Assessment of social and emotional responses of patients regarding hearing loss pre tympanoplasty

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Abstract

Background: Tympanoplasty is defined as surgical procedure to eradicate infection and restore the function of the middle ear. It is the commonest procedure performed in patients with chronic otitis. **Aim of the study**: The study aimed to assess social and emotional responses of patients regarding hearing loss pre tympanoplasty. **Study design:** Descriptive research design was utilized. **Setting:** The present study conducted in otolaryngology department and outpatient clinic at Benha University Hospital. ,Qalyubia , Egypt. **Subject:** Purposive sample of ٨٠ adult patients with tympanoplasty, were included in the study **Tools of data collection:** Two tools were used in the study **Tool I** Structured interview questionnaire, consist of two parts **Part ١**: Patients' personal data, **Part ٢**: Patients' health history, **Tool II** Hearing Handicap Inventory for Adults (HHIA) Scale**.** **Results:** Results of the current study revealed that regarding social responses ٨٠.٠**%**of studied patients' had mild to moderate handicap while٢٠.٠٪ of studied patients' no had handicap, regarding emotional responses ٨١.٢**%**of studied patients' had mild to moderate handicap while٣.٨٪ of studied patients' had significant handicap. **Conclusion:** there was an impairment of social and emotional response regarding hearing loss **Recommendation:** Conducting training courses to the patients including basic information to improve quality of life post tympanoplasty.

Key Words: social and emotional responses ,tympanoplasty

Introduction

Tympanic membrane perforation is a tear in the tympanic membrane leading to a connection between the external auditory canal and the middle ear. This can be caused by infection, trauma, or rapid changes in pressure leading to sudden otalgia, otorrhea, tinnitus, and vertigo **(Begh et al., ٢٠٢١).**

Tympanic membrane perforation is a prevalent problem in otolaryngology. Based on the severity and duration of lesions in the TM, TMP can be categorized into acute and chronic TMPs. In acute TMPs, the healing process occurs spontaneously within a few months. If the injury or damage persists for a long time, it leads to formation of chronic TMPs, which require surgical procedures (myringoplasty or tympanoplasty) to repair. In some cases, small TMPs may be asymptomatic and do not require any therapeutic intervention **(Selaimen et al., ٢٠٢٢).**

Perforation from a foreign body (FB) or ear cleaning is from direct penetration to the eardrum itself, usually in the area of the pars tense. The pars tense is the largest and thinnest area of the TM, only a few cell layers thick, located in the inferior and anterior region of the eardrum. Therefore, it is the most commonly and easily torn area, especially secondary to blunt and noise trauma. Otitis media causes necrosis and ischemia of the TM leading breakdown and rupture. The most common region for rupture is in the central membrane, followed by the anterior central and posterior central regions, correlating to the pars tense being most frequently injured (**Munilson, et al.,٢٠٢٤).**

Tympanic membrane perforations have multiple causes such as a complication of infection (acute otitis media), barotrauma from explosions, scuba diving, or air travel, sudden negative pressure, head trauma, noise trauma, insertion of objects into the ear, or iatrogenic from attempting foreign body or cerumen removal. With acute otitis media (AOM). There are risk factors for TM rupture, as well, such as prior ear surgeries, severe otitis externa, and prior or current otitis media **(Bojanović ,et al.,٢٠٢٣).**

Patients experiencing tympanic membrane perforation usually complain of sudden onset of pain accompanied by hearing loss, bloody otorrhea, hearing loss, vertigo, or tinnitus. Otalgia, vertigo and tinnitus. The physical exam must include otoscopy for direct visualization and a general assessment of vestibular function and hearing. A thorough neurologic examination is required, as well, to rule out neurologic causes of tinnitus, hearing loss, and vertigo **(Vivas & Hanson, ٢٠٢٣).**

Surgical management of tympanic membrane perforation; tympanoplasty, is a surgical treatment to repair the perilymph fistula. During a tympanoplasty, your eardrum will be reconstructed from cartilage taken from your body. Tympanoplasty is microsurgery surgery using a microscope or endoscope to fix holes in the eardrum that do not heal on their own. Tympanoplasty is surgery to treat ruptured eardrums. Your healthcare provider may treat your ruptured eardrum with ear drops or antibiotics. If your eardrum doesn't heal, the patient provider may perform tympanoplasty, accessing the patient eardrum and patching the hole (**Kleinjung & Londero,٢٠٢٤).**

Significance of the study:

According to the ٢٠٢١ World Health Organization (WHO) World Report on Hearing, the number of people with hearing loss worldwide exceeds ١.٥ billion. Hearing loss has become the third-largest type of disability globally. The WHO report has recognized the harm caused by hearing loss and the importance of universal hearing healthcare **(Wang et al., ٢٠٢٥).** A national household survey conducted in Egypt estimated the prevalence of hearing loss at ١٦.٠ %, with rates increasing significantly with age. The highest prevalence was found among individuals aged ٦٥ years and older (٤٩.٣ %) **(Saber et al., ٢٠٢٥).**

Aim of the study: -

The study aimed to assess social and emotional responses of patients regarding hearing loss pre tympanoplasty

Research questions:

١-What are social responses of patients' regarding hearing loss pre tympanoplasty?

٢-What are emotional responses of patients' regarding hearing loss pre tympanoplasty?

Research design:

Descriptive research design was utilized

Setting:

This study was conducted in otolaryngology department and outpatient clinic at Benha University Hospital, Benha, Qalyubia Governorate, Egypt. Otolaryngology department is in the fourth floor, that includes one room contains six beds; three beds for male patients and three beds for female patients and there was a room in second floor in hotel building to follow and care of patients post tympanoplasty (work schedules of outpatient clinic on Saturday, Tuesday and Thursday /week from ١١ pm to ٣pm).

Sample:

Purposive sample of ٨٠ adult patients with tympanic perforation, from both sexes and their age ranging from ٢١-٦٠ years old. Who are able to communicate and agree to participate in the study.

Exclusion criteria

-The study excluded patients with cancer

-Definite diagnosis of cholesteatoma and ossicular erosion.

-Loss of consciousness.

Tools of data collection:

Two tools were used to collect data for this study as follows:

Tool I: Structured interview questionnaire:

It was designed by the researcher through reviewing of recent related literatures & scientific references **(Indorewala et al,. ٢٠١٥, Dogan& Bayraktar, ٢٠١٧ &Carniol et al,. ٢٠١٨)** and it was consisted of ٣١multiple choice questions and divided into two parts as the following:

Part (١): Patients' personal data:

It aimed to assess patients' personal data. It included ٧ questions about age, gender, residence, marital status, level of education, and occupation.

Part (٢): Patients' health history: It included ٣ questions about medical and surgical history as diagnosis, patient' present and past history, patient' complaint.

Tool II: Hearing Handicap Inventory for Adults (HHIA) Scale:

This tool was adopted from **(Cassarly et al., ٢٠٢٠),** and designed by the researcher after reviewing literature and jury opinions. It aimed to assess patients' behavior and emotional responses of the individual regarding this hearing loss. It included ٢٥ closed ended questions about social and emotional responses. The revised hearing handicap inventory and screening tool based on psychometric reevaluation of the hearing handicap inventories for the elderly and adults.

Scoring system

The scale was graduated from ٠ to ٢ where zero referred to if yes, (١) referred to if sometimes, (٢) referred to if No.

Validity and reliability of tools

Tools' validity:

The tools and the instructions booklet were revised and ascertained by a panel of five experts from medical surgical nursing field, Faculty of Nursing, Benha University. Jury involved two professors and three assistant professors to test the relevance, comprehension, clarity, and applicability of tools' content. According to their opinion minor modifications of tools were applied.

Tools' reliability:

Tools' reliability was tested statistically using Cronbach's alpha coefficient to assure that the tools were reliable before data collection. Reliability of **tool I** was which was ٠.٧٠٩. Reliability of **tool II** was ٠.٦٢٤.

Pilot study

Pilot study was conducted on ١٠٪ of the study sample (٨ patients) with tympanoplasty of the total sample size in order to test feasibility, clarity and applicability of the tools & booklet. Also, the pilot study had served to estimate the needed time for each patient to fill the questionnaires, minimal

modification done, so the patients who were included in the pilot study were excluded from the study sample and replaced by others, it was done two months prior to data collection.

Ethical consideration:

The research approval was approved from Scientific Research Ethics Committee in Faculty of Nursing, Benha University with code number (REC-MSN-D١). An official permission obtained from medical director of Benha University Hospital and head nurse of surgical departments (male and female surgical department) and outpatient clinic at Benha University Hospital before starting the study after explanation of the purpose of the study.

The aim of this study was explained to patients and they were assured that all information would be confidential and it would be used for research purpose only. Verbal and written consent was obtained from each participant enrolled into the study. Patients were informed that they are allowed to choose to participate or not in the study and they have the right to withdraw from the study at any time without giving any reasons.

Fieldwork :(Data collection)

Data were collected in ٨ months (from October, ٢٠٢٤ to the end of May, ٢٠٢٥). After taking proper permission from Hospital director, the researcher visited otolaryngology department and outpatient clinic at Benha University Hospital, Saturday, Tuesday and Thursday /week from ١١ pm to ٣pm according to hospital policy.

The researcher started by introducing herself to the patients, the aim of the study and the components of the tools were explained to the patients who agreed to participate in the study prior to any data collection.

During this phase the researcher interviewed each patient after his/her admission to the Hospital in the patients' room to maintained privacy, to collect baseline data on personal data and medical data using tool I for studied patients' and time required to fill the questionnaire was ranged from ١٠-١٥ minutes. The researcher assessed for hearing handicap using tool II and time required to fill the questionnaire was ranged from ١٠-١٥ minutes.

Results

Table (١) shows that, the age of ٥٠.٠٪ of them was ٤٠-<٥٠ years with a mean age of ٤٥.٧٤ ± ٧.٦١٣ years. Concerning gender, ٧٠.٠٪ of the studied patients were female. As for educational level, ٥٠.٠٪ of the studied patients had intermediate education, and working, as an employee as reported by ٦٠.٠٪ of them, moreover ٥٥.٠ % of them were married and residing in rural area.

Table (٢) shows that, concerning current patient's history, ٦٥.٠٪ of them were diagnosed with ear drum perforation since more than three weeks, ٧٥.٠٪ had undergone open surgery and the Length of hospital stay after surgery was ٢-٣ days as reported by ٨٠.٠٪ of the studied patients. Moreover ٣٠.٠٪ had experienced ringing in the ears, severe pain, and difficulty breathing as a complication after surgery. Regarding comorbid disease, ٦٥.٠٪ reported having chronic illness especially diabetes mellitus and hypertension among ٣٠.٨٪ of them. Whereas ١٠٠.٠٪ had no other ear diseases.

Table (٣) displays that, ٨٠.٠% of studied patients' having hearing problem cause to use the phone less often than would like, while٣٥.٠٪ of studied patients' having hearing problem cause to talk to family members less often than would like, also ٦٠.٠٪ of studied patients' sometimes having hearing problem cause to avoid groups of people and difficulty when attending a party.

Table (٤) displays that, ٦٥.٠٪ of studied patients' having hearing problem cause to feel uncomfortable when talking to friends, while٣٠.٠٪ of studied Patients' having hearing problem cause to be nervous, also ٦٥.٠٪ of studied patients' sometimes having hearing problem cause to be frustration when talking to family members, feeling handicapped and cause nervousness.

Figure (١) displays that ,٨٠.٠**%**of studied patients' had mild to moderate handicap while٢٠.٠٪ of studied Patients' no had handicap.

Figure (٢) displays that, ٨١.٢**%**of studied patients' had mild to moderate handicap while٣.٨٪ of studied patients' had significant handicap.

Part I: Personal data and health history of the studied patients

Table (١): Frequency distribution of the studied patients regarding personal data (n=٨٠).

Patient's personal data	(No.)	%
Age (in years)		
21- <30 year	12	15.0
30-<40 year	20	25.0
40-<50 year	40	50.0
50- 60 year	8	10.0
Mean ± SD	45.74 ± 7.613	
Gender		
Male	24	30.0
Female	56	70.0
Marital status		
Single	16	20.0
Married	44	55.0
Widowed	8	10.0
Divorced	12	15.0
Educational Level		
Can't read and write	12	15.0
Compulsory education	4	5.0
Intermediate education	40	50.0
University education	24	30.0
Working status		
Working	40	50.0
Not working	40	50.0
If yes, the work is (n= 40)		
Employee	24	60.0
Farmer	8	20.0
Mannual works	8	20.0
Residence		
Rural	44	55.0
Urban	36	45.0

Table (٢): Frequency distribution of the studied patients according to their health history (n=٨٠).

Items	Patients' health history	(No.)	%
	Current patient history		
Time since diagnosis with ear drum perforation			
	Two weeks	٨	١٠.٠
	Three weeks	٢٠	٢٥.٠
	More than three weeks	٥٢	٦٥.٠
Presence of comorbid disease	Previous history		
	Yes	٥٢	٦٥.٠
	No	٢٨	٣٥.٠
If yes, the disease is (n=٥٢) #			
	Diabetes mellitus	١٦	٣٠.٨
	Hypertension	١٦	٣٠.٨
	Coronary heart disease	١٢	٢٣.١
	Liver disease	٨	١٥.٤
	Respiratory disease	٨	١٥.٤
Suffer from other ear diseases	Suffer from other ear diseases		
	No	٨٠	١٠٠.٠

(#) Not mutually conclusive

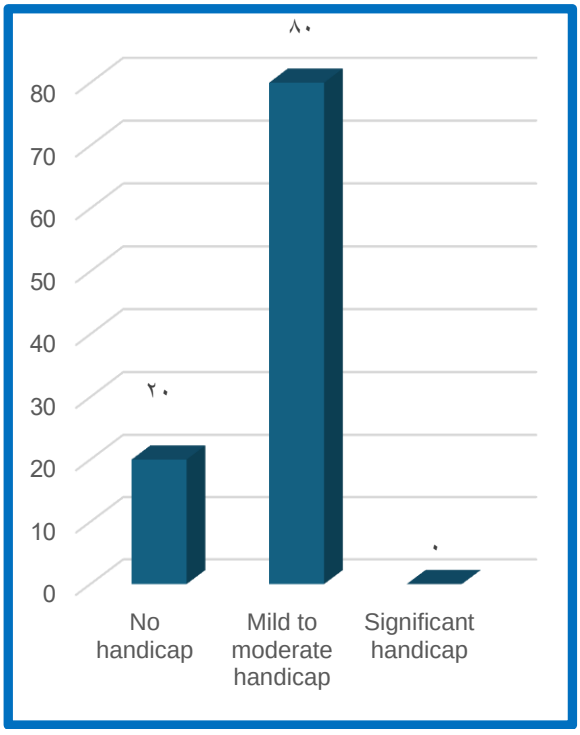
Table (٣): Frequency distribution of studied Patients' according their social responses in relation to hearing loss (n=٨٠).

Patients' Social responses	Yes	Sometimes	No
	No. (%)	No. (%)	No. (%)
Hearing problem cause to use the phone less often than would like	٦٤(٨٠.٠)	١٢(١٥.٠)	٤(٥.٠)
Hearing problem cause to avoid groups of people	٣٢(٤٠.٠)	٤٨(٦٠.٠)	٠(٠.٠)
Hearing problem cause to difficulty when attending a party	٣٢(٤٠.٠)	٤٨(٦٠.٠)	٠(٠.٠)
Hearing problem cause to difficulty when visiting friends, relatives or neighbors	٣٦(٤٥.٠)	٤٤(٥٥.٠)	٠(٠.٠)
Hearing problem cause to difficulty in the movies or theater	٤٤(٥٥.٠)	٣٦(٤٥.٠)	٠(٠.٠)
Hearing problem cause to difficulty when listening to TV or radio	٣٢(٤٠.٠)	٤٨(٦٠.٠)	٠(٠.٠)
Hearing problem cause to go shopping less often than would like	٤٠(٥٠.٠)	٢٨(٣٥.٠)	١٢(١٥.٠)
Hearing problem cause to talk to family members less often than would like	٢٨(٣٥.٠)	٥٢(٦٥.٠)	٠(٠.٠)
Hearing problem cause difficulty when in restaurant with friends or relatives	٤٨(٦٠.٠)	٣٢(٤٠.٠)	٠(٠.٠)
Hearing problem cause difficulty hearing /understanding coworkers, clients or customers	٤٨(٦٠.٠)	٣٢(٤٠.٠)	٠(٠.٠)
Hearing problem cause to visit friends, relatives or neighbors less often than would like	٥٢(٦٥.٠)	٢٤(٣٠.٠)	٤(٥.٠)
Hearing problem cause to listen to TV or radio less often than would like	٤٠(٥٠.٠)	٣٦(٤٥.٠)	٤(٥.٠)

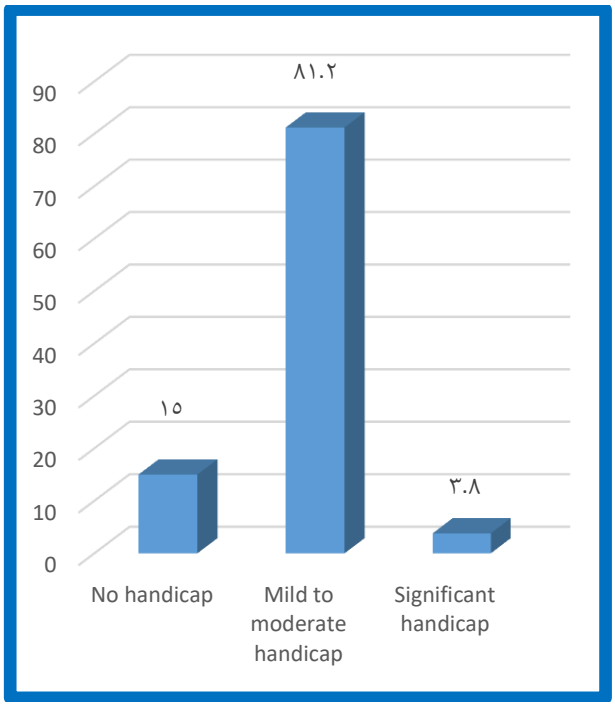
Table (٤): Frequency distribution of studied Patients' according their emotional responses in relation to hearing loss (n=٨٠).

Patients' emotional responses			
	Yes	Sometimes	No
	No. (%)	No. (%)	No.(%)
Hearing problem cause to feel embarrassed when meeting new people	٣٦(٤٥.٠)	٤٠(٥٠.٠)	٤(٥.٠)
Hearing problem make irritable	٤٠(٥٠.٠)	٤٠(٥٠.٠)	٠(٠.٠)
Hearing problem cause to be frustrated when talking to family members	٢٨(٣٥.٠)	**٥٢(٦٥.٠)**	٠(٠.٠)
Feel handicapped by a hearing problem	٢٨(٣٥.٠)	**٥٢(٦٥.٠)**	٠(٠.٠)
Hearing problem cause to be nervous	٢٤(٣٠.٠)	**٥٢(٦٥.٠)**	٤(٥.٠)
Hearing problem cause to have arguments with family members	٤٠(٥٠.٠)	٤٠(٥٠.٠)	٠(٠.٠)
Hearing problem cause to want to be by the self	٤٤(٥٥.٠)	٣٢(٤٠.٠)	٤(٥.٠)
Problem or difficulty with hearing upset at all	٣٢(٤٠.٠)	٤٠(٥٠.٠)	٨(١٠.٠)
Hearing problem cause to feel depressed	٢٨(٣٥.٠)	٤٨(٦٠.٠)	٤(٥.٠)
Hearing problem cause to feel uncomfortable when talking to friends	**٥٢(٦٥.٠)**	٢٨(٣٥.٠)	٠(٠.٠)
Hearing problem cause to feel left out when are with a group of people	٤٤(٥٥.٠)	٣٦(٤٥.٠)	٠(٠.٠)
Feel that any difficulty with hearing limits or hamper personal or social life	٤٨(٦٠.٠)	٣٢(٤٠.٠)	٠(٠.٠)
Hearing problem cause to feel frustrated when talking to coworkers, clients or customers	٤٤(٥٥.٠)	٣٦(٤٥.٠)	٠(٠.٠)

(figure١) Distribution of the studied patients regarding to their total social responses in relation to hearing loss (n=٨٠).



(figure٢) Distribution of the studied patients regarding to their total emotional responses in relation to hearing loss (n=٨٠).



Discussion

Concerning the age, the current study findings showed that half of the studied patients were in age was ٤٠-<٥٠ years with a mean age of ٤٥.٧٤ ± ٧.٦١٣ years.

From the researcher point of view, this result may be because in this age patients are more susceptible to eardrum perforation because tissue weakness with age ischemic blood supply poor circulation in the can lead to slower tissue healing, making the eardrum more fragile and more susceptible to perforation when injured or infected. The immune system weakens with age, increasing the risk of middle ear infections. This infection can lead to increased pressure inside the ear, causing a perforated eardrum. improper use of ear cleaning tools, older adults sometimes use cotton swabs or sharp tools unsafely due to poor eyesight or balance issues, which can cause accidental puncture with age, the body's tissues, including the eardrum, lose their elasticity, making them less able to with stand pressure or shock., including deterioration in hearing.

This result was consistent with **Tshifularo(٢٠٢٢),**who conducted a study

entitled " Tympanoplasty success based on surgeon and patient-reported outcomes perspectives: a ١٠-year review in a tertiary center "and stated that majority of patients were between the age of ٢٦ and ٤٥ years.

Also, this result was consistent with **Redkar, et al., (٢٠٢٥),** who carried out a study entitled " Age-related impact on tympanoplasty results in adult individuals "and stated that half of the studied patients were more than ٤٠ years.

Furthermore,this result was accordance, **Salvador, et al .,(٢٠٢١),**who conducted a study entitled " Type I tympanoplasty: surgical success and prognostic factors " and reported that patient age ranged from ١٨ to ٦٩ years, with a mean age of ٣٩.٧ ± ١٤.١ years.

Also, this result was accordance **Muniraju&Hegde(٢٠٢٠),**who conducted a study entitled " A comparative study of preoperative and postoperative hearing after type I tympanoplasty using temporalis fascia graft at Dr. BR Ambedkar Medical College, Bengaluru "and found half of the studied patients were in age was ٤٠-<٥٠ years.

While this result was in the contrary with, **Jaiswani, et al., (٢٠٢١)**,who conducted a study entitled " Does age of patient impact the outcome of tympanoplasty? A study in a tertiary care center " and reported that majority of studied patients were ٢٠ years.

Owing to sex, result of the present study revealed that about more than two third of the studied patients were females ,from the researcher point of view, due to the frequent and sometimes incorrect use of ear cleaning tools such as cotton swabs, which causes a direct scratch or perforation of the eardrum, pushing the wax inwards and causing blockage and inflammation, leading to weakness and rupture of the eardrum.

This result was supported by **Al Busaidi & Al Rahbi(٢٠٢٤),**who conducted a study entitled " Outcome of type ١ tympanoplasty in Al Nahdha Hospital and influencing factors: A retrospective study ". Who found that more than half of patient were female.

This result was supported by **Tshifularo, (٢٠٢٢),**and reported that more half of the studied patients were female.

In addition, **Arndt, et al., (٢٠٢٥),** who conducted study entitled " Long-term outcomes of tympanoplasty with persistent air-bone gap in adults with chronic otitis media: hearing, health care utilization and quality of life "and reported that three quarters of the studied patients were female.

Furthermore, **Asfaha, et al., (٢٠٢٥),** who conducted study entitled " Tympanoplasty in Northern Ethiopia: success rates, failure factors, and audiometric improvements " and reported that two third of the studied patients were female

While this result was in the contrary with **Salvador, et al., (٢٠٢١),** who reported that majority of the studied patients were male.

Regarding marital status, results of the present study revealed that more than half of the studied patients were married. From the researcher point of view, this result may be because due to lack of interest in personal health after marriage and preoccupation with family responsibilities, they may neglect ear symptoms such as secretions or pain, which leads to the development of a perforated eardrum.

This result was agreed with **Badruddin, et al., (٢٠٢١)**, who conducted study entitled " Time to success and Its prognostic factors among patients with myringoplasty surgery "and reported that three fifth of the studied patients were married.

Concerning the educational level, results of the present study illustrated that half of the studied patients had intermediate education, from the researcher point of view, this result may be because lack of health awareness, People with average education may not have the same level of medical or health knowledge, which causes them to use inappropriate ear cleaning tools (such as cotton swabs, pins, or even pens), Ignore the symptoms of ear infections or fail to recognize their seriousness, leading to their progression and perforation of the eardrum. Not knowing the difference between a simple infection and a condition requiring immediate medical treatment. Lack of regular checkups, some people only see a doctor when the problem worsens. Thus, ear infections may

develop without early treatment, leading to fluid accumulation behind the eardrum and increased pressure, leading to a perforation.
This result was in accordance with **Ibrahime, et al., (٢٠٢١)**, who conducted study entitled " Effect of designed nursing guidelines on outcomes of patients undergoing tympanoplasty"and reported that majority of the studied patients had secondary education.
Owing to the occupation, results of the present study illustrated that three fifth of the studied patients working, as an employee. from the researcher point of view, this result may be because many employees use headphones or earbuds for extended periods of time while working, especially in call centers office jobs that require continuous calls or online meetings this can lead to excessive sound pressure in the ear recurrent ear canal infections due to poor ventilation or pollution, which can later lead to a perforated eardrum. Working in environments with noise or air pressure such as factory employees, airports workshop these environments may cause sudden pressure changes or loud noises that affect the middle ear and may lead to a ruptured eardrum if appropriate hearing protectors are not used, neglecting to see a doctor, employees are often busy and stressed at work.

This result was in accordance with,**Ma, et al., (٢٠٢٤),** who conducted study entitled " Therapeutic effect of tympanoplasty on patients with chronic otitis media with tinnitus and influencing factors" and reported that majority of the studied patients working.
While this result was in the contrary with **Ibrahime, et al ., (٢٠٢١),** who reported that majority of the studied patients not working
Also, this result was in the contrary with **Li, et al(٢٠٢٠),**who conducted a study entitle" Analysis on the correlation between eustachian tube function and outcomes of type I tympanoplasty for chronic suppurative otitis media"and found that large percentage of patients undergoing tympanoplasty was not work.
Pertaining residence, results of the present study illustrated that more than half of the studied patients resided in rural areas. From the researcher point of view health awareness in rural areas, awareness of ear health problems and the importance of treating ear infections early is reduced. Many people ignore the symptoms of ear infections, which can lead to the development of inflammation and a perforated eardrum. Some people in rural areas may use traditional or non-medical treatments, such as inserting oils or herbs into the ear, which can cause direct damage to the eardrum. Delay in seeking treatment, poor hygiene and water, Poor environmental conditions, such as water pollution and poor personal hygiene, can lead to increased rates of infections, including ear infections.
This result was in accordance with **Younis, et al., (٢٠٢٥)**, who conducted study entitled " outcomes of myringoplasty operation in dry and wet ears in adults "and reported that three fifth of the studied patients resided in rural areas.

Current patient history

Owing to time since diagnosis with ear drum perforation, results of the present study illustrated nearly two third of the studied patients were diagnosed with ear drum perforation since more than three weeks, this result was in accordance with **Charoensawatsiri, et al.,(٢٠٢٥),** who conducted study entitled " Incidence of tympanic membrane perforation affected by intratympanic steroid injection"and found that majority of the studied patients were diagnosed with ear drum perforation since more than four weeks.
Owing to presence of comorbid disease, results of the present study illustrated nearly two third of the studied patients had reported having chronic illness especially diabetes mellitus and hypertension. From the researcher point of view diabetes causes damage to small blood vessels, especially in the middle ear, this reduces blood flow to the eardrum, making it more fragile and less able to resist infection or heal, also diabetes causes slow wound healing even a small perforation in the eardrum may not heal in a diabetic patient because tissue regeneration is impaired. The middle ear contains a delicate

network of blood vessels so hypertension Increased intravascular pressure.

This result was in accordance with **Sajid, et al., (٢٠٢١)**,who conducted study entitled"Magnitude of diabetes mellitus in patients of sudden sensorineural hearing loss and its effect on corticosteroid therapy " and illustrated that most of the studied patients had diabetes mellitus.

Also, this result was in accordance with **Malas, et al (٢٠٢٥),** who conducted a study entitled " Fascia tympanoplasty: a tertiary center experience"and found that two third of patients had a documented history of diabetes mellitus and majority of patients had a diagnosis of hypertension.

Furthermore, this result was in accordance with, **Tshifularo,(٢٠٢٢),**who found that factors that were statistically insignificant in affecting graft take such as the presence of comorbidities such as diabetes mellitus

This result was in the contrary with **Arndt, et al., (٢٠٢٥).** conducted study entitled " Long-term outcomes of tympanoplasty with persistent air-bone gap in adults with chronic otitis media: hearing, health care utilization and quality of life" and illustrated that most of the studied patients no had diabetes mellitus.

Regarding suffer from other ear diseases, results of the present study illustrated most of the studied patients had no other ear diseases, this result was in accordance with **Devi, et al., (٢٠٢١),** who conducted study entitled " Effect of type ١ tympanoplasty on the quality of life of patients suffering from chronic otitis media (safe type) "and illustrated that majority of the studied patients had no other ear diseases.

Pertaining social responses in relation to hearing loss, results of the current study revealed that majority of studied patients' having hearing problem cause to use the phone less often than would like, also three fifth of studied patients' sometimes having hearing problem cause to avoid groups of people and difficulty when attending a party. This results came in agreement with **Henderson, et al., (٢٠٢٥),** who conducted a study entitled" A qualitative systematic review of the impact of hearing on quality of life. "and illustrated hearing conditions have a considerable impact on numerous domains of (health-related) quality of life, both hearing condition specific domains and more generally, which can be categorized into three main areas: Physical, Mental and Social. Also, this result was in accordance with **Nawal, et al., (٢٠٢٤),**who conducted a study entitled " The Emotional and social impact of hearing loss", and found that majority of studied patients' had mild to moderate handicap

Owing to emotional responses in relation to hearing loss, almost two thirds of studied patients' having hearing problem cause to feel uncomfortable when talking to friends, also almost two thirds of studied patients' sometimes having hearing problem cause to be frustrated when talking to family members , feel handicapped by a hearing problem , Hearing problem cause to be nervous.This findings were agreed with **Alqudah, et al., (٢٠٢٤)** who conducted a study entitled" Impact of hearing impairment on the mental status of the adults and older adults in Jordanian society" and showed that psychological disabilities associated with hearing loss in the adult.

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