnaire

It was designed by the investigator after reviewing the related literature and getting the opinion of the supervisors. It was written in a simple Arabic language in the form of closed-ended questions, and divided into five parts:-

Part I:

Socio-demographic characteristics of a newly diagnosed adult with a heart attack; It included 10 questions, regarding the adults' age, gender, marital status, education level, occupation, residence area, number of family members, rooms' numbers, crowding index, and monthly income **Q1- Q10**.

Scoring system of crowded index:

According to (WHO, 2021) the household crowding index (HCI) was defined as the total number of co-residents per household divided by the total number of rooms, excluding the kitchen and bathrooms. The continuous variable was re-grouped into two distinct categories:

- (1) 0-2 residents per room. "Low crowd rate".
- (2) > 2 residents per room. "High crowd rate".

Part II: Knowledge of newly diagnosed adults with heart attacks regarding heart attacks; It was developed by the investigator after reviewing the current, recent, and related literature about the problem of the study, including 29 questions regarding heart diseases, heart attacks, a healthy diet, exercise, and smoking (**Q11- Q40**).

Scoring system:

The answers were checked with a model key answer that was prepared by the investigator. The scoring system was adopted with ratings ranging from 0 incorrect to 1 correct point for each item. The total were summed up and converted to percent scores.

The total score was from 0-29 grades:

- Satisfactory Knowledge $\geq 50\% \geq 14$ degree
- Unsatisfactory Knowledge $0\% - < 50\% < 14$ degree

Part III: Reported practices of newly diagnosed adults with heart attacks related

to lifestyle; This tool was adopted by WHO (2021), and Mohamed et al. (2020). It included 38 questions and was divided into:

- **Nutrition;** it consisted of 14 items.
- **Exercise;** it consisted of 6 items.
- **Smoking;** it consisted of 10 items.
- **Rest and sleeping;** it consisted of 4 items.
- **Compliance with treatment and follow up;** it consisted of 4 items.

Scoring system:

The reported practices of the adults were assessed through 38 close-ended questions. Each question scored 1 for Yes and 0 for No. The total reported practices equal 38 degrees divided into the following:

- **Healthy reported practices,** which represented $\geq 60\% = \geq 22$ degrees.
- **Unhealthy reported practices;** which represented $< 60\% = < 22$ degree.

Part IV: Health needs and problems of newly diagnosed adults with heart attacks ;It included two parts:-

A- Assessment health needs of newly diagnosed adults with heart attacks. This tool was adopted by American Heart Association, (2021). It included 17 questions and divided into;

- **Physical needs;** it included 11 items.
- **Social needs;** it included 3 items.
- **Psychological needs;** and it included 3 items.

Scoring system:

If the needs were Yes, it was scored one, and if the needs were no, it was scored zero. It consisted of 17 questions, equal to 100% (17 degrees). Then the total was summed up and converted into an percent score of $\geq 50\% = \geq 8.5$ degree considered achieved health needs and $< 50\% = < 8.5$ degree considered unachieved health needs.

B-Assessment health problems of newly diagnosed adults with heart attacks; this tool was adopted by CDC, (2022), it included 28 questions and was divided into;

- **Physical problems;** it included 14 items.
- **Social problems;** it included 7 items.

- **Psychological problems;** it included 7 items.

Scoring system:

If the adults were complaining of any problems, it was scored one, and if they were not complaining, the score was zero. It consisted of 28 questions, equal to 100% (28 degrees). Then the total was summed up and converted into an apercent score of $\geq 50\% = \geq 14$ degrees considered present health problems, and $<50\% = < 14$ drgrees considered Not present health problems.

Part V: Lifestyle Questionnaire Sheet (LQS)

A Lifestyle of newly diagnosed adults with heart attacks questionnaire for assessing health aspects of lifestyle for adults with heart attacks. This tool was adopted by *Ware, (2000); Abd-Elwahab et al., (2011); Mohamed et al., (2011); Garin, (2014) and Garcia et al., (2021)*. It was modified by the investigator to meet the aim of the study. It was composed of 33 questions and was divided into:

- **Physical well-being;** it included 12 items.
- **Psychological well-being;** it included 12 items.
- **Social well-being;** it included 5 items.
- **Spiritual well-being;** it included 4 items.

Scoring system:

The scoring system was adopted, with ratings ranging from 0 to 2 points for each item. Each question response was either never 0 grade, sometimes 1 grade or always 2 grades. The total life style was 66 degrees, divided into the following:

- **Healthy life style;** which represented $\geq 60\% = \geq 39$ degrees.
- **Unhealthy life style** which represented $< 60\% = < 39$ degrees.

The Second tool: Medical records, which were collected from the medical file of newly diagnosed adults with heart attacks to assess the health condition of adults with heart attacks, including (vital signs, physical examinations, and lab investigations).

Content validity:

It was ascertained by a group of experts by three professors of community health nursing.

Their opinions were elicited regarding the format, layout, consistency, accuracy, and relevancy of the tools.

Reliability:

Reliability analysis by measuring of internal consistency of the tool through Cronbach's Alpha test.

Items	No. of items	Alpha Cronbach
Knowledge	29	0.93
Practices	35	0.84
Needs	16	0.96
Problems	28	0.86
Lifestyle	33	0.79

II. Operational design

It included operational design for this study consisted of four phases, namely preparatory phase, ethical considerations, pilot study and fieldwork.

The preparatory phase:

This phase included reviewing of current and past, local and international related literature and theoretical knowledge of various aspect of the study using books, articles, periodical magazines and internet to modify tool for data collection. During this phase, the researcher also visited the selected places to get acquainted with the personnel and the study settings. Development of the tools was under supervisors' guidance and experts' opinions were considered.

Ethical considerations:

The research approval was obtained from the ethical committee of the faculty of nursing Ain Shams University. The researcher was clarified the objectives and aim of the study to nurses included in the study before starting. Oral consent was obtained from the patients before inclusion in the study; a clear and simple explanation was given according to their level of understanding. They secured that all the gathered data was confidential and used for research purpose only. The researcher was assuring maintaining anonymity and confidentiality of subjects' data included in the study. The patients were informed that allowed to choose to participate or not in the study and have the right to withdrawal from the study at any time.

Pilot study:

The pilot study was carried out on 10% those represent (25) of adults in order to test the applicability of the constructed tools and the clarity of the questions. The pilot has also served to estimate the time needed for each subject to fill in the questionnaire.

According to the results of the pilot, no corrections and omissions of items were performed, so the adults were included in the study sample.

Field work:

Data were collected through six months, from the beginning of December 2021 to the end of May 2022. The researcher firstly met with the adults at the previously mentioned settings, explained the purpose of the study after introducing herself. Then, individual interviewing was done after obtaining adults consent to participate. The researcher was visiting the study setting 2days / week (Tuesday and Wednesday) at (9AM -2PM). The structured interviewing questionnaire sheet was filled by the investigator from each participant in the study individually. It took about 15-30 minutes to be filled. The aim and the process of the study was explained to the studied adults and collected by using the previously mentioned tools.

III. Administrative Design:

An official permission was obtained by submission of a formal letter issued from the Dean of faculty of nursing, Ain Shams University to the director of El Demerdash hospital/ Ain Shams University. collect the necessary data for current study after a brief explanation of the purpose of the study and its expected outcomes. Using proper channels of communication from authorized personnel

IV. Statistical Analysis:

Data collected from the studied sample was revised, coded and entered using Personal Computer (PC). Computerized data entry and statistical analysis were fulfilled using the Statistical Package for Social Sciences (SPSS) version 24. Data were presented using descriptive statistics in the form of frequencies,

percentages. Chi-square test (X^2) was used for comparisons between qualitative variables. Spearman correlation measures the strength and direction of association between four ranked variables.

Significance of the results:

Highly significant at p-value < 0.01. Statistically significant was considered at p-value < 0.05

Non-significant at p-value \geq 0.05

Results

Table (1): Shows that the mean age of the studied newly diagnosed adults with heart attacks was 37.65 ± 5.22 , 60.6% of them were males, and 76.4% of them were married. Moreover, 46.2% of them received university education and 47.0% of them did not work, 30.7 % of them worked for the private sector. Also, 56.2% of them resided in rural areas, while 62.9 % of the studied subjects reported living in houses with 4 to 6 residents. Regarding rooms, 66.5% of the studied subjects reported living in houses with 4 to 6 rooms, and 60.6% of the studied sample reported a crowding index less than 2 revealing low crowding. Regarding income, 63.3% of the studied subjects reported insufficient income that did not cover treatment expenses.

Figure (1): Shows that more than half (57.2%) of the studied newly diagnosed adults with heart attacks had a satisfactory level of total knowledge, and 42.8% of them had an unsatisfactory level of knowledge.

Figure (2): Shows that more than half (55.6 %) of the studied newly diagnosed adults with heart attacks did unhealthy practices. While (44.4%) of them did healthy practices.

Table (2): Shows that, There was **highly statistically significant relation** between Total Knowledge and Total Practices when p-value was <0.001*

Table (3): Shows that, There was **highly statistically significant relation** between Total Problems and Total Practices when p-value was <0.001*

Table (1): Distribution of newly diagnosed adults with heart attacks according to their socio-demographic characteristics (n=251).

Items	No.	Percentage
Age		
30 - > 35	43	17.1
35 - > 40	127	50.6
40 - < 50	81	32.3
Mean±SD	37.65±5.22	
Gender		
Male	152	60.6
Female	99	39.4
Marital Status		
Single	30	12.0
Married	192	76.4
Widow	29	11.6
Education level		
Don't read and don't write	82	32.7
Primary	41	16.3
Secondary	12	4.8
University	116	46.2
Occupation		
Governmental sector	53	21.1
Private sector	77	30.7
Craft (technician) work	3	1.2
Don't work	118	47.0
Residence area		
Rural	141	56.2
Urban	110	43.8
Number of family member		
1—3	5	2
4—6	158	62.9
7—10	88	35.1
Rooms number		
1—3	5	2
4—6	167	66.5
7—10	79	31.5
Crowding index		
Less than 2	152	60.6
More than 2	99	39.4
Monthly income		
Sufficient	92	36.7
Insufficient	159	63.3

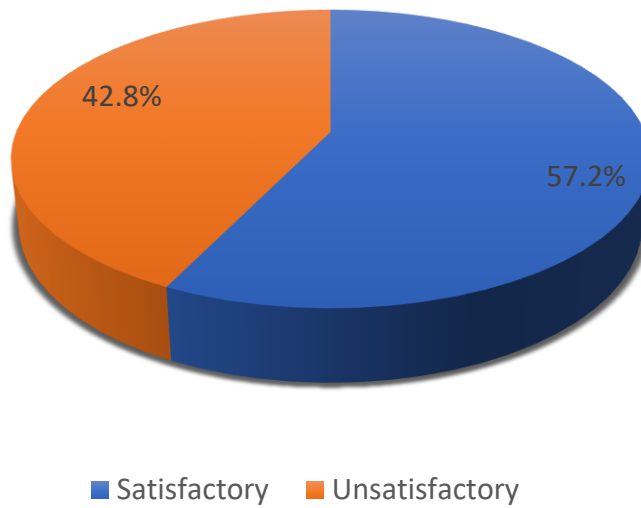
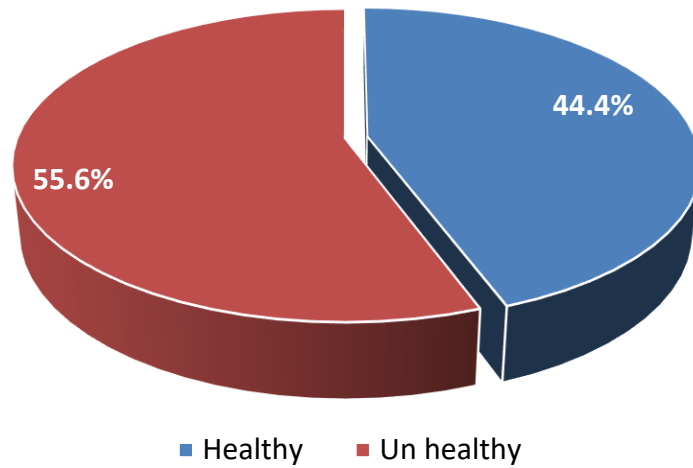


Figure (1) : Percentage distribution of newly diagnosed adults with heart attacks according to their total knowledge regarding heart attacks (n= 251).

Reported Unhealthy Practice



Reported Healthy Practice

Figure (2): Percentage distribution of newly diagnosed adults with heart attacks according to their total reported practices regarding heart attacks (n= 251)

According to research question No3: Is there a relationship between Knowledge of newly diagnosed adults with heart attacks and their Practices?

Table (2): Relation between total Knowledge and total Practices among newly diagnosed adults with heart attacks (n=251).

Total Knowledge	Total Practices						Chi-square	
	Healthy		Un healthy		Total		X ²	P-value
	N	%	N	%	N	%		
Satisfactory	99	39.4	44	17.5	143	57.0	81.451	<0.001*
Unsatisfactory	13	5.2	95	37.8	108	43.0		
Total	112	44.6	139	55.4	251	100.0		

According to research question No4: Is there a relationship between practice of newly diagnosed adults with heart attacks and their health problems?

Table (3): Relation between total Problems and total Practices among newly diagnosed adults with heart attacks.

Total Practices	Total Problems						Chi-square	
	Present		Not Present		Total		X ²	P-value
	N	%	N	%	N	%		
Healthy	43	17.1	69	27.5	112	44.6	46.727	<0.001*
Un healthy	112	44.6	27	10.8	139	55.4		
Total	155	61.8	96	38.2	251	100.0		

Discussion

As regard to socio-demographic characteristics of the present study result showed that the mean age of the studied newly diagnosed adults with heart attack was 37.65 ± 5.22 (Table 1).

This result in accordance with *Garrido et al., (2020)* in a study among 120 participant in Spain entitled "Recognizing a Heart Attack: Adults' Knowledge of Cardiovascular Risk Factors and Its Relation to Prehospital Decision Delay in Acute Coronary Syndrome" and showed that 48% of them their age was less than 60 years.

As regard to gender, the current study result explained that less than two thirds of them were males and more than three quarters of them were married (Table, 1). This result was similar with *Fukuoka & Oh, (2022)* who applied study among 80 adults in United States and entitled "Perceived Heart Attack Likelihood in Adults with a High Diabetes Risk" and found that 52.5% highly percentage of the studied adults were married while 71.3% of them were women.

As regard to working, the current study result noted that less than half of them didn't work, less than one third of them worked at private sectors (Table, 1). This result is contrasted with *Fukuoka & Oh, (2022)* who found that 57.5% of them were employed.

Regarding to residence, the current study result showed that more than half of them resided in rural areas, and less than two thirds of studied sample reported a crowding index less than 2 revealing low crowding. Regarding to income, the current study result found that vast the majority of studied subjects reported in

sufficient income that didn't cover treatment expenses (Table 1).

This result was in accordance with *Mohamed et al., (2020)* who applied study in Egypt among 85 adults studied "Effect of Educational Guidelines on Self-Efficacy among Myocardial Infarction adults" and showed that 75.3% of them had insufficient income. While this result is contrasted with *Negesa et al., (2020)* who applied a study among 287 adults in Ethiopia entitled "Adults' knowledge on cardiovascular risk factors and associated lifestyle behaviour in Ethiopia" and found that 90%, a high percentage of the studied adults resided in rural areas.

Concerning the total knowledge regarding heart attacks, the current study's results revealed that more than half of the studied sample had satisfactory level of the total knowledge (Figure1).

This result is similar to that of *Mohamed et al., (2020)*, who showed that the level of knowledge regarding Myocardial Infarction was unsatisfactory in the high percentage of adults, while this result is contrasted with *Said et al., (2022)*, who conducted a study in Egypt among 60 adults entitled "Assessment of Adults' Knowledge and Lifestyle Before Coronary Artery Bypass Grafting Surgery," and found that 33.35% of the study subject had satisfactory level of the total knowledge.

Concerning the total reported practices regarding heart attacks, the current study's results reported that more than half of the studied sample did unhealthy practices. However, less than half of them did healthy practices (Figure2).

This result is in the same line with *Koohi et al., (2020)*, who applied a study in Iran among 300 participants; entitled "Knowledge,

Attitude, and Practice Regarding Cardiovascular Diseases in Adults Attending Health Care Centers in Tehran, Iran," and found that the studied patients had unsatisfied level of practices. Also this result is similar to that of *Nyagasare et al., (2022)*, who conducted a study among 384 adult patients in Rwanda; entitled "Knowledge, Attitudes and Practices about Cardiovascular Diseases among Adult Patients Attending Public Health Centers," and found that 70%, a high percentage of the respondents had negative practices towards cardiovascular diseases.

Concerning the relation between the total knowledge and total practices among newly diagnosed adults with heart attacks, the current study's results explained that there was a highly statistically significant correlation between the total knowledge and total practices when p-value was $<0.001^*$ (**Table 3**). This result is similar to that of *Machalani et al., (2022)*, who mentioned that there was a positive correlation between knowledge and practice (p-value <0.001 , $r = 0.244$).

Conclusion

Based on the research questions and the findings of the current study; it can be concluded that :

The mean age of the studied newly diagnosed adults with heart attacks was 37.65 ± 5.22 , 60.6% of them were males. More than half of the studied newly diagnosed adults with heart attacks had a satisfactory level of total knowledge. More than half of the studied newly diagnosed adults with heart attacks had unhealthy reported practices. There was a highly statistically significant difference between age, education, occupation and residence and the total health problems. There was a positive correlation between total knowledge and total practices. There was a negative correlation between total problems and total practices. There was a highly statistically significant relation between total knowledge and total practices, and there was a highly statistically significant relation between total problems and total practices.

RECOMMENDATIONS

Based on the current study finding the following recommendations were proposed:

1. Health education programs should be applied to increase adults' knowledge regarding lifestyle.
2. Educational media, including: booklets, videos, posters, and CDs, about heart attacks should be available for all adults with heart attacks in the outpatients cardiology clinics at Ain Shams University Hospital.
3. A simple written treatment guideline for adults with heart attacks should be available in the outpatient cardiology clinics that provide care and be provided to newly admitted adults.
4. Counseling program for adults about causes, and consequences of heart attacks among adults.
5. Further research studies are needed to focus on measuring the quality of life for adults with heart attacks.

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