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**Evaluation of the Prosthetic Eye Services - Gaza
Governorate**

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**Evaluation of the Prosthetic Eye Services - Gaza
Governorate**

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Dedication

I dedicate this work to my parents who gave me unconditioned love, engorgement and support, to my sincere wife, to my children, and to everyone who contributed in bringing this study to reality.

Thanks are also extended to my brothers and sisters, to all my friends and my beloved ones with whom I spent the good times and learned a lot.

SabriHajaj

Declaration

I certify that this entire thesis, submitted for the Degree of Master, is the result of my own work, except where otherwise acknowledged, and that this study (or any part of the same) has not been submitted for a higher degree or qualification to any other university or institution.

Signed.....

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.../.../...

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Abstract

Prosthetics eye (PE) affects at multidimensional aspects of life; physical, pathological, psychological, financial and social aspects. These aspects contribute highly to increasing the quality of life, productive abilities and emerging them in normal manner within their families and communities such as people without disabilities.

This study is the first study in Gaza strip which aims mainly to evaluate the effects of prosthetic eye service in Gaza Strip as a rehabilitation service for PE patients regarding to patients' socio-demographic factors, patient's satisfaction, and patients' quality of life, current needs for PE service and concerns of prosthetic eyes patients.

The study design was triangulated, cross sectional study. The study includes two populations. The first population for quantitative part is all patients that lost their eyes with (customer and readymade) or without (No PE) prosthetic eyes (with 87.3 % a response rate) and covered through interview approval questionnaires for PE patients.. The second population for qualitative part is four key informant managers at Governmental, and NGO's organizations covered through interview and the patients' perceptions are expressed through a group of open ended questions included in the questionnaire.

Study place was mainly in two places; governmental hospital – Al Nasser ophthalmic hospital and NGOs center – Al Radwan medical center for ocular prosthesis.

Statistical Package for the Social Sciences Program (SPSS) has been used for data analysis.

Results: regarding the quality of life for PE patients according to WHO Standards were as the following; the total weighted mean of quality of life for PE patients was 64.38%. The highest domain was the physical activity 68.69%, followed by the social relationship 65.83%, and then the environment status was 64.24%. The lowest domain was for the psychological status with a weighted mean of 58.82%.

Patients' satisfaction scored about total satisfaction with weighted mean 74.58%. The highest domain was the communication 87.7%, followed by general satisfaction 80.1%, and then accessibility and convenience to prosthetic eye 77.8 %. While the technical quality was 73.3%. Financial Aspect and Time Spent with doctors were equal 70.6%. The lowest weighted mean was 66 % for the interpersonal manners.

Results of Concerns showed decreasing percentages from (75.0 %) to (38.0 %) after fitting of PE.

Regarding the qualitative part, the study showed that the PE service is an important community need due to the continuous increase of the eye injuries due to wars and accidents. Moreover, the study showed that the NGOs have better PE service than the governmental sector. In addition to that, many comments were expressed through PE patients; who showed the importance of PE service and the harmful effect of losing eyes on the marital, working, and educational status and exploring the need for implementation of PE service in Gaza strip.

Conclusion: as in general PE service, especially customer PE service, improves QOL for PE patients, and improves PE patients' satisfaction and decreases PE patients' anxiety from the side effects of losing the eye. The PE service meets the community need as the best rehabilitation device for PE patients.

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List of abbreviations

AE: Artificial Eye

GG: Gaza Governorates

MOH: Ministry of Health

NGO: Non-Governmental Organizations

NOH: Al Nasser Ophthalmic Hospital

PCBS: Palestinian Central Bureau of Statistics

PE: Prosthetic Eye

UNRWA: United Nations Relief and Works Agency for Palestine Refugees in the Near East

WHO: World Health Organization

WHOQOL: World Health Organization Quality Of Life.

Operational Definitions

- **Acquired** – A disease or habit that has developed after birth
- **Acrylic** – The major component in artificial eyes
- **Anophthalmia** – True absence of the eyeball
- **Asymmetry** – Lack of similarity in corresponding parts on opposite sides of the body
- **Conformer** – A clear or white plastic shape to keep the curved shape of the eyelids
- **Congenital** – A condition that is present at birth
- **Conjunctiva** – The mucous membrane tissue that forms the posterior layer of the eyelids and the anterior layer of the eyeball
- **Conjunctivitis** – Inflammation of the mucous membrane lining of the eyelid and or eyeball
- **Custom PE** is artificial eye that is fitted and fabricated to all of the specific requirements of an individual patient, made with an impression-fitting technique
- **Depth** – The relative distance of objects and their special relationship to each other
- **Evisceration** – Surgical removal of the contents of the eyeball, with retention of the sclera and or cornea
- **Evisceration Implant** – Designed to replace lost orbital volume following surgical removal of the eye, and to provide a means for transmission of motility to the prosthesis
- **Fornix (Fornices)** – The peripheral extreme of the enucleated socket, where the conjunctiva covering the eyeball meets the conjunctiva lining the eyelid
- **No PE patients:** are patients without prosthetic eye.
- **Ocularist** – One who fits and fabricates ocular prosthetics
- **Readymade PE** is prosthetic eye are fit by a trial and error method. Most of these glass or plastic stock eyes are produced in a variety of standard sizes, shapes and iris colors.
- **Sound eye:** is healthy eye or non-defected eye or non-removable eye.

Chapter 1

1. Introduction

1.1 Background

Eyes are generally the first feature of the face to be noticed. The eye is a vital organ not only in terms of vision but also as being an important component of facial expressions. And because, losing an eye has psychological effects on the patient. Providing quick prosthesis is crucial to maintain the psychological wellbeing of the patient (Taylor, 2000).

The artificial eye aims at treating and helping patients' happiness with their appearance after eye removal surgery; PE characterize by comforting and compensating patients with a suitable artificial eye which is suitable in size, color, and dimensions of the sound eye (David 2010). Somkuwar, *et al.* (2009) said that some patients with an ocular prosthesis are totally blind, or have a monocular vision -one sided- those effects on their depth perception or on stereopsis vision. An ocular prosthetic does not provide vision; but it's a cosmetically demanding to improve face' features and improve self-acceptance. Providing patients with artificial eyes has a vital role in their interaction with their communities, helping them to restore their lives and be more acceptable with their communities (Kamble, *et al* 2013). Artificial eyes tend to reduce negative consequences which are associated with empty eye socket, such consequences are: 1) Physical consequences such as; lashes and lids' adherence, secretions, discharges and bad smell (Lubkin&Solan, 1990) and 2) Psychological consequences as a result of being unaccepted by their community, families and work places due to the bad appearance of their defected eye.

Patients with a single eye need a special care because any harm to their sound eye may lead to blindness and make them dependent person (Lubkin&Solan, 1990). So the researcher belief that, after the inserting Prostheses Eye Services in Gaza Strip, patients who received well fitted artificial eyes became enthused to be more positive useful to their societies, and became more accepted in many jobs' positions. They became more productive and effective in their lives and their society.

1.2 Research problem

The research problem arises from the increasing number of Prosthetic Eye patients with limited of rehabilitation interventions. These limitations of rehabilitation, viewed as functional difficulties and psychosocial difficulties.

The Palestinian Central Bureau of Statistics –PCBS- said that there are 113000 disabled people in Palestine, whereas 2.4% of Gaza Strip's population are disabled patients, and 21.7% of Gaza's disabilities are visual disability.(PCBS, 2011). Euro Mediterranean Human Rights statistics stated that 10, 870 of people in Gaza Strip were injured during the war in Gaza in 2014, 50% of those injured people were males, and 19.3% were females, while 31% were children. (Euro Mediterranean Human Rights, 2014). Such statistics uncovers the increasing number of eye injuries that result in eye loss, thus, causing an increase number of PE patients among of eye disease patients. To this end, artificial eye patients require more attention from decision makers in the Gaza Strip, from both governmental and nongovernmental organizations.

Considering PE services as cosmetic and accessory service led to real shortage at PE specialized centers in all sectors, governmental, nongovernmental, and UNRWA's medical services, such these shortage results to increase suffering of the PE patients. Also there are culturally negative perspectives towards those who lost their eyes and/ or have ocular prosthesis. . Artificial eye patients are marginalized and neglected groups from their families and their communities. Thus, increases their psychological suffering and unrest.

Prosthetic eyes patients in Gaza Strip are present in all society segments, particularly the marginalized sectors such as women, children and elderly. Such these marginalized sectors in the society are more affected by losing their eyes. For instance, disabled women face multiple forms of discrimination. They have less access to basic services and less employment opportunities in order to financially support their families (Lene, 2005) ;(UN, 2008). They are often affected by disability than men, also, and they are responsible about health care for persons with disabilities in the Arab community. So, women with disabilities have more risks to certain forms of abuse and harmful practices against them like beating, sexual assault (UN, 2008) (Yeo & Moore, 2003).

An Eastern Arabic woman usually dreams about marriage, having a husband, children and home of their own. Such dreams may disappear at the moment they become artificial eye

patient, as a result of their surrounding community' perception towards them. The society does not treat them in an equal manner like those who did not lose their eyes.

Elderly's artificial eye patients are another victim of this unjust view. Usually elderly people suffer from antipathy, especially from their grandchildren, and being subjected to some sarcastic comments which put them in embarrassing situations. Geriatric PE patients with ocular defects should have perfect services, such as customer PE can provide an acceptable aesthetic result that can be a rehabilitation approach for PE patients. It can, also, integrate them in their society by improving their psychology and quality of life (KamBle, *et al* 2013).

1.3 Justification

This study gives more focus to PE patients' needs and experiences in many aspects of life such as educational, social care and work. This focus would provide good database of finding and results for decision maker to resolve and treat shortage and problems of PE patients. Thus rehabilitation programs for PE patients can be developed. This study highlights on the shortage of special rehabilitation programs for PE patients and attempts to identify the essential needed services that seek to relief their suffering.

Limited numbers of studies evaluated patient's satisfaction with the prosthetic eye rehabilitation. This study is concerned about PE patients' status that related to PE service like satisfaction about PE service and what are the most important concerns for PE patients in addition to the assessment of the quality of life and identifying the most affected domains in quality of life.

PE services need multidimensional attentions such dimensions are: physical, pathological, psychological, financial and social situations. Those dimensions can positively contribute in improving quality of life, productivity, and integration PE patients into their surrounding communities like people without disabilities. Especially after highlighting about the poor levels of PE rehabilitation services and the unarguable need for specialized centers and qualified staff in order to meet PE patients' expectations.

1.4 Study Objectives

1.4.1 Main objective

The main objective of this study is evaluating PE services in the Gaza Strip to come out with recommendations to improve the accessibility and affordability of the PE services.

1.4.2 Specific objectives:

1. Identifying the differences among PE patients in reference to characteristics variables.
2. Assessment PE patients' satisfaction about the delivered PE service.
3. Measuring the Quality Of Life (QOL) status for PE patients' pre \ post PE implementation.
4. Identifying the PE patients' concerns before and after fitting of PE.

1.5 Context of the study

1.5.1 Gaza Governorate demographic characteristics:

Gaza Strip is a piece of land located in the southern area of Palestine with 1,760,037 inhabitants. It is divided into five governorates: North Gaza, GazaCity, Mid Zone, Khan-Younis and Rafah and contain eight recognized camps (PCBS, 2014a). Gaza Strip is characterized with high population density with more than 4,500 individuals per square kilometer, resulting in high demands for health care services and high work overload for health care providers.

1.5.2 Socio- economic context

The Current political situations, the frequent Israeli wars, and the siege imposed on the Gaza Strip –GS- have severely damaged the Palestinian economy• According to the PCBS, about 13% of the households in the Gaza Strip and West Bank in 2011 suffered from deep poverty according to consumption patterns (7.8% in the West Bank. and 21.1% in the Gaza Strip). Moreover, high population density, limited land and sea access, continuing isolation, and strict external siege have bad consequence on economic conditions in the

Gaza Strip. The unemployment rate in the Gaza Strip continues to be at unprecedented levels, particularly among young people, it increased from 28.7% to 31.0% (PCBS, 2013).

Human Rights Council (2013) showed that 44% of Gaza populations suffer from lack of Food security, not because of food shortages, but because of the difficult economic situation. The report shows that 17% of areas of Gaza Strip fall within high risk areas which are considered by Israel as buffer zones. Moreover, the three wars accumulated problems of housing, where in wars 2008 led to destroying 2800 housing units, while in war 2012 a total of 200 units were destroyed. In wars 2014 10 hospitals and 48 health centers were targeted and destroyed. This resulted in depriving Gaza Strip of natural expansion to suit the increasing population of Gaza Strip. (MOH, 2014)

1.5.3 Political context

Political division between Gaza and the West Bank and inadequate functioning of the Palestinian legislative Council- PLC- aggravated the problem of PE patients, through failing to enact laws and policies to decrease sufferings of the Palestinian disabled people in general and the suffering of a patient with PE specially.

This political conflict led to additional negative consequences on various life aspects of the Palestinian society such as the reductions of health services and collapse of the health care system through duplication of administrative orders and lack of good planning of healthcare policies and strategies and blur of visions to setting the healthcare priorities in the Gaza Strip.

1.5.4 Gaza Strip under attack

First attack 2008-2009: 22 days war started at 27 December 2008, a series of air strikes against targets in Gaza following the breakdown of a temporary truce between Israel and Gaza Government, total of 1,100 - 1,400 Palestinians and 13 Israelis were killed in the 22-day war (Kasher, 2010). The conflict damaged and destroyed tens of thousands of homes, 27 hospitals, 800 water wells, 186 greenhouses, 50,000 homeless, 400,000- 500,000 without running water, one million without electricity, and resulting in acute food shortages. The people of Gaza still suffer from the loss of these facilities and homes, especially since they have great challenges to rebuild them (Kasher, 2010; PCBS, 2011)

Second attack was in (November 14 and 21) 8 days of war. Israel's eight-day aggression against the Gaza Strip has made that 200 homes were completely destroyed and another

8,000 were partially damaged during the eight-day Israeli military operation three mosques and some of health center were also completely demolished (UNRWA, 2013). Over 160 Palestinians, including women and children, were killed and about 1,200 others were injured and five Israelis were killed (UNRWA, 2013). The violence ended after the Israeli regime and the Palestinian government agreed to stop war in Egypt.

Third attack was in 2014 51 days War , fighting intensified between Israel and Gaza government, leading to more than 2100 Palestinians were killed after Israel Intensified its bombardment of Gaza. The war was ended after 50 days of conflict when a ceasefire was agreed upon on 26 August 2014 (Sherwood & Balousha, 2014). Three wars led to increase number of PE patients. injured patients during the war 2014 on Gaza Strip were 10,564. Males 7,230 (68.4%) Female (3,334) 31.6%. Percentage of injuries according to Gaza governorates: North of Gaza 3210 (30.4%), Gaza 3132 (18.4%), Med zone 1742 (16.5%), Khan Yuonis 1599 (14.8%) and Rafah 921 (8.8%) (MOH, 2014)

1.5.5 Disability context

Persons with disabilities in the Gaza Strip are divided into several groups includes physical, sensory and mental disabilities. Adding to that the level of disability had differences in severity of disability: as longevity, causes and consequences. Some of disabilities are permanent during a person's life while others may be temporary periods.

1.5.5.1 Prevalence of Disability in Gaza Strip

The three most prevalent disability categories in Gaza Strip, according to Palestinian Central Bureau of Statistics, were: mobility (26.0%), visual impairment (23.1 %) and learning (11.5%), and according to causes of these disabilities (36.8%) of the disabilities were related to congenital conditions, (34.1%) to diseases conditions. (10.3%) were related to traffic or other non-work injuries. In the Gaza Strip 42.2% of total disabled persons aged 15 years and over had never enrolled at school. On the other hand. 27.1% of total disabled persons dropped out of school and 56.3% of total disabled persons are illiterate. Approximately 90.9% of the disabled population in the Gaza was unemployed (PCBS & MOSA, 2011).

While according to National Society for Rehabilitation Gaza Strip (GNSR) and Palestinian Medical Relief Society (PMRS) the three most prevalent disability categories in Gaza

Strip, according to this statistical report were: mobility (32.2%), visual impairment (31.9%), and combination disabilities (15.4%). Percentage of females with disability was 45.3% and percentage of children less than 18 years old was 36%. (GNSR & PMRS, 2010). According to Assalama Charitable Society for Wounded and Handicap People (2015) there is 300 persons with visual disability partially or totally resulted from three wars on Gaza strip (war 2008, 2012 and 2014)

1.5.6 Health care system:

The continuous siege over Gaza for the last 10 years led to a massive deterioration in health systems, increasing rates of unemployment, poverty and severe collapse of economic and social development indicators. That led to deterioration in equality of the delivered health care services in all health institutions in the Gaza Strip, such as severe shortage of medical supplies and logistics needs. The ministry of health reports a significant shortfall in its capacity.

The Palestinian health system is one of the most powerful health systems in the region. And had good health indicator within national level as: the crude birth rate in the State of Palestine will decline from 32.3 births per thousand of the population in 2014 to 29.0 births in 2020. Crude death rates are expected to decline from 3.7 deaths per 1000 population in 2014 to 3.4 deaths per 1000 population by 2020. The population growth rate was 2.9% in the State of Palestine during 2014. Moreover, in the Gaza Strip, the fertility rate was 4.5 during 2011 -2013 compared to 6.9 in 1997. This decrease can be attributed as a result of decrease in the mortality rate in the State of Palestine. Life expectancy for individuals has increased to 73.2 years in 2014. The under-five mortality rate 24 per 1,000 live births in Gaza Strip (PCBS, 2014b)

Palestinians health care system suffer from fragmentation and continuous challenges due to the political circumstances, siege, conflicts and wars which cause an increasing the number of prosthetics eye patients and continuous drainage of its limited resources. Moreover, the internal Palestinian Governmental fragmentation causes poor coordination between the health stakeholders which was reflected through health facilities in terms of limited resources, poor resources allocation and low responsive governances.

The Palestinian health sector includes three main levels of care of the primary, secondary and tertiary health care. (UNRWA), Non-Governmental Organizations (NGO) and the private, for-profit service providers, all share and contribute in health services provision at different levels with the governmental health sector (MOH).MOH is the responsible body for leadership and organization of health system between Palestinian health sectors, through well management of health sectors and provides necessary resources that is needed for sustainability and development of health care. MOH is also responsible for the development of health policies, legislation, laws and plans, activation of partnerships among the various partners in health sectors with optimal management and investment of available resources (PMOH, 2014).

1.5.7 Workforce indicators of health sector

According to MOH (2014) total workforce of health sector in Gaza Strip were 13.889. Where, 9061 of them work in the Ministry of health. Gaza strip workforce needs as following: 0.5 doctors /per bed, 0.8nurses /per bed, 7 doctors/ per 10,000 inhabitants, 11 nurses /per 10,000 inhabitants, one doctor of Dentist /per 10,000 inhabitants and one pharmacist /per 10,000 inhabitants.

1.5.8 Ocular care services:

Eye services are developed gradually in MOH, it was provided within a small department at Al Shifaa Hospital before1972. Then AL Nasser Ophthalmic hospital was established to deliver ocular services to citizens from all over Gaza strip Governorates (NOH, 2012). Regarding MOH hospitals, the ocular services are provided in an expanded manner through two hospitals Al Nasser Ophthalmic Hospital (NOH) and European Gaza Hospital (EGH). The NOH which is the central hospital for eye care in Gaza Strip that provides surgical and clinical services in addition to emergency and primary care through many ophthalmic sub specialties and departments (NOH, 2012). While, in EGH the eye services are provided through ophthalmic department in the hospital which was established in 2001 to serve south Gaza strip. Both hospitals services are delivered through ophthalmologist, general practitioners, and optometrist practitioners in addition to supporting nurse staff, and pharmacists (MOH, 2012).

1.5.9 Prosthetic eye services:

Al Bait Assamed Associations Society is the first organization provided customer PE in Gaza Strip through health projects, where these health projects aimed to treating and fitting of customer PE as free for lost eyes patients resulted from the Israeli aggressions on the Gaza Strip. The first project was in 1993-1998 funded by Swedish organization. The second project was in 2000-2001 funded by the World Bank. The third project was in 2002-2004 funded by the Islamic Bank. The fourth and last project was 2005-2006 funded by UNDP United Nations Development Programme. All projects was carried by a Greek Ocularist called FidraSaniora who used to come from Greece every three months to provide customer PE. During that time Gaza Strip lacked to experts and qualified staff in this field. (Personal communications, 2016).

At the beginning of 2015 NOH initialized different subspecialty services through eight units in out-clinic department, Retina unit, Glaucoma unit, Cornea unit, Cataract unit, Pediatric unit, Oculoplastic unit, Laser unit, and General unit (NOH, 2015).

The Oculoplastic unit provides surgical and medical services for Prosthetic eye patients; however, the absence of essential instruments and materials for Prosthetic eye services resulted in poor service delivery.

In 2013, the MOH had a contract with NGO's (Al-Radwan center) through NOH to provide better service for PE patients. Patients went to this NGO center for further testing and obtaining a readymade PE as free and preparing a suitable prosthetic eye after being primarily evaluated at NOH. Gaza Strip lacks any governmental or international centers that are responsible for providing health care for patients with artificial eyes. In Gaza Strip, there is only one center (Al-Radwan center) which was recently established in 2013 to deal with lost eye patients, this center provides patients with artificial eyes (customer and readymade). Still, this center lacks some important material and equipment and that is due to inability to supply such equipment into Gaza due to closure of borders and siege. Such missing equipment is essential to continuity and keeps on manufacturing of artificial eyes.

Al-Radwan center offers the necessary support for patients who are financially not capable of affording their treatment expenses of PE service. PE Patients talked about their satisfaction with this service in that center because it represents the first glimpse of hope to

them. That center understands the patients' suffering, and needs, thus seeks to resolve meet it by offering the needed artificial eye tools and services as free or by coordination's projects with others NGOs organizations. As a result PE patients became extroverted persons because they can meet people with more confidence.

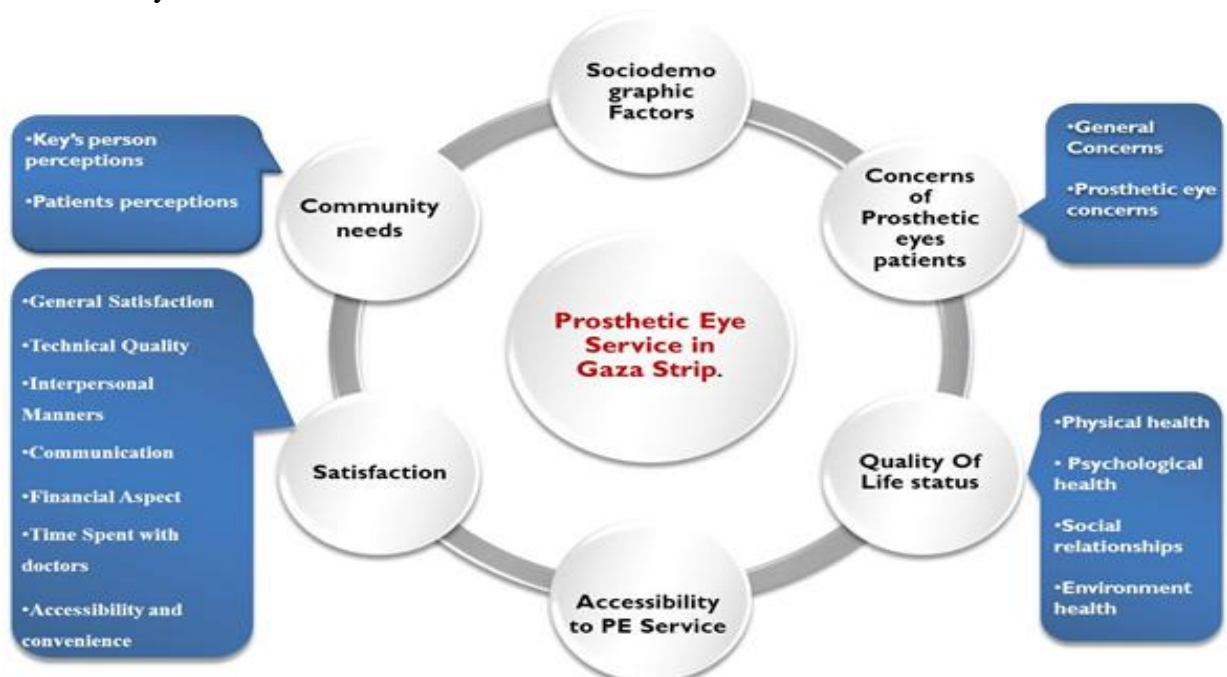
Chapter 2

2. Literature review

The first discovery of the artificial eyes was in Egypt, artificial eyes were found inside the mummies. The artificial eyes was made of enamel and covered by silver with bronze lids. Romans also used the ocular prosthesis in vivo, and referred to the 'Faber Ocularist (maker of artificial eyes) in inscriptions. Ancient Greeks also used artificial eyes. Artificial eyes then were embellished by painting with silver globes which were attached by gold pegs. In 1681, Ludgate Hill was the first English Faber Ocularist who was advertising enamel artificial eyes. After the First World War in 1917, the prosthetic eyes industry and its products were greatly needed for injured soldiers returning from the war. (Roman, 1994). Today the majority of PE patients all around the world wear ocular prosthesis made of acrylic. Several techniques were used in fitting and fabricating artificial eyes. Empirically fitting PE, modifying PE by making an impression of the ocular defect (Taicheret *al*, 1985), and the custom eye technique are the most commonly used techniques. The fabrication of a custom acrylic eye provides more esthetic and gives precise results (Benson, 1977).

2.1 Conceptual Framework

The conceptual framework was constructed based on literature and personal experience. The framework helped logically in linking potential factors that could effect on the Prosthetic eye services.



2.1 Eye loss

The loss of an eye is accompanied by changes to appearance, reduction of the visual field and a loss of depth perception that leads to monocular vision for all non-blind PE patients.

2.1.1 Monocular vision

Losing of depth perception as a result of losing binocularity and its related items that cause depth perception or stereopsis vision (3D dimensions) such as: retinal disparity where objects are projected on each eye at different angles; convergence where the two eyes focus on the same object producing kinesthetic sensations in the extra-ocular muscles; shadow stereopsis, where images of shadows are fused stereoscopically. Depth perception that are retained with monocular vision include: motion parallax (superimposing visual images by moving the head from side to side), relative size (static and dynamic objects become smaller with distance), aerial perspective (distant objects are duller and bluer than close objects and have lower contrast), accommodation (focusing on objects closer than 2m produces kinesthetic sensations in the ciliary muscles of the iris), interposition (a near object covers part of a distant object), curvilinear perspective (parallel lines become curved at the outer extremes of the visual field), texture gradient (finer details can be seen more clearly on close objects), light and shadow (reflections help determine an object's shape and spatial position), image blurring (objects in focus blur at the extremes of the visual field) (Chen, 2001).

Acquired monocular vision reduces the contrast sensitivity in the remaining eye and reduces the horizontal visual field by 10 to 20%. This forced PE patients to turn their heads more frequently than binocular people in order to compensate the lost portion of the visual field, so monocular vision associated with some concerns like: safeguarding the remaining eye, the need to employ driving aids such as special mirrors, facial appearance, and prosthetic eye maintenance (Neuro Optometric Rehabilitation Association, 2017), (Ihriget *et al.*, 2007), (Nicholas *et al.*, 1996).

2.2 Eye removal

2.2.1 Possible Conditions Leading to an Artificial Eye

According to Waterdown Optometric Clininc (2016), said, the following conditions may lead to remove of the eye and also to the necessity of a PE service: the most common cause of eye loss is trauma or injury, but many chronic eye diseases can also lead to eye removal. Five common eye diseases that can ultimately result in the removal of an eye are Painful Blind Eye, Ocular Melanoma, Diabetic Retinopathy, Tumors and Cataracts.

- **Blind, Painful eye:** Condition in which eye has no light perception (NLP) and is causing pain like glaucoma. Enucleation is indicated to alleviate pain.
- **Ocular melanoma:** A type of cancer arising from the cells of melanocytes found in the eye. Melanoma is the most common type of ocular cancer. In types of intraocular melanoma, meaning that the cancer occurs inside the eye rather than on the eyelid or other outer parts of the eye, the eye may be removed in order to prevent the cancer from spreading to other parts of the body, particularly the liver, where it can be fatal.
- **Diabetic retinopathy:** A leading cause of by changes in the blood vessels of the retina leading to hemorrhaging of the small blood vessels in the eye. The hemorrhaging is the result of poor blood glucose control, the vessels either leak fluid or abnormal vessels grow on the surface of the retina. Often there are no symptoms or pain in the early stages. Diabetic Retinopathy is reversible to a certain extent, but once extensive hemorrhaging has taken place, scarring can occur which may cause the retinal detachment. This can sometimes be corrected with surgery, but if the surgery is not successful, vision will be lost and the eye can be painful or unpleasing aesthetically. In these cases, removal of the eye may be a good option.
- **Cataracts:** Is a clouding of the lens of the eye which in extreme cases can completely block the passage of light, resulting in blindness. In addition to causing blindness, cataracts also given the eye a cloudy appearance and in advanced cases, the eye is sometimes removed for cosmetic reasons. The removal of an eye is usually a last resort in the treatment of any of these conditions because it results in complete blindness in that eye and the preservation of vision is usually a goal in the treatment of eye diseases. However, when necessary, removal of a diseased eye often provides relief from pain, prevention of the spreading of a disease to other body parts.

- **Tumors:** Many types of cancers can affect the different structures of the eye. If treatment is unsuccessful in removing the tumor, enucleation is typically indicated. Besides Ocular Melanoma; there are other types of eye cancers that can result in the removal of an eye such as Retinoblastoma, which is most common in children. Retinoblastoma is a tumor that develops in the eye's retina.
- **Trauma:** The most common cause of eye loss, trauma can take many forms; ruptured globe, penetrating or perforating eye injury, blunt force trauma. When risk of infection or pain is high, enucleation is typically indicated.
- **Ruptured globe:** Full thickness wound of the eyewall caused by a blunt object or blunt force.
- **Penetrating eye injury:** Injury to the eye that causes an entrance wound and/or an intraocular foreign body.
- **Perforating eye injury:** Injury to the eye that causes an entrance and exit wound as in for example a BB pellet that enters in one location and exits another.
- **Infection:** Many types of infections can result in the loss of vision or the necessity to remove the eye to protect the rest of the body from infection. Shingles, uveitis, endophthalmitis, corneal ulcer, etc.
- **Vitreous hemorrhage:** Bleeding in the vitreous cavity in front of the retina. May be caused by either disease or injury.
- **Endophthalmitis:** A serious intraocular bacterial infection, often the result of a penetrating eye injury.
- **Anophthalmia:** Patients have been born without an eyeball called or with an undeveloped eyeball (microphthalmia). Their eyes may be blinded and scarred due to injury or after wound healing secondary to severe trauma may result in phthisis bulbi which represents an ocular end-stage of disease and is defined by atrophy, shrinkage, and disorganization of the eyeball and intraocular contents leading to aesthetic disfigurement of the face (Yanoff, & Fine, 2002). They need special PE called shell prosthetic eye before the decision of removal eye surgery.

2.2.2 Type of removal eye surgery

There are three procedures for removing the eyeball: enucleation, evisceration and exenteration. Exenteration involves the removal of all orbital tissue, including the eyeball and its supporting structures. Exenteration requires an orbital prosthesis rather than an

ocular prosthesis. Enucleation is a surgical procedure whereby the eye globe is removed leaving behind the conjunctiva, Tenon's capsule, extra-ocular muscles and the stump of the optic nerve. Then a spherical implant with diameter 18mm to 20mm is placed in the eye socket. Then four recti muscles are secured to the spherical implant. Then Tenon's layer is closed over the implant and the conjunctiva is draped over the Tenon's layer with good sutures. Evisceration procedure involves the removal of the intra-ocular contents of the eye including all accessible uveal tissues, the retina, the vitreous, and the lens. The cornea may or may not be removed and an implant may or may not be inserted, the size of the implant is usually no larger than 18 mm because a larger implant may lead to less motility as the limits of tension in extra-ocular muscles (Chen, 2001).

2.2.3 Enucleation versus Evisceration

Ocularists prefer evisceration over enucleation. The evisceration procedure is simpler and less invasive than enucleation and provides better motility for PE and better stability for the anophthalmic socket (Viswanathan *et al.*, 2007), (Timothy *et al.*, 2003), (Chen, 2001). However, modern enucleation procedures compete the results of evisceration and are preferred because they provide better space for larger implants, better cosmetics and lower risk of PE falling (Deacon, 2008), (Viswanathan *et al.*, 2007).

2.3 Prosthetic eyes services:

The human eye is a complex sensory organ that perceives directly a tiny fraction of the world and which is also designed to optimize vision under conditions of varying light (Acharya, *et al.* 2008). The human eye is an organ that reacts to light and has several functions. As a conscious sense organ; its function is vision. Rod and cone cells in the retina allow conscious light perception and vision including color differentiation and the perception of depth dimensions. The human eye can distinguish about 10 million colors (Judd, 1975). Function of the eye- vision- may be defected partially or totally. Partially as the decrease of vision called low vision. The World Health Organization defines low vision as visual acuity of less than 6/18 but equal to or better than 3/60, or a corresponding visual field loss to less than 20°, in the better eye with the best possible correction. 'Blindness' is defined as visual acuity of less than 3/60, or a corresponding visual field loss to less than 10°, in the better eye with the best possible correction, while loss of vision is called Total blindness which is defined by a complete lack of form and visual light perception and is clinically recorded as NLP, an abbreviation for "no light perception." Blindness is

frequently used to describe severe visual impairment with some remaining vision. 'Visual impairment' includes both low vision and blindness (WHO, 2007).

In the absence of the eye due to a trauma or pathological disease congenitally or acquired that lead to deform the face appearance' details which may lead to many problems in the psychological and physical functioning. This needs health rehabilitation by prosthetics eyes which is fitted and manufactured by the Ocularist, who is specialized in the fabrication and fitting of the ocular prostheses for people who lost their eyes due to trauma or illness, and also for the main purpose to get a recovery of general physical, mental health and cosmetics status (Hirsch, 1975). The PE patients are divided to totally blindness or a partial losing of vision in one eye which is called monocular (one sided) vision.

2.3.1 Intra-orbital implants and post- surgical conformers

Intra-orbital implants are placed in the cavity which is created when the eyeball is removed and implanted beneath the orbital tissues. Post-surgical conformers are commonly placed in the socket immediately after surgery and lead to good fitting of PE and staying both eye' fornices without adherence.

2.3.1.1 Intra-orbital Implants

In 1884 Dr. Phillip Henry implanted a glass sphere into the scleral cavity of an eye after evisceration surgery. The implant restored lost orbital volume and produced more movement for prosthetic eye (Handley, 2006).

The volume of the eyeball is approximately 6 to 7 mL depending on the size of the eye. This volume should be replaced by the PE and the orbital implant. The ideal implant is one that never leave or extrudes through the overlying conjunctiva and is sufficiently large to keep the ocular prosthesis as possible in light and suitable shape of lids margins and do not pressure the conjunctival wound, which requires at least 5 mm thickness at the center (Chen, 2001).

Implants are either non-integrated or integrated. Non-integrated implants (usually spherical shape manufacturing from (poly methyl meth acrylate-PMMA) or (silicone) are not directly attached to the extra ocular muscles. Integrated implants are directly attached to the extra ocular muscles. Early integrated implants, such as Castro Viejo implants, Allen implants, Iowa implants and Universal implants, had holes or channels to accommodate the

extra ocular muscles shapes and lengths. Orbital implants that are currently in use are: hydroxyapatite, porous polyethylene, bio ceramic, wrapped and unwrapped PMMA sphere, and simple silicon sphere. (Enotes, 2012), (Chen, 2001). Main complications for ocular implant are unsuitable size and exposure of implant outside the conjunctival socket led to poorly fitting of prosthetic eyes and bad influences in PE motility (Viswanathan *et al.*, 2007), (Shields *et al.*, 1994). Motility of the prosthetic eye is based on rectus muscles and the good conjunction with the orbital implant. The horizontal lateral movement of the prosthesis is normally greater than horizontal medial movement while upward and downward movement is limited (Chen, 2001).

2.3.1.2 Post-surgical conformers

A soft silicon or rigid PMMA clear, conformer (with holes to facilitate the flow of orbital secretions) is inserted after both enucleation and evisceration procedures to protect the sutures wound and maintain the fornices within normal size, unsuitable and large conformer may make unnecessary tension on the wound edges. Post-surgical conformers should be replaced with a prosthetic eye as soon as possible after the orbital tissues have healed and the swelling disappears. This is usually about five or six weeks after enucleation. During this time orbital tissue contraction may occur (whether a conformer is present or not) as a sign of conjunctival adaptations with new situation, which is relatively flexible and able to be remolded after fitting of PE. (Avisaret *et al.*, 2011), (Patel *et al.*, 1997).

2.3.1.3 Prosthetic eyes

The absence or disfigurement of an eyeball deforms the symmetry of the face. This deformity needs good intervention like PE. Good fitting for PE depend on good surgical outcomes, better fitting and centration for eye implant, good fitting for conformer and good recovery for eye wounds and sutures, better fitting of conformer tools in the conjunctival socket prevent the upper and lower forensics from shrinking and to promote developmental growth of orbital bone, a conformer of a larger size must be changed as the child grows (Valauri, 2005). An ocular prosthesis or artificial eye is a type of craniofacial prosthesis that replaces an absent natural eye following an enucleation, evisceration, or orbital exenteration. *Enucleation* is the removal of the eye that leaves muscles of the eye and remaining orbital contents intact. This type of ocular surgery is indicated for a number of ocular tumors, eyes which suffer from severe trauma, and in blind and painful eyes.

Unilateral enucleation has a major impact, such as incomplete and deficiency of visual input to a section of the brain; restriction from monocular vision affects spatial perception, motion systems, and visual direction and may directly affect in diminished performance (Lekay-Adams, M. *et al* 2014). *Evisceration* is the removal of the eye's contents, leaving the scleral shell and extra ocular muscles intact. The procedure is usually performed to reduce pain or improve cosmetics of a blind eye, as in cases of endophthalmitis unresponsive to antibiotics. An ocular prosthesis can be fitted over the eviscerated eye in order to improve cosmetics. *Orbital exenteration* aims at local control of disease invading the orbit that is potentially fatal or relentlessly progressive, for all exenteration cases that representing to ophthalmologists, 40–50% are tumors patients in eyelid or periocular skin. Exenteration is the removal of all eye socket contents, including muscles, the lacrimal gland system, and the optic nerve as well as varying parts of the bone of the orbit. The eyelid can be spared, depending on the extent of the tumor (Perman, K. *et al* 1988). The prosthesis fits between an orbital implant and eyelids. Often referred to as a glass eye, the ocular prosthesis roughly takes the shape of a convex shell and is made of a medical grade plastic acrylic. A few ocular prostheses today are made of cryolite glass. A variant of the ocular prosthesis is a very thin and hard shell that is known as scleral shell which can be worn over a damaged or eviscerated eye. An ocular prosthesis does not provide vision; this would be known as anon visual prosthesis. PE not only delivers good appearance but fills the orbital cavity so that tears cannot collect and supports the eyelids to be in the natural position and opening to enabling them to carry out their function of cleaning and lubricating. The replacement of the lost eye with a custom made ocular prosthesis should be made as possible as early in life. In case of children who are in need for PE or have congenital deformities, the wearing of a prosthetic eye stimulates the growth of hard and soft orbital tissues on the affected side, so this need to periodic gradual enlargement of the size of the prosthesis over a period of years is necessary which results in provide children with: normal development of the lids and the soft tissue lining the orbital bone, and enhance the development of the fornices which is necessary for a good cosmetic result. Without prosthesis development the affected side may fail and resulted in an asymmetric face (Dixit *et al.*, 2005) (Cain, *et.al.* 1983).The orbital cavity is fully developed at the age of twelve, thus teenage patients should be treated as adults. (Bartlett, & Moore, 1973)

2.3.1.4 Type of ocular prostheses:

There are two types of ocular prosthesis; Customized Prosthesis mainly is a process for preparing the prosthetic eye for the patients according to their socket dimensions. This process includes taking an impression of the eye socket and fabrication or shaping a plastic shell, painting the iris and then fitting the ocular prostheses. The other type is Stock Eyes or readymade artificial eye, which is usually available in the optical centers, the readymade PE is produced from glass or methyl methacrylate resin. Glass is not a better choice because it is unbreakable to damage and has surface deteriorations in color and transparency of PE from contact with orbital fluids and discharges, leading to reducing life expectancy of PE to approximately 18–24 months, so a regular follow up is required once in 3 months in case of children and for adults every 6 months (ERPF, 1953). Some PE patients need two prosthetic eyes just cosmetically due to blindness in both eyes which is referred to the condition of completely poor visual perception.

2.3.1.5 The difference between readymade PE and customer PE.

The main advantage for customer PE is that, it is molded and colored according to individual patients' eye characteristics and is fabricated to various sizes, shapes, and colors, Customer PE is the most aesthetic and comfortable intervention and it should be provided for majority of cases of enucleation patients who require these prostheses because it made good adherence with underlying tissues of empty eye, This improves optimum motility and increase aesthetically appearance due to better match of the size and color of the iris and sclera like other sound eye properties (Dixit, 2005). Customer PE makes close contact between posterior surface of PE and tissue of the eye that tends to some advantages like to distribute pressure of PE equally on tissue than the readymade PE, reducing the incidence of eye or conjunctival inflammation, reducing spaces between posterior surface of PE and eye tissue tend to enhance health of eye tissue by potential stagnation and fluid collection do not occur in that space, that could cause irritation of eye tissue and increase growth of bacteria. Using implants can enhance the co-ordinate movements of PE with natural eye. Customer PE helps to improve the patient esthetically and patient's psychological status and provide better results functionally. (Kapoor, *et al.*, 2010) (Kanaparthi, *et al.*, 2011) (Appanna, *et al.*, 2009). Disadvantages of customer PE such as it requires special skills or materials for fabrication, and is relatively expensive and needs more time consuming for manufacturing and fabrication of PE and effectiveness and desirability of impression

methods depend on the Ocularist's experience and availability of materials and equipment (Patilbrajesh, *et.al.*, 2011). Readymade PE made mainly from glass or PMMA and come in a range of colors and sizes and has a right and left standard shape which is deeply concave at the back surface. This back surface allows accommodating a variety of implant shapes and sizes but may allow accumulating of orbital secretions in the non-fitting spaces. The color, fit size and direction of gaze of readymade PE are haphazard manufacturing but the prosthesis can be successful if there is ability to modify the size and shape of readymade PE during fitting. But there are main advantages for readymade PE that it is cheaper and manufactured in large enough shapes to give more ability of modification by Ocularist. This is an important consideration in countries whose PE patients do not have access to custom PE because it is costly; So PE patients express high levels of satisfaction about the artificial eye that has perfect shape, color, mobility, fixation and comfort felling (Rumsey, 2004).

2.4 Quality Of Life status for PE patients:

World Health Organization (WHO) has undertaken a project to develop an instrument (the WHOQOL) for measuring quality of life. Quality of life is defined as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broader range the concept is affected in a complex way by the person's physical health, psychological state, levels of independence, social relationships, and their relationship to salient features of their environment (WHOQOL, 1993). The face plays an important role in the individual's sense of self and body integrity; the psychological impact on self-esteem; physiological dysfunction with facial disfigurement that leads to inadequate communication through the inter-personal communication which is done by eye contact (Callahan, 2005). PE patients lack to essential sense organs, and lose their ability to enjoy the nature's beauty. At the same time, they lose the beauty and the charm of their face, as the eyes are generally the first facial feature to be noticed with in most of the times, when we meet other people; eyes speak earlier than words(Doshi, &Aruna, 2005). So no one can imagine the psychological status of those who lost their eyes. They suffer from deformity of their faces that led to have bad emotion, conscious and avoid taking their roles in social events, which make them suffer from anxiety, stress and depression in their lives (Dixit, 2005).

Before losing the eye, levels of depression for PE patients were within population norms; however, levels of general anxiety after losing the eye were highly raised, levels of social anxiety, social avoidance, and quality of life were significantly poorer than population norms, before PE implementation, 49% of participants displayed slightly clinical levels of anxiety and this decreased to 10% after treatment and implementation of PE. Treatment with PE led to a significant improvement in psychosocial status and physical functioning. (Wang, *et al.*, 2012) (McBain, 2014). So PE patients with a facial deformation by losing the eye had significantly decreased satisfaction with life, an altered perception about the body image, a higher incidence of posttraumatic stress disorder, a higher incidence of unemployment, and had marital problems, such issues lead to significant negative social and functional impact related to facial deformation or scarring (Levine, *et al.*, 2005). This negative impact has different levels between PE patients congenital or acquired loss of the eye. Patients with congenital ocular disfigurement have lower psychosocial problems, more adaptations to their ocular deformations and have less physical impairment of Quality Of Life QOL than patients with acquired eyes losses (Versnel, *et al.*, 2012) (Robinson, 1997).

PE Patients with facial disfigurement as a result to loss of the eye had psychological disorder. So they need good psychotherapy interventions and more rehabilitation to get better reactions with other people that can be achieved with suitable facial prosthesis (Newton, *et.al.*, 1999). facial prosthesis which offers a non-operative rehabilitation to improve quality of life (QOL) and provide satisfactory aesthetics to recover and reactivate the sensations with face, body, and self to facilitate reinstatement of PE patients in their family situation and social environment (Goiato, *et al.*, 2009) (Callahan, 2005).

Atay, *et.al.* (2013) said, PE service is considered as one of the facial prostheses like (OP- orbital prosthesis, AP- auricular prosthesis, NP - nasal prosthesis), when QOL questionnaire have submitted to these group, results showed that all groups had lower scores on overall QOL. Patients with OP had significantly lower physical health scores than others. PE patients showed significantly lower scores in the physical field, due to impairment or loss of vision and serious limitations in physical activities (reading, outdoor mobility, participation in leisure activities and shopping) that were negatively related to the experience of health. In addition, accommodation with monocular vision and

compromising in depth perception may reduce the patient's ability to clean their prosthesis with hygiene products and reduce the quality of their hygiene (Pine, *et al.*, 2011)

2.5 Satisfaction status:

Pappu, *et al.*(2006) defined satisfaction as “the summary of psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with prior feelings about the consumer experience”.

Patients' satisfactions is defined as a health care reaction to relevant aspects of his or her service experience, in his/her formulation, satisfaction is assumed to consist of a cognitive evaluation and an emotional reaction to the structure, process, and outcome of services (Pascoe, 1983). It is important to keep in our mind that measuring of satisfaction leads to measuring and assessment of quality of service.

The satisfaction of patients with prosthetic therapy is multi-dimensional. It depends on the general health, the psychological status, the level of independence in performing of daily activities, social relationships in the environment and the possibility of realization of basic goals. The health status is only a part of that which enters the category of satisfaction with the therapy, describing not only the physical, but also the emotional aspect. Therefore, therapeutic effects cannot be compared only at the level of medical parameters but also the satisfaction of patients (Poljak-Guberina, *et al.*, 2005).

PE patient has an uncertain feeling like sadness and psychological distress due to the loss of vision and loss of facial aesthetics, as a result to failure of ocular therapy. But this is not the end of the treatment and it should be emphasized by cosmetic rehabilitation, PE has important role in their treatment, which fulfills aesthetic, psychological status of PE patients and helps them to best the most possible reintegration in their society (Kumar, *et al.*, 2015). Therefore the combined efforts of the ophthalmologist, Oculoplastic surgeon, and Ocularist are essential to restoring the patient's quality of life and satisfaction. (Mishra, & Ramesh, 2009).

Prosthetic eye generally and customer PE specially provide more esthetic and similar details and result with sound eye to provides enhancement and satisfaction to whom wearing it. It increases their confidence, self-esteem and trusting by themselves. Song, *et al.* (2006) found Patients' satisfaction with ocular prosthesis was relatively high by rate of

satisfaction which was 71.8%, which can be attributed to successful peg insertion or implant implementation in eye socket to improve the prosthesis movement by surgeons which increases the patient's satisfaction. Then PE with comfort and the suitable shape, color, mobility and fixation led to increase Patients' satisfaction, satisfaction is greater when the artificial eye is undetectable to others (McBain, 2014).

2.6 Sociodemographic status:

The sociodemographic factors attribute to (gender, age, marital status, educational level, family monthly income, and working) and clinical data (retention type of ocular prostheses, age of ocular prostheses, and cause of the ocular defects). Clinical characteristics of PE patients and control group have no significant difference between PE groups in terms of sociodemographic variables (Atay, *et al.*2013). this is inconsistent with McBain, (2014) who found Higher levels of anxiety and depression have been linked to older age, being married; having children and that emphasizes the belief which states the prosthesis devices had highly influenced on the social and interpersonal relationships . Pine, *etal.* (2012) found the highest proportion of eyes lost from any cause occurred between the ages one and nine years. Eye loss due to accident related to function of PE patients he found the ages less than 40 years, lost their eyes due to accidents was significantly greater in men than women, but women and men over 40 who lost their eyes due to accidents in similar percent.

Loss of the eye can have effects on some of the sociodemographic factors such as the marital status, type of jobs according to the community's perspective, educational status and visual depth impairment. Rasmussen, (2010) found that, the percentages of affected PE patients on working conditions from all participants were 25% retired or changed to part-time jobs due to an eye disease or acquired unilateral vision, and the percentage of divorced or separated patients of eye removal were twice than in general population. So PE service is considered as rehabilitation technique to those patients that lost their eyes. It gives them the ability to overcome their problems in their society. Patients that had PE early than others have more ability to emerge in their society.

2.7 Accessibility of PE service:

Access to health services refers to the ability of individuals or groups to obtain services they need, and is widely regarded as an important determinant of health (National Collaborating Centre for Aboriginal Health, 2011).

The goal of the community based rehabilitation- CBR is people with disabilities achieve their highest attainable standard of health. Some of roles of CBR are to work closely with the health sector to ensure that the needs of people with disabilities and their family members are addressed in the areas of health promotion, prevention, medical care, rehabilitation and assistive devices. CBR also needs to work with individuals and their families to facilitate their access to health services and to work with other sectors to ensure that all aspects of health are addressed. Other role of CBR is to promote, support and implement rehabilitation activities at the community level and facilitate referrals to access more specialized rehabilitation services (WHO, 2010).

2.8 Current needs:

According to Palestinian Central Bureau of Statistics there are 113000 disabled patients in Palestine. 2.4% of Gaza Strip's population is disabled patients. Visual disability was 21.7% of them (PCBS, 2011). Euro Mediterranean Human Rights statistics talked about number of injured people in Gaza Strip during the war in Gaza in 2014, who were 10,870, whereas 50% of injured people were males, 19.3% were females, while 31% were children. (Euro Mediterranean Human Rights, 2014). This led to increase the number of lost eyes patients due to injuries, pathological and wars conditions. Eyes injuries cases have a significant number of lost eyes patients, the continuity of the siege on Gaza and the closure of borders which led to lack of intervention and had negatively affected on the availability of drugs at MOH hospitals. This drug shortage may effect on the quality of providing care at NOH (Shamia, 2016). Moreover it affected the affordability of essential drug in healthcare services at governmental hospitals where (95.5%) of participants reported that, the siege was the main reason of the drug shortage followed by (80.7%) due to the internal political conflicts. (Al Kishawi, 2015) that shortages increase the suffering of PE patients. So, it is necessary to deliver the best rehabilitations devices for those patients, which one of these devices is PE device. Ocular prosthesis increases the patients' quality of life and enhances their confidence, patients who have been rehabilitated will be ready to reintegrate again in

their society, and the disfigurement of orbital cavity which is associated with the loss of the eye can lead to physical, psychological and emotional disorders (Lubkin, & Sloan, 1990). Most of the PE patients have significant stress, primarily due to functional disability caused by the loss of the eye and lower societal reactions resulted on facial impairment, replacement of the lost eye by PE is necessary to promote physical and psychological healing for the patient and to improve social acceptance (Artopoulou, *et al.*, 2006).

The role of the maxillofacial specialist is fabricating an ocular prosthesis with acceptable esthetics, to restore facial symmetry and normal appearance for the PE patients. That role becomes essential issues (Artopoulou, *et al.*, 2006). Additionally, to restore normality features' face with an ocular prosthesis to enable the PE patient to cope better with the process of rehabilitation intervention and to be more coped with their society (Ow, R. &Amrith, 1997).

2.9 Concerns of Prosthetic eyes patients

That moment when patients lose their eyes, generates inside them some of concerns issues that are expressed as an anxiety, decreased in self-esteem stability, significant physical, psychological and emotional problems.

Most of literatures about PE mainly focus on issues that are related to surgical conditions like comfort after doing it, complication before or after surgery, satisfaction about surgery before and after losing of the eye, surgical procedures and changes on adaptations with monocular vision and suggestions for fitting PE after surgery. (Hanif, *et al.* 2009) (Ihrig, *et al.* 2007) (Chin, *et al.* 2006)

Overall working with PE patients is satisfying when the Ocularist is comfortable looking for the signs of complications due to underlying ocular tissue or socket disorders and PE irregularities, to provide a comprehensive eye care for PE patients, the most important procedure is the removal of the PE and then fine examination ocular prosthesis and eye tissue, to treat the underlying tissue disorders and/or refer patient to the appropriate specialist Ophthalmologist or Oculoplastic surgeon. (Malinda, *et al.*, 2008)

Pine, *etal.* (2011) talked about patient's items concerns as general concerns such as health of remaining eye, ability to judge distance, receiving good advice, reduced side vision, change to appearance, loss of balance, and pain from operation, and phantom sight vision.

In addition to the artificial eye concerns such as retention of artificial eye, direction of gaze relative to good eye, comfort of artificial eye, movement of artificial eye, fullness of orbit relative to good eye, size relative to good eye, color relative to good eye, watering, crusting and discharge, eye lid contour relative to good eye. He found that at the time of initial eye loss, participants were mainly concerned about the health of their remaining eye, coping with monocular vision and receiving good advice. Between the initial eye loss and the present, reductions in concern occurred with judging distance, peripheral vision, appearance, receiving good advice, comfort, retention, color and movement of the artificial eye, fullness of orbit, loss of balance and postoperative pain. Patients whose jobs involved the public were more concerned about the appearance and reduced visual range than those in other occupations. Participants' chief present-day concerns were health of the remaining eye and watering, crusting and discharge. Customer PE's technique has clinical advantages including the improved adaptation to underlying tissues, increasing the mobility of the prosthesis, improving facial contours, and enhancing aesthetics gained from accurate size of the iris and pupil and color of the iris and sclera (Mathews, *et al.*, 2000) .

Chapter 3

3. Methodology

3.1 Study design

This study was triangulated, cross sectional design. Quantitative part was covered through interviewed questionnaire for all PE patients in Gaza Strip, while Qualitative part was covered through measurements of patients and key's person perceptions about PE service. Key's persons were interviewed by in depth an interview that involved four managers from governmental and private sectors. Patients' perceptions were tested by open ended questions about the effect of losing the eye or fitting of PE on (marital status, educational status, working status) and the importance of receiving PE service.

Methodological triangulation would afford combination between quantitative and qualitative model to validate findings from one method with another.

3.2 Study settings

All patients who lost their eyes were included in this study. Mainly from two places, the first is a governmental hospital – Al Nasser ophthalmic hospital. And the Second is NGO's center – Al Radwan medical center for ocular prosthesis.

There are places with limited number of PE patients and deliver readymade PE only, which are also included in this study such as St John Eye Hospital, Eye Specialty Hospital and Military medical services hospital at the Ministry of the Interior.

3.3 Study population

The study includes two populations. The first population for quantitative part is all patients that lost their eyes (245 patients) with (customer and readymade) or without (NoPE) prosthetic eyes.

The second population for qualitative part is two groups; the first group consists of key's persons from governmental and NGOs sectors institutions that provide artificial eyes service. Second group includes all patients that lost their eyes with or without artificial eye,

and their reviews are expressed through group of open ended questions included in the questionnaire.

3.4 Sampling

The numbers of the first sampling were all PE patients in three groups: (NoPE, Customer PE, ReadymadePE). These represent those who lost their eyes with or without prosthetic eyes. To measure which of the previous group is similar to norms value of attitude, manner, behavior of normal people, and describe to what extent do patients of artificial eyes receive benefits from these services.

A purposive sample of 4 key's managers was selected. The idea of including this sample is to dig deeply and understand in-depth the perspectives about current needs for PE service. The qualitative component was carried out after the quantitative one in order to explore issues that emerge from the quantitative study. Four managers were chosen from Governmental and NGOs as following: two governmental managers were chosen from Al-Nasser ophthalmic hospital (director and medical director) because it is the only hospital in Gaza Strip deliver and provide most of removal eye surgeries. In addition to that, Al Nasser ophthalmic hospital represents the Palestinian ministry of health in the agreement and protocol that signed between the Palestinian Ministry of health and the NGOs sector (Al-Radwan center for prosthetic eyes). While two NGOs managers were chosen from Al-Radwan center for prosthetic eyes because it is the only center in Gaza Strip manufacture and deliver customer PE and receives all PE patients who referred by the Ministry of health to receive readymade PE.

3.5 Period of the study

The study consumed 12 months; it started in December, 2015 and was accomplished in November, 2016

3.6 Eligibility criteria

3.6.1 Inclusion criteria:

-All the patients that lost their eyes with or without prosthetic eyes were obtained in Gaza strip.

3.6.2 Exclusion criteria:

- Any patient that has PE service outside of Gaza strip.
- Children (less than 15 years old) will be excluded in the Questionnaire part to avoid any misunderstanding.
- UNRWA's perception of the PE service was excluded because there is no PE service in its organizations.
- Any patients lost both eyes (totally blindness) just were 3 cases, because it is difficult to test them with questionnaire that's contains some questions related to remaining of vision like: reducing of visual field, communication with others from blindness side, fearing about the sound eye, Health of remaining eye, and ability to judge distance ...etc.

3.7 Study instruments

Quantitative data were tested by three approved questionnaires.

- World Health Organization Quality of Life Instrument questionnaire, Short Form (WHOQOL-BREF) was used to measure four domains which are social relation, physical, psychological and environmental status.
- Satisfaction questionnaire was used to examine seven domains of satisfaction: (General Satisfaction, Technical Quality, Interpersonal Manners, Communication, Financial Aspect, Time Spent with doctors and Accessibility and convenience) for all prosthetic eye patients.
- Concerns questionnaire was used to identify most concerns of PE Patients pre / post fitting of PE.

While qualitative part was tested by in depth interviews and open ended questions to identify the current needs for PE service.

3.8 Pilot study

A pilot study included were 30 participants that have been chosen as 10 participants for each participant's group NoPE, Custom PE and ReadymadePE group, to explore the appropriateness of the study instruments and to let the researcher train for data collection. In addition, this will also allow further improvement of the study validity and reliability of the study.

3.9 Response rate

The total number of questionnaires distributed was 245 and the number of respondents was 214 with a response rate of 87.3 %.

3.10 Ethical considerations

When dealing with patients with artificial eyes, some ethical considerations should be taken such as:

- Obtaining approval from School of Public Health at Al-QudsUniversity, Helsinki Committee and Admin approval from all places that used to collect data and interviews to get approval for conducting this study.
- Everyone in the study will receive a complete explanation about the research purposes, confidentiality.
- Everyone in the study population will know that participation in the research is optional.
- All the ethical concepts will be considered: respect of people and respect of truth.
- Anonymity and confidentiality were given and maintained.
- Permission for recording the interviews was considered.
- Respect the privacy of patients' medical conditions and their suffering.
- Realize the relationship between the patients' condition and some of their verbal expressions, words and actions that are aggressive, and even in some abnormal behavior during dealing with them.
- No dissemination for any medical or personal information or patients' pictures without their permission.
- Dealing with patients through specialists who have scientific competence and no one watches them during clinic visit without their permission and approval.

Dealing with patients through specialists who have scientific competence and no one watches them during clinic visit without their permission and approval.

3.11 Data Collection

The first component of data collection was obtained from interviews with all PE patients by calling them on their mobile or send SMS messages to them to identify schedule time

for interview's meeting. This component was conducted in 5 months. The second component of the data collection was some open ended questions were designed by the researcher and questioned for all PE patients and semi-structured questions were designed by the researcher and questioned for key's managers of governmental and NGOs. Any notes were taken through the interviews and recorded to allow further information collection. In-depth interview with managers was conducted after the end of quantitative data collection.

3.12 Scientific rigor

3.12.1 Quantitative part (questionnaire):

3.12.1.1 Validity

Validity refers to how well a test measures what it is purported to measure (Phelan, C., & Wren, J. 2006).

A pilot study was conducted before the actual data collection to examine participants' understanding and response to the questionnaire.

3.12.1.2 Reliability

Reliability is the degree to which an assessment tool produces stable and consistent results (Phelan, C., & Wren, J. 2006). The following steps had been done to assure instruments reliability:

- ◆ Good training for data collectors about the patients interviewing steps and the way of asking questions. This was assured on standardization of questionnaire filling. Team of data collector consist from three persons, the Researcher, Ocularist and information technology engineer.
- ◆ Result and data were entered in the same day of data collection to allow possible interventions to check the data quality or to re-fill the questionnaire when required.

The overall instrument reliability test (Cronbach's Alpha) was high, Quality of Life 0.925, Satisfaction 0.819, Special concerns test (pre fitting of PE 0.807, post fitting of PE 0.916). General concerns (pre fitting of PE 0.725, post fitting of PE 0.727).

3.12.2 Qualitative part:

In this study, three steps were used to improve reliability. The first step is a peer check by health experts to adjust and modify the current need's questions that lead to cover all dimensions. The second step was prolonged engagement and probing technique. The third one was recorded the interviews to follow up and recheck information or data latterly.

3.13 Data entry and analysis

3.13.1 Quantitative part:

This study used Statistical Package of Social Science (SPSS) program version 20 for analysis and data entry. Data analysis was carried out through consecration of all the necessary data analysis techniques and methods and included checking and verifying of data, data entry and coding, data cleaning and recoding, and data processing. Frequency tables show sample characteristics and differences among PE patients (No PE, customer PE and readymade PE). The researcher followed the following steps:

- Questionnaires were reviewed and performed after over viewing of the questionnaires.
- Designing a data entry model using SPSS program version 20.
- The questionnaire were coded and entered into the computer.
- Data cleaning was performed to ensure that data are entered correctly.

Statistical analysis includes simple statistical procedures (frequency, means and standard deviations).

In addition, cross tabulation for main findings and advanced statistical tests such as:

- Chi-Square test was used to determine the relationship between type of work and age groups, also effect of losing eye on marital status, education and work with type of gender for PE patients.
- T test to assess whether the means of two groups are statistically different from each other. For ex. (QOL in relation to gender, marital status, time of losing eye), and (Satisfactions in relation to marital status) and (concerns pre/post fitting of PE with marital status)
- One way ANOVA test to determine whether there are any significant differences between the means of more independent groups. For ex: (QOL with age groups educational groups causes of losing eye, type of PE). and (Satisfactions in relation to age groups, income

groups, causes of eye losing, locations of PE services and type of PE), and (concerns pre/post fitting of PE with age groups, type of PE and location of PE service).

- P- value equal or less than 0.05 was considered statistically significant, with confidence interval (CI) of 95%.

3.13.2 Qualitative part:

Open coding thematic analysis method was used to analyze the transcripts of the open ended questionnaire and in-depth interviews of 4 key's managers for assessment of the current needs . Firstly, record the interviews and gathering the main findings from the transcripts of the interviews including only the relevant and useful portions of the interviews then extracting the themes from the summarized data and rewrite the final result as a categorization of related ideas. Then, a comparison and integration between the quantitative and the qualitative findings will be done to create rich items for discussion and representation.

3.14 Limitation of study

1- Limited studies that examined the PE service without association with the surgical conditions.

2- Most of studies which were found need cash access. That was costly to researcher.

3- UNWRA was canceled at in-depth interviewed due to the absence of PE service in its organizations.

Chapter 4

4. Results and Discussion

This chapter illustrates the findings revealed analyzing the collected data. The chapter starts by descriptive statistics which demonstrate the characteristics of the study participants; it explores the different perceptions about the questions concepts with reference to explored personal characteristics. Finally, the study findings are explained by the researcher and compared with relevant available studies.

4. I Descriptive statistics

4. Characteristics Variables of the Study Population:

All questionnaires distributed were 245 with 214 respondents and with a response rate of 87.3 %.

4.1 Personal Data

Table (4.1) shows that the mean age of respondent was 32.3 years old. Participants aged 40 years old and less are 79 %. This age period is called the reproductive age, while 21% of participants were above 40 years. The highest group is from 21 to 30 years old with 38.8%. Gender distribution of participants was: Female 26.6% and Male 73.4%. thus, the reason behind having higher rate among males can be attributed to two main reasons: first reason was the Israeli aggression caused 49.1% of lost eyes and second reason was trauma work and accident 26.2%, that explain why the percentages of males of PE patients were high 73.4%, because the workers are mostly from males and most of the Israeli aggression was in outdoor areas whereas the males are mostly there, and this is consistent with the Euro Mediterranean Human Rights statistics that talked about a number of injured people in Gaza Strip during the Gaza war in 2014, who were 10870 injuries and 50% of injured people were adult males, 19.3% were adult females, while 31% were children .(Euro Mediterranean Human Rights, 2014). Pine, etal. (2012) talked about eye loss due to accidents as a function of gender where he found the ages less than 40 years, that lost their eyes due to accidents was significantly greater in men than women, but women and men over 40 who lost their eyes due to accidents in similar percent.

Table (4.1):Distribution of demographic datafor participants.

Demographic Data	N = 214	Percent = 100.0%
Age		
20 Years old and less	37	17.3
From 21 to 30 Years old	83	38.8
From 31 to 40 Years old	49	22.9
More than 40 Years old	45	21.0
(Mean =32.3 , MD= 29.00, Std=13.28)		
Sex		
Male	157	73.4
Female	57	26.6
Marital Status		
Married	122	57.0
Not Married	92	43.0
Governorates		
North Gaza	37	17.3
Gaza	98	45.8
Mid zone	30	14.0
Khan-Younis	34	15.9
Rafah	15	7.0
Zone		
Marginalized area	58	27.1
Not	156	72.9
Place of living		
Camp	57	26.6
Village	13	6.1
City	144	67.3
Citizenship		
Citizen	85	39.7
Refugee	129	60.3
House Ownership		
Owned	201	93.9
Rent	13	6.1
Education Level		
Illiteracy	6	2.8
Primary	17	7.9
Preparatory	42	19.6
Secondary	68	31.8
University	81	37.9
Total number and percentages for each	N = 214	Percent = 100.0%

Additionally, 57% of respondents were married and 43% were not, and participants were geographically distributed as follow: Gaza City and the Northern area 63.1%; Middle Zone 14%, the Southern area (Khan Younis&Rafa) 22.9%. . geographical allocation of

research Subjects is consistent with statistical result of injuries resulted form 2014 war against Gaza Strip, whereas, statistically speaking results were as follow: Gaza governorates: Northern Area (30.4%), Gaza City (18.4%) , Middle Area (16.5%) , Khan Yuonis (14.8%) and Rafah (8.8%) (MOH, 2014). The result of this study also shows that 67.3% live in the city while 26.6% live in the camps, 72.9% living in not remote area. Finally, the research results indicated that 31.8% completed secondary education and 37.9% hold university degrees.

4.2 Working, Income and Health Insurance

Table (4.2): Work, Income and Health Insurance

Work	Before losing eye		After losing eye		post fitting of PE	
	Nu.	%	Nu.	%	Nu.	%
Student	143	66.8	64	29.9	27	17.3
Employee	16	7.5	21	9.8	28	17.9
Unemployed	23	10.7	120	56.1	75	48.1
Worker	32	15.0	9	4.2	26	16.7
Total	214	100.0	214	100.0	156 *	100.0
*Note: N= 156 is the numbers of participants have Customer and ReadymadePE only						
Income			Nu		%	
Nothing (Zero)			44		20.6	
1000 shekel or less			112		52.3	
2000 - 1000) shekel			53		24.8	
2000 shekel or more			5		2.3	
Type of Health Insurance						
Social affairs			78		36.4	
Martyrs and injured			60		28.0	
Civil			27		12.6	
Worker			22		10.3	
Military			21		9.8	
UNRWA			5		2.3	
Other (Private)			1		.5	
Cost of ocular prosthesis was covered by health insurance						
Yes			0		0.0	
No			214		100.0	
Total numberand percentages for each variable			N = 214		Percent = 100.0%	

Table (4.2) shows that the percentage of the unemployment for all participants (N=214)before losingtheir eye was 10.7% (N=23), that was increased to 56.1%

(N=120) **after losing** the eye, while **after having** the artificial eye- customer or readymade- (N=156) the **percent decreased** to 48.1% (N=75). 20.6% of the participants income was nothing "zero", while 52.3% of them income was 1000 NIC and less. The entire participants who have health insurance were: 36.4% have injury health insurance and 36.4% social affairs. All participants said that that health insurance does not cover the cost of artificial eye service. According to MOH, (2014) common insurance at insurance system was social affairs (50.1%) then followed by coverage obligatory insurance (23.8%). But Palestinian health insurance does not cover the cost of ocular prostheses under the health insurance system according to decision of the Council of Ministers (11) for the year 2006 where health services insurance does not includes the following cases: equipment and medical supplies such as artificial limbs and wheelchairs, glasses and contact lenses, hearing aids, installation and orthodontics, cardiac devices, un necessary plastic surgery for cosmetic purposes (Palestinian News & Info Agency 2006).

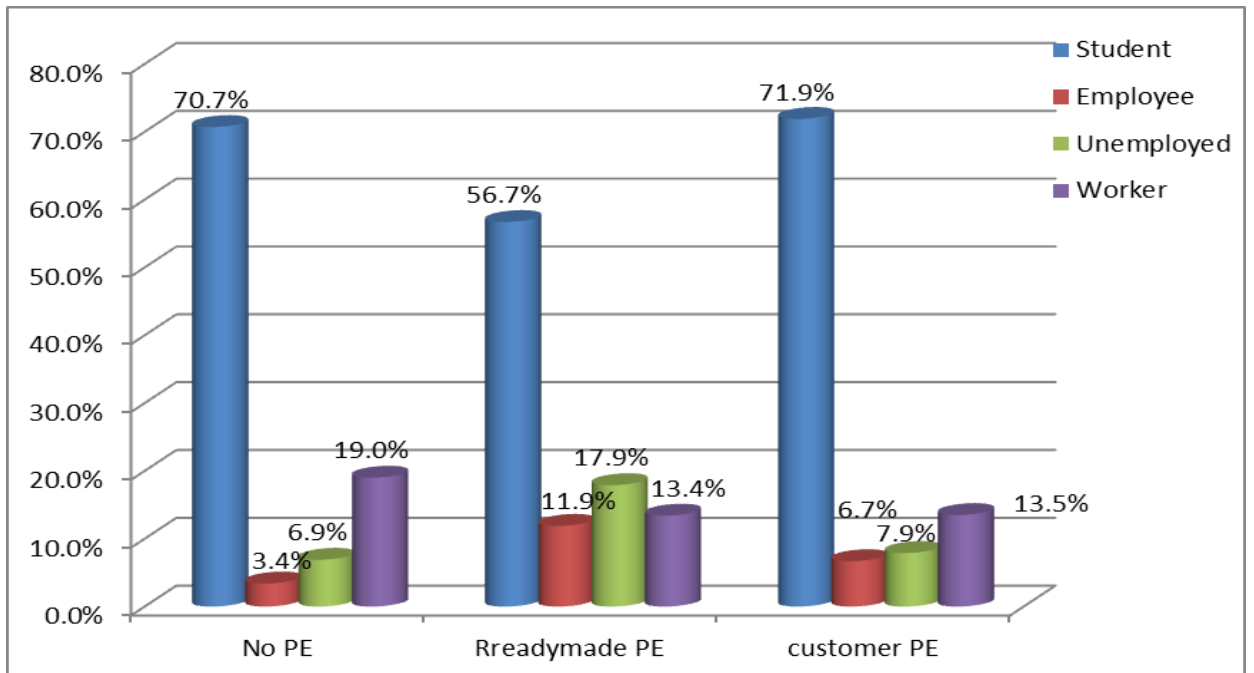
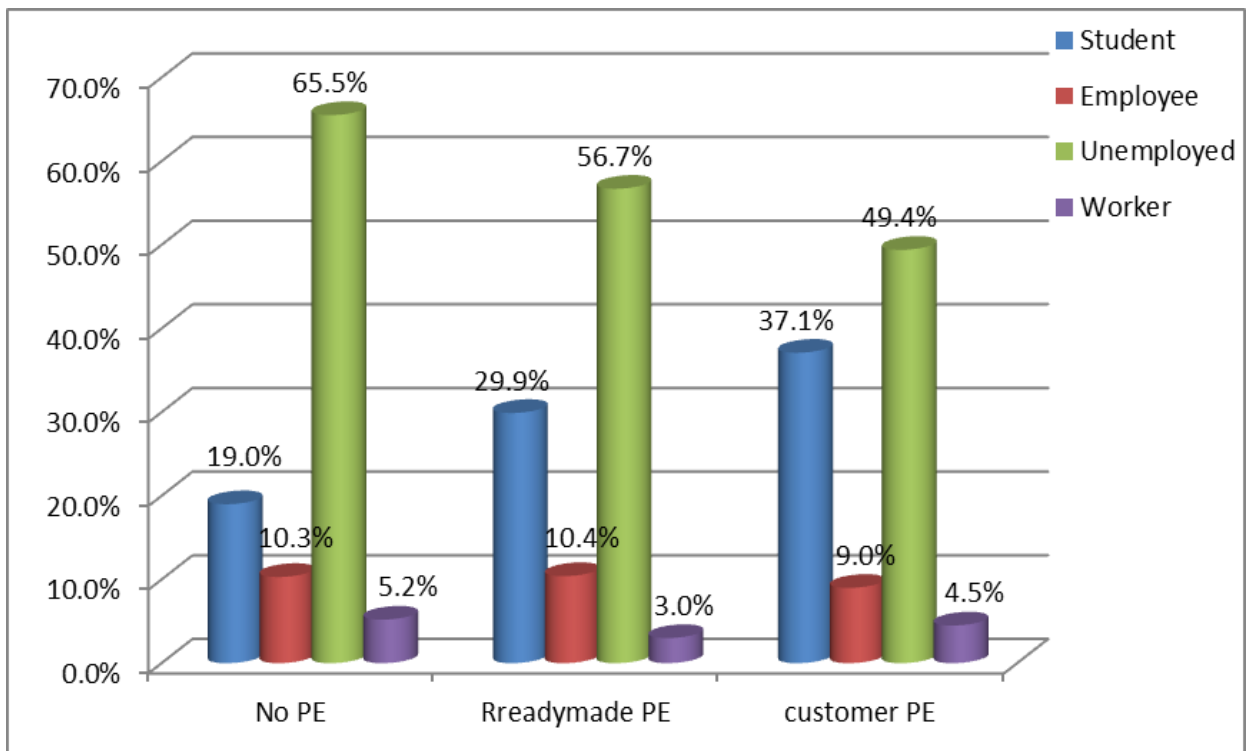


Figure (4.2) Type of PE with work groups pre losing the eye.



Figure(4.3): Type of PE with work groups post losing the eye.

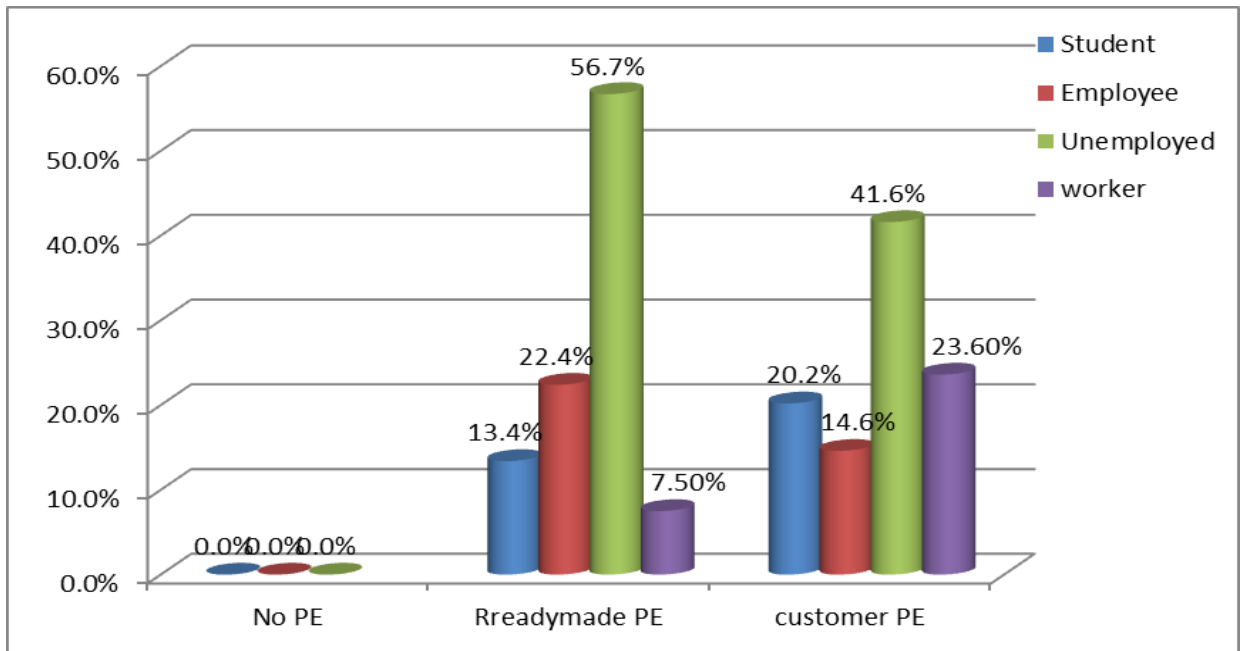


Figure (4.4) Type of PE with work groups post fitting of PE.

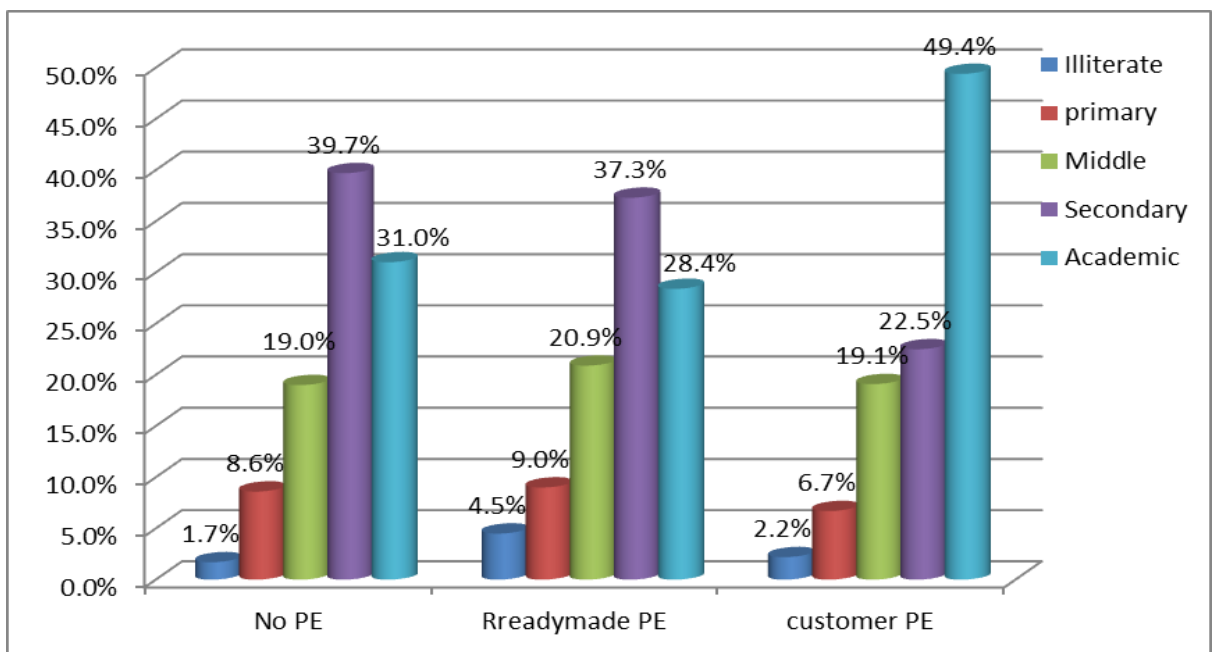


Figure (4.5) Type of PE with educational groups.

Table (4.3): The relations between type of work and age groups pre losing the eye.

N= 214		Type of work pre loss of the eye				X ²	Sig.
Age groups		student	employee	unemployed	worker		
20 years and less	Nu	37	0	0	0	80.747	0.000
	%	100	0	0	0		
From 21 to 30 Years old	Nu	70	3	3	7		
	%	84.3	3.6	3.6	8.4		
From 31 to 40 Years old	Nu	27	3	9	10		
	%	55.1	6.1	18.4	20.4		
More than 40 Years old	Nu	9	10	11	15		
	%	20	22.2	24.4	33.3		
Total	Nu	143	16	23	32		
	%	66.8	7.5	10.7	15		

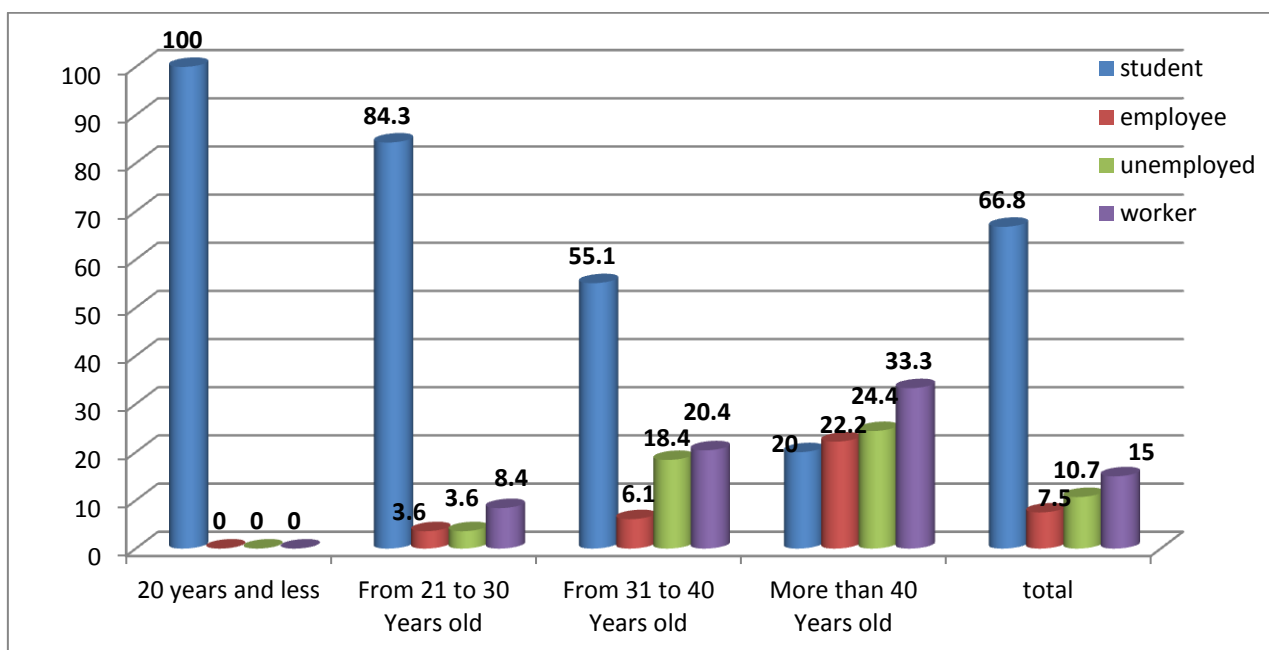


Figure (4.6) Type of work with age groups pre losing the eye.

From above results of table (4.3) and figure (4.6) show that the majority of PE patients before losing of the eye were students by 66.8% and the percentages of education among PE patients decreased gradually with age. Also results show mild percentages for employment 7.5%, unemployment 10.7% and 15% for workers. Sig = 0.000

Table (4.4): The relations between type of work and age groups post losing the eye.

N= 214		Type of work post loss of the eye				X ²	Sig.
Age groups		student	employee	unemployed	worker		
20 years and less	Nu	21	1	14	1	37.089	0.000
	%	56.8	2.7	37.8	2.7		
From 21 to 30 Years old	Nu	30	6	45	2		
	%	36.1	7.2	54.2	2.4		
From 31 to 40 Years old	Nu	11	6	27	5		
	%	22.4	12.2	55.1	10.2		
More than 40 Years old	Nu	2	8	34	1		
	%	4.4	17.8	75.6	2.2		
Total	Nu	64	21	120	9		
	%	29.9	9.8	56.1	4.2		

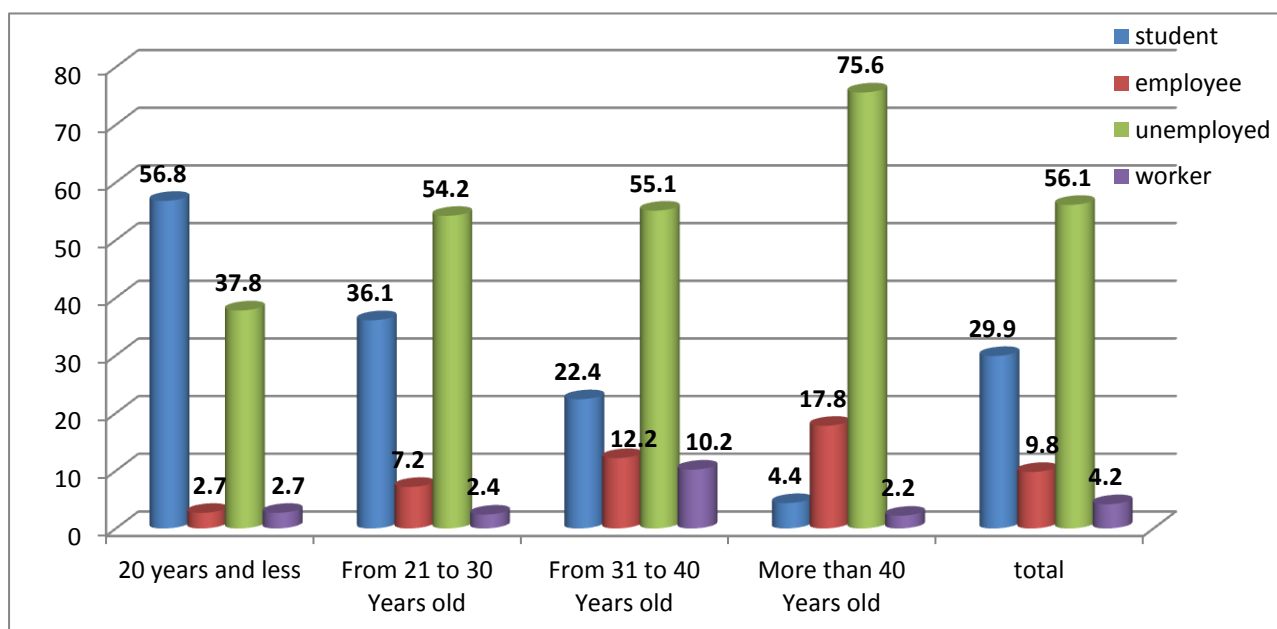


Figure (4.7) Type of work with age groups post losing the eye.

From above results of table (4.4) and figure (4.7) show that the majority of PE patients **after losing of the eye** became unemployed by 56% this attributed to two reasons: the high rate of unemployment rate in Gaza Strip and the negative influences of losing of the eye. And the percentages of workers decreased from 15% to 4.2%, while the percentages of education among PE patients decreased gradually with age. Sig = 0.000

Table (4.5): The relations between type of work and age groups post fitting of PE.

N= 156		Type of work post fitting of the PE				X ²	Sig.
Age groups		student	employe	unemployed	worker		
20 years and less	Nu	15	2	4	2	61.352	0.000
	%	65.2	8.7	17.4	8.7		
From 21 to 30 Years old	Nu	10	10	29	14		
	%	15.9	15.9	46	22.2		
From 31 to 40 Years old	Nu	2	8	17	10		
	%	5.4	21.6	45.9	27		
More than 40 Years old	Nu	0	8	25	0		
	%	0	24.2	75.8	0		
Total	Nu	27	28	75	26		
	%	17.3	17.9	48.1	16.7		

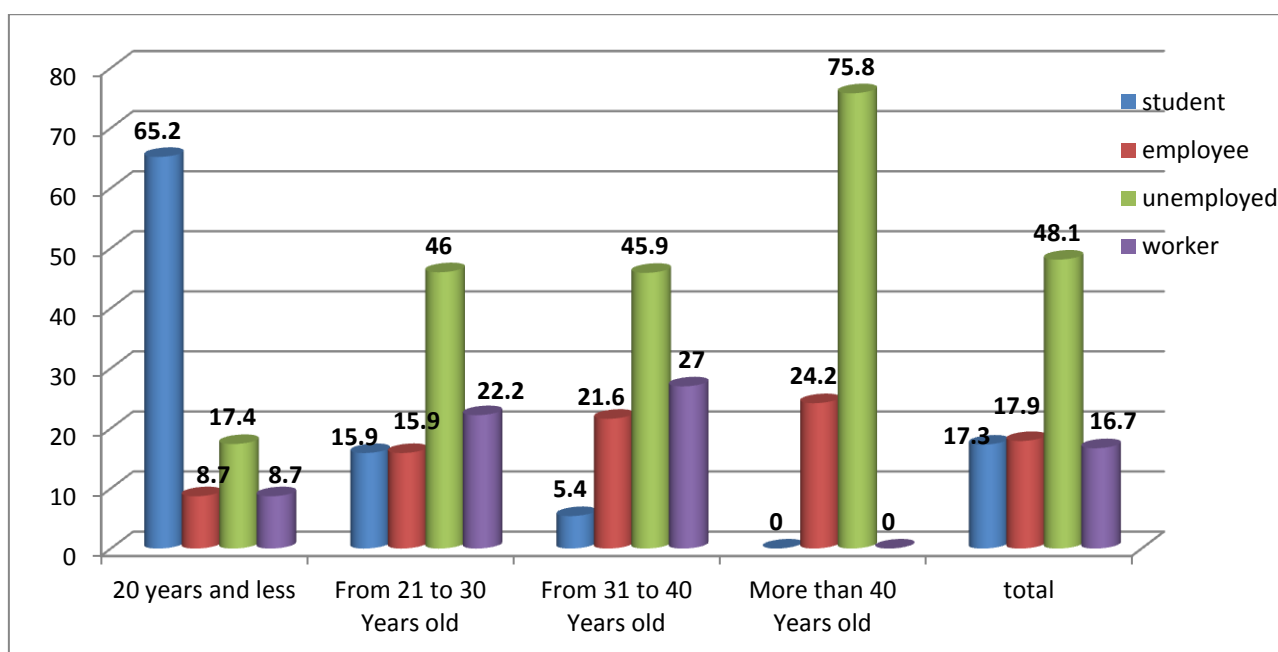


Figure (4.8) Type of work with age groups post post fitting of PE.

From above results of table (4.5) and figure (4.8) show that the majority of PE patients **after fitting of the PE** stilled unemployed and the rate decreased from 56% to 48% this is attributed to the following reasons: the high unemployment rate in the Gaza Strip 38% and dependency of PE patients on financial benefits from Social Affairs, in addition to, most of PE patients feared from doing any work because may be led to losing of other sound eye and the psychological effects from differences between PE and sound eye as in readymade PE, that prevent PE patients from work and facing the others. Also results show that there is mild increasing in employment rate from 9.8% to 17.9% and rate of workers from 4.2% to 16.7%. Sig = 0.000

4.4 The effect of eye losing

Table (4.6): The effect of eye losing

Time of losing eye before or after marriage	Nu.			%		
Before	152			71.0		
After	62			29.0		
Bad effect of losing eyes on Marital Status	male	female	N	Male %	Female %	%
Yes	118	50	168	55.1	23.4	78.5
No	39	7	46	18.2	3.3	21.5
Bad effect of losing eyes on education status	male	female	N	Male %	Female %	%
Yes	83	34	117	38.8	15.9	54.7
No	74	23	97	34.6	10.7	45.3
Bad effect of losing eyes on work status	male	female	N	Male %	Female %	%
Yes	121	38	159	56.5	17.8	74.3
No	36	19	55	16.8	8.9	25.7
Total number and percentages for each	N = 214			Percent = 100.0%		

Table (4.6) when asking about "Time of losing eye before or after marriage" 71% of participants said that they lost their eye before marriage, while. Moreover, 78.5% of PE patients said that eye loss has bad influence on their marital status, 54.7% stated bad influence on education and 74.3% on working status. Rasmussen, (2010) found that, the percentages of affected patients on working conditions from all participants were 25% retired or changed to part-time jobs due to an eye disease or acquired unilateral vision, and the percentage of divorced or separated patients of eye removal were **twice** than in general population. Those negative influence indicators are higher among males more than females, and the bad influence indicators are as follow: on marital status (male = 55.1%, female = 23.4 %), educational status (male =38.8%, female =15.9%) and work status (male = 56.5%, female =17.8%). The variation between males and females in this regard can be attributing to cultural values. Naturally in Arabic cultural males are considered to be the main stakeholder in marriage, work and educational. Another reason for that is that the number of the participants of PE patients is higher among men than women (male N=157, % = 73.4), (females N=57, % =26.6).

High levels of anxiety and depression were decreased with PE patients who are older, married; having children and emphasize belief that prosthesis devices had highly influenced on social and interpersonal relationships (McBain, 2014).

4.5 Health Information

Table (4.7): Health information

Health Information	Nu.	%
Cause of losing Eye		
Congenital	27	12.6
Pathological	26	12.1
Israeli aggression injury	105	49.1
Trauma / Accident	56	26.2
Total	214	100.0
Having artificial eye		
Yes	156	72.9
NoPE	58	27.1
Total	214	100.0
Artificial eye is:		
Costumer	89	57.1
Readymade	67	42.9
Total	156	100.0
Type of artificial eye		
Standard	108	69.2
Shell	48	30.8
Total	156	100.0
Financial Source of having PE		
My self	27	17.3
By organization	129	82.7
Total	156	100.0
Time of wearing PE		
Less than one year	40	25.6
From 1 to less than 2 years	50	32.1
From 2 to 5 Years	37	23.7
More than 5 Years	29	18.6
Total	156	100.0

Table (4.7) shows that 49.1% of participants' eye losses were due to the Israeli aggression and 26.2% of them because of trauma/ accident and 12.6% pathological and 12.1 were congenital. That result is inconsistent with Rasmussen M. (2010) who found that, the most indications for eye removal in Denmark were painful blind eye (37%) and neoplasm (34%). This difference is due to the absence of military aggression in Denmark. The result in this study showed that 72.9% of the participants have an artificial eye while 27.1% do not have. 57.1% have costumer eye while 42.9% of them have a readymade PE, about

69.2% of the patients have a standard eye, and 30.8%, have shell PE. This agrees with the percentages of main causes for eye loss (Israeli aggressions and trauma/ accidents represent 75%), where these causes did not lead to shrinking or atrophy of the eye that need shall PE, but these causes lead mainly to evisceration or enucleation which often needs a standard PE. 57.7% of research participants wear PE for less than 2 years, this linked directly with the percentages of patients whom had PE from Al Radwan centers (68%). While 82.7% of participants said that the financial source was from organizations, this indicates that the chance and ability of PE patients to gain PE service are linked mainly with the affordability and availability of funds for PE projects.

4.6 Prosthetic eye care

Table (4.8): Prosthetic eye care

Prosthetic eye care	Nu.	%
Need Help for removing it		
Yes	13	8.3
No	143	91.7
Washing hands before remove it		
Yes	105	67.3
No	9	5.8
Sometimes	42	26.9
Times of washing eye in the week		
Every day	83	53.2
Sometimes	70	44.9
Never	3	1.9
Removing PE at the night		
Yes	58	37.2
No	49	31.4
Sometimes	49	31.4
Times of polishing and sterilizing of PE		
Yes	16	10.3
Sometimes	2	1.3
No	138	88.5
Suffering from deformation in eye		
Yes	53	24.8
No	161	75.2
Total number and percentages for each	N = 156	Percent = 100.0%

Table (4.8) shows that 91.7% of participants did not need any help to remove PE, and the result shows that 67.3% of the participants wash their hands daily before removing the eye, while 26.9% of sometimes washing it, and 53.2% wash their prosthetics eye every day. 37.2% of the participants remove the PE at night while 31.4% sometimes did not remove it at night. 88.5% of the participants do not sterilize the PE.

Adding to that, 24.8% of the participants suffer from deformation in their eyes due to two main reasons: eye loss due to Israeli aggression (49.1%) and trauma/ work accident (26.2%). Both conditions cause deformation mainly for face, orbital, and eye lids.

4.7 Health care providers

Table (4.9): Health service provider

	N=214	% 100
Prosthetic eyes services providers		
Governmental	37	17.3
Medical center	10	4.7
NGOs	163	76.2
Others	4	1.9
Total	214	100.0
Centers for PE services provision		
Ophthalmic hospital	33	15.4
European hospital	3	1.4
optical center	10	4.7
Al Radwan	146	68.2
Bit al samid	14	6.5
Others	8	3.7
Total	214	100.0
Distance between home and Health Services		
Short	58	27.1
Moderate	61	28.5
Long	72	33.6
very long	23	10.7
Total	214	100.0

Table (4.9) shows that 76.2% of participants receive the PE services at NGOs service providers, while 17% of them received their at Governmental Sector service provider. The variation here can be attributed for the fact that Al Radwan center, NGO, provided PE services to 68.2% of the targeted research participants. 44.3% of the research respondents said that the distance from their home and the place of PE services long and very long for

them because some of them travel from Rafah, Khan-Younis, the Middle Area and the Northern of Gaza to the main two PE service providers in Gaza City (Al Nasser ophthalmic hospital and Al Radwan center).

4.8 Quality of life according WHO Standards

According to WHO (1998), The measurement of health and the effects of health care must not only include an indication of the changes in the frequency and severity of diseases but also an estimation of well-being and this can be assessed by measuring the quality of life related to health care . According to Biordi, *et al* (1995) said that, facial organs especially the eye plays a very significant role in determining facial appearance, thus prosthetic rehabilitation is the most important process to restore QOL, in order to run effective rehabilitation process social and psychological needs are more essential aspects. In this regard we must bear in mind that visible deformity of the eye leads to lower self-esteem, negative self-image and social isolation in life. On the other hand, Atay, *et al.* (2013) according to his findings showed that patients with facial prostheses had lower scores in overall QOL, physical and environmental health domains. Socio-demographic and clinical characteristics such as age, gender, income, localization of the defect, and age of facial prosthesis were associated with patients' QOL. These findings may provide valuable information about the specific health needs for these patients that may have an effect on their well-being. His results and finding were as following: the mean for Physical status 53.5%, psychological status 36.8%, social status 63.8 and environmental status 57.9%.

The research's questionnaire that explores quality of life was scaled according WHO Standards, which in turn consists of four main domains; physical, psychological, social relation and environmental status. The four domains scores denote an individual's perception of quality of life in each particular domain.

4.8.1 Physical Activity:

Physical activity domain consists of seven questions and the scoring criteria are as follow; not at all (1), little (2), moderate amount (3), very much (4), extreme amount (5). Table (4.9) shows the result of physical status of the study respondents.

Table (4.10) shows that the weighted mean of satisfaction of physical activity was 68.69%. The highest paragraph was "ability to get around " with weighted mean 72.1% followed by

"ability of sleeping" with weighted mean 62.2%, while the lowest paragraph weighted mean was "need any medical treatment to function in your daily life" with weighted mean 34.8%.

Table (4.10): Physical Activity status.

Questions		Not at all	Little	Moderate amount	Very much	Extreme amount	Weighted Mean
To what extent do you feel that physical pain .prevents you from doing what you need to do?	Nu.	98	48	33	28	7	41.1
	%	45.8	22.4	15.4	13.1	3.3	
How much do you need any medical treatment to function in your daily life?	Nu.	126	43	23	15	6	34.8
	%	59.2	20.2	10.8	7	2.8	
Do you have enough energy for everyday life?	Nu.	33	53	35	45	48	62.1
	%	15.4	24.8	16.4	21	22.4	
How well are you able to get around?	Nu.	21	32	29	70	62	72.1
	%	9.8	15	13.6	32.7	29	
How satisfied are you with your sleep?	Nu.	27	60	22	72	33	62.2
	%	12.6	28	10.3	33.6	15.4	
How satisfied are you with your ability to perform your daily living activities?	Nu.	35	55	27	57	40	61.1
	%	16.4	25.7	12.6	26.6	18.7	
How satisfied are you with your capacity for work?	Nu.	33	64	28	45	44	60.3
	%	15.4	29.9	13.1	21	20.6	
Weighted Mean= 68.69 , Median = 65.71 , Std = 18.48							

There is a strong relationship between types of prosthetic eye (No PE, readymade and customer eye) with physical or bodily functions. The physical status of PE patients depends directly on the patients' psychological status and amount of their motivation or their energy in daily life. The researcher explain the results that, mostly of No PE patients with losing eyes or readymade PE patients complain from mismatched characteristics with other sound eye specification in terms of appearance, size, color , direction and more secretions or discharges that draining out during the process of winking or suddenly and repeated falling during the day specially in front to other. Such things lead to bad-mooded-thatare unable to function in their daily life, as a result of lacking happiness and confidence in front people. Consequently, this leads to lack of confidence of themselves, isolation, inferiority feelings and inability to express their positive energy. And according to PE

patient's perceptions, patients preferred keeping indoors and usually get out from their houses often at night wearing black sunglasses even at night to hide their lost eye. The reason behind this is that they can't confront people with empty orbit or with readymade PE which is not perfectly manufactured and that does not match their sound eye properties. On the other hand, patients who use customer artificial eyes with no differences between customer PE and the other sound eye acted normally front of others, enhancing confidence and ability to meet people without any worries; they feel as they are normal persons, thus leading to more motivation and more positive energy to accept their daily life with vigorously and more confidence. Also sleeping caserns is an important thing for PE patients, especially for patients who lost their eyes and didn't have any compensatory devices like PE. Readymade PE patients were more worried about their severe secretions, bad smelling, low quality of material and falls or loss PE during sleeping. Those facts force readymade PE patients to remove their PE and sleep with an empty eye orbit. More complicated conditions when patients were forced to remove their PE during sleeping beside their couple which may be he/she is afraid of her/his bad appearance with empty eye orbit or without PE, leading to adversely impact at emotional behavior between two couples. On the opposite side, customer PE with higher degree of matching with sound eye, patients can be sleeping with their PE, without any fears of PE dropping during sleep, and not be worried about the discharge and have reassuring sleep.

Patients also worry about their future and their lives, which would be better if they hadn't lost their eyes especially if these patients don't have jobs due to loss of their eyes. They feel with deficit and insufficiency to work and become more dependent on their families or their society. Rasmussen, (2010) found that, the percentages of affected patients on working conditions from all participants were 25% retired or changed to part-time jobs due to eye disease or acquired unilateral vision.

A fundamental problem for PE patients is their focus on their eye that will be removed and pain that is resulted from eye removal surgery and the complications after that surgery; this pain when disappears after some weeks, and there is no ocular muscle pain and no organic pain that have main impact on physical movement, most of PE patients were not having physical pain that prevents them from performing their work, except those patients that have disabilities resulting from war injuries; so they have physical pain. All the PE patients have variations scores in psychological pain which has a strong influence on their ability to deal with the public and people. Also the majority of the sample are young, they did not

suffer from any chronic diseases such as diabetes and hypertension, even so, the removal of the eye does not need any medications except for inflammation and secretions which had negatively effect on some works like more cleaning of PE that needs to remove of PE several times which lead to isolation from other during cleaning process. So, generally remove of the eye effects on the type and quality of work and job.

Patients with vision impairment or who lost their vision partially or completely like in losing eye conditions, had a high risk of disability and bad influence on their functional status, that ranges from physical disability to social isolation (Wallhagen, *et al* 2001), (Whitson, *et al* 2007). In addition, patients suffer from fear of falling (FoF) that is a remarkable sign for patients in conditions of restriction and decreased physical activity, PE patients need more emphasis on the importance of interventions that aim at reducing FoF to reduce inactivity of lifestyle which is associated with vision loss. So safety and effectiveness strategies should be implemented to reduce severity of FoF and replace physical inactivity with low-risk physical activity (Nguyen, A *et al* 2015). This demonstrates that, there is a positive relationship between the physical activity and the following QOL domains: functional capacity; general QOL, autonomy; past or present or future activities; psychological; and mental health. Thus we need to promote the physical status to improve the good impact on functional capacity and mental health that are associating with a positive perception of general QOL (Vagetti, *et al* 2014).

Demont-Heinrich, (2009) found that, there is an association between: 1) physical activity and psychological health; 2) physical activity and quality of life. The writer added that patients with poorer mental status had poorer quality of life and had physical inactivity with no adequate time for leisure activity.

To conclude, bad psychological status for PE patients leads to depression and increases the risk of incident disability. And excess risk led to reduce and depress persons' physical activity and social interaction (Penninx, *et al.* 1999).

4.8.2 Psychological Status:

Table (4.11): Psychological

Questions		Not at all	Little	Moderate amount	Very much	Extreme amount	Weighted Mean
How much do you enjoy life?	Nu.	40	49	49	44	32	58.0
	%	18.7	22.9	22.9	20.6	15	
To what extent do you feel your life to be meaningful?	Nu.	34	55	43	46	36	59.5
	%	15.9	25.7	20.1	21.5	16.8	
How well are you able to concentrate?	Nu.	38	46	52	48	30	58.7
	%	17.8	21.5	24.3	22.4	14	
Are you able to accept your bodily appearance?	Nu.	62	52	16	29	55	56.5
	%	29	24.3	7.5	13.6	25.7	
How satisfied are you with yourself?	Nu.	28	52	32	62	40	60.3
	%	13.1	24.3	15	29	18.7	
How often do you have negative feelings such as blue mood, despair, anxiety, depression	Nu.	50	26	35	47	56	63.0
	%	23.4	12.1	16.4	22	26.2	
Weighted Mean= 58.82 , Median = 53.33 , Std = 25.13							

Table (4.11) shows that the weighted mean of satisfaction for all psychological status according to research respondents was 58.82%. The highest weighted mean for the paragraph "how often you have negative feelings such as blue mood, despair, anxiety, depression" was 63.0%, followed by how satisfied are you with yourself with a weighted mean 60.3%, followed by " To what extent do you feel your life to be meaningful? " with a weighted mean 59.5% , then " How well are you able to concentrate?" with a weighted mean 58.7%, then followed by " How much do you enjoy life? " with a weighted mean 58%, while the lowest weighted mean for " Are you able to accept your bodily appearance?" with 56,5 %.

This study showed that psychological satisfactions for prosthetic eye patients is increased positively with customer PE which has completely similar fine details as the other sound eye ,and devoid of any noted differences in front of others, devoid of secretions , devoid of sudden falling in front people and good sleeping ability with it. Because of the previously mentioned factors that associated with customer PE, makes patients closer to normal people in appearance, behavior, not afraid of confronting an interacting with others at work, home and community. Such positive attitude as a result of being sure that no one around them knows about their lost eyes or having PE. Thus, people are not dislike or

afraid of them. This makes such patients capable of enjoying their lives; accept their external appearance without embarrassment and increases self-satisfaction, self-confidence and limited feelings about blue mood, despair, anxiety, and depression.

On the other hand, those who lost their eyes and cannot have artificial eye suffer from bad psychological status especially when dealing with the public and listen to their verbal or actual comments and dealing with some people that dislike them and avoid dealing with them due to their bad appearance and unwanted facial features that results from the empty or deformation of orbital cavity. Such negative attitudes contributes feelings of inferiority, lack of confidence, blue mood, isolation, hate of dealing with others, less satisfaction about themselves and finally decreased desire to enjoy their present and future live. All of disadvantages features of losing the eye on No PE patients are mostly presents with readymade PE patients, most of them lack the similarity with sound eye and expose to fall of PE, discharges, bad smell of secretions, sometimes readymade PE is deviated to inner or outer side and has larger or smaller size than sound eye, all these negative impacts force PE patients to avoid dealing with society, feel dissatisfied about themselves and have more negative emotions that generates inner them hate of life. So, the psychological status for PE patients linked with their satisfaction about PE service and the similarity of PE to their sound eye, where, majority of studies reported that, there is a positive association between health status and satisfactions. results showed that patients with higher satisfaction about health care services they received are also highly satisfied with other aspects of their lives, while those patients with were less satisfied about their health care services had poor psychological status because they may have troubles in getting relief from their pain and distress (Berkanovic, *et al* 1976), (Roberts, *et al* 1983), (Greenley, *et al* 1982). Thus, any eye surgical intervention can cause a unilateral loss of vision needs good rehabilitation for losing eye patients from acquired surgical complications resulting from new clinical situation, according to bioethical principles, it is reported that PE patients who have physical suffering (especially pain) and the psychological stress (caused by loss of unilateral vision and facial aesthetics) can be significantly reduced by fitting PE (Costea, *et al.* 2016). with good Fitting of PE in orbital cavity and customized according to tissue of orbital cavity bed and individualized aesthetic requirements, and it is consider highly positive approach to recover the cosmetic appearance and psychological well-being of PE patients (Taylor, 2000). Moreover, good appearance of PE leads to improving physical functioning and psychosocial status by reduce feelings with depression, shame,

shyness, social anxiety, social avoidance, hiding empty orbital cavity, sadness, insecurity feeling and fear, poor quality of life (Goiato, *et al.* 2013), (Wang, *et al.* 2012). So, whenever the similarity levels of PE with features of sound eye are good, the improvements in psychological status for PE patients are increased. This interprets why the customer PE service enhances the beauty and functional ability better than the readymade PE. Although PE patients cannot see with this prosthesis, but it restores their self-esteem and allows more confidence in front of people instead of disappearing behind their dark glasses most of the time (Doshi, & Aruna, 2005).

4.8.3 Social Relationship:

Table (4.12): Social Relationship

Questions		Not at all	Little	Moderate amount	Very much	Extreme amount	Weighted Mean
How satisfied are you with your personal relationships?	Nu.	23	45	29	70	47	66.8
	%	10.7	21	13.6	32.7	22	
How satisfied are you with your sex life?	Nu.	15	49	68	65	17	61.9
	%	7	22.9	31.8	30.4	7.9	
How satisfied are you with the support you get from your friends?	Nu.	14	41	39	77	43	68.8
	%	6.5	19.2	18.2	36	20.1	
Weighted Mean= 65.82 , Median = 66.67 , Std = 20.34							

Table (4.12) shows that the weighted mean of all satisfaction about social relationship was 65.82%. The highest weighted mean was 68.8% for "how satisfied are you with the support you get from your friends" and for the paragraphs "how satisfied are you with your personal relationships" with mean 66.8 %. The lowest mean was 61.9% for the paragraphs "are you satisfied with your sexual life ".

PE patients had lower quality of life than healthy individuals. This finding was according to patients' own perceptions about their social relationships, which were negative without using the prosthetic eyes. That's perceptions reduced their quality of life and increased their anxiety and depression (Ahn, *et al.* 2010) and causes more suffering resulting in many psychological and social problems like negative feelings or avoiding to show their abnormal face to their partner without PE. Thusthose patients need special programs to improve the interaction between various underlying cognitive self-schemas, social and cultural context (Newton, *et.al.* 1999).

This study showed a strong relationship between the type of PE and social relationships status. There is strong correlation between customer PE patients, who have perfect matching details with the other sound eye and lack of noticeable differences of PE from others and disappearance of verbal or actual comments to them during the wearing of customer PE, all of these factors give patients psychological support and strong motivation to increase their ability to make friendly and personal relationships based on non-aversion or feeling compassion towards them. customer PE which is fabricated for the unioocular patients had successfully restored patients' esthetics and improved their social acceptance thereby, improving their quality of life (Aggarwal, *et al.* 2012). The result showed that singles customer PE patients (will be married in the future), and married, increased their satisfaction in sexual relationship because mainly it is based on cosmetics appearance, especially facial beauty which is free of any distortions, deformations that was caused by losing the eye and empty of orbital cavity, no secretions and unpleasant smells led to increase their confidence. Adding to that customer PE patients their external appearance characterize with no differences between both eyes as a result to comprehensive matching details, in addition to, the partner's acceptance to PE patients' appearance. Also, there is no sign of distortion or loss of the eye or PE falling during sexual intercourse. The Use of customer PE has been an advantage to PE patient who cannot have enough money to pay for the available expensive treatment options. Prosthetic rehabilitation is advantageous by relatively quick, reversible and medically uncomplicated. So, the ocularist should provide perfect prosthetic treatment and should also consider patients' psychological aspects of his consideration. The customer PE is esthetic and it is socially acceptable and comfortable for patients with an ocular defect, that leads to improve psychological well-being and the personality of the patient (NareshShetty, ManojShetty, 2012) (Singh, *et al* 2011).

This is other way around of No PE or readymade PE patients with unmatched details and low quality specifications because the eye has an essential function in perception, but losing the eye leads to distorted emotional, psychological, behavioral and social responses that leads to an adverse effect on quality of life, feeling of societal discrimination, especially if the patients don't have acceptable prosthesis (Lekay-Adams, *et al.* 2014).

4.8.4 Environment:

Questions		Not at all	Little	Moderate amount	Very much	Extreme amount	Weighted Mean
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How safe do you feel in your daily life?	Nu.	30	40	55	62	27	61.5
	%	14	18.7	25.7	29	12.6	
How healthy is your physical environment?	Nu.	7	25	41	84	57	74.9
	%	3.3	11.7	19.2	39.3	26.6	
Have you enough money to meet your needs?	Nu.	88	69	35	18	4	39.5
	%	41.1	32.2	16.4	8.4	1.9	
How available to you is the information that you need in your day-to-day life?	Nu.	52	40	42	56	24	56.3
	%	24.3	18.7	19.6	26.2	11.2	
To what extent do you have the opportunity for leisure activities?	Nu.	54	49	33	38	40	56.4
	%	25.2	22.9	15.4	17.8	18.7	
How satisfied are you with the conditions of your living place?	Nu.	10	22	25	109	48	75.2
	%	4.7	10.3	11.7	50.9	22.4	
How satisfied are you with your access to health services?	Nu.	11	16	28	95	64	77.3
	%	5.1	7.5	13.1	44.4	29.9	
How satisfied are you with your transport?	Nu.	8	35	30	93	48	72.9
	%	3.7	16.4	14	43.5	22.4	
Weighted Mean= 64.24 , Median = 65.00 , Std = 15.20							

Table (4.13): Environmental status

Table (4.13) shows that the weighted mean of all satisfaction about Environment was 64.24% which is considered a poor result, this result is due to the current situation of Gaza Strip, where extended years of siege caused severe deterioration of many life aspects (economical, educational, marital, social...etc.). The highest weighted mean for the paragraphs "How satisfied are you with your access to health services" with 77.3% score which is attributed to small geographical area of Gaza Strip and availability of many Governmental, UNRWA, NGOs and private health centers. Regarding the satisfaction of the conditions of living place the weighted mean was 75.2%, while weighted mean of "healthy physical environment" was 74.9%, and these findings came as result of residency place of study's participants; where 67.3% of respondents were cities residents.

The lowest weighted mean was 39.5% reported in regards to affordability of enough money to meet PE patients' needs, where these findings agreed with PSB finding in the Gaza Strip about the poverty rate according to household consumption at the end of 2015 which was (38.8%), while unemployment rate was (41.0 %) (PCSB, 2015). This support the need to protect rights of PE patients as a persons with disability, where, if disabled people were able to achieve equal rights and opportunities this would contribute to reduce

poverty rate for Society as a whole (Yeo & Moore, 2003). PE patients suffer from poverty as others in Gaza Strip, where the percentage of poverty in Gaza Strip according to (PCBS 2015) was 38.3%. That makes patients expressing their financial status which does not meet basic needs in their lives, where getting to PE services is on the top of their priorities. PE services are, for them, a gate of hope for many things like getting a job, integrating with their society, being able to marry, completing their education, but the expensive cost of PE service stopped that's hope. In addition, it was noted that customer PE patients have more satisfaction than other types of PE in terms of their financial condition for two reasons, the first reason is that 82.7% of them obtained the first important need PE service through charities organizations or NGOs projects. The second reason is that some of them have jobs after fitting suitable PE with a perfect matching to sound eye that helps them to confirm that the financial status according to their perspective was enough to meet their residual basic needs. moreover, the weighted mean for the opportunity to enjoy leisure time activities was 56.4 % which can be attributed to the ability of PE patients to get out from their houses without fearing about confronting people, hearing bad verbal comments, a significant rate of psychological side effects based on their satisfactions about PE and its degree of matching with other sound eye. This agreed with Demont-Heinrich, (2009) findings, where patients with poorer mental status had poorer quality of life and had physical inactivity in addition to not having adequate time for leisure activity. Rasmussen, M (2010) said in her study, that 39.5% of eye removal patients stopped their participation and exercising in leisure activities due to their eye removal. So, PE patients lack to ability to get a leisure activities like others, Although, there are good affordability of luxury places in Gaza Strip, like parks and swimming pools, seacoast and sports clubs and recreational games cities. Some of them don't prefer to leave their houses; they are feeling of low mood and low physiological status or lack of desire to meet people without PE as in NoPE or with inadequate PE mismatching with sound eye as in readymade PE. On the other hand, patients with customer PE have good matching and fine details with sound eye, they have a greater capacity to walk and best useful from luxury places with other as persons without disabilities.

Patients of PE mostly felt that their life is unsafe due to the majority of them 75 % who lost their eyes as a result of Gaza wars, accidents at work place and roads. The sudden loss of the eye generates inside them unsafe sensation and lacking of security. And they could be any time lose other eyes for any reason; they became closer than others to blindness

condition. So the majority would prefer a safe business that does not have any side effects or bad influence on the other sound eye and they fell will be safe inside their houses than being in any others places

In conclusion, social isolation can occur at four layers of social concept. The outermost social layer is the community, where someone feels integrated or isolated from the larger social structure. The next is the layer of organization (work, schools, churches), followed by a layer closer to the person, that is Confidantes (friends, family, significant other). Finally, the innermost layer is that of the person, who has the personality, the intellectual ability, or the senses with which to apprehend and interpret relationship (Lin, 1986)

4.8.5 Summary table of Quality life table:

Table (4.14): Summary table of Quality life table

Domains	Mean	MD	Std
Physical Activity	68.69	65.71	18.48
Psychological	58.82	53.33	25.13
Social Relationship	65.83	66.67	20.34
Environment	64.24	65.00	15.20
Total	64.38	60.83	17.49

Table (4.14) shows that the total weighted mean Quality of life for PE patients was 64.38%. The highest domain was physical activity with weighted mean 68.69% followed by Social Relationship with weighted mean 65.83%, while weighted mean for the Environment status was 64.24%. The lowest domain was for the psychological status with weighted mean 58.82%.

Finally, it is found based on the research results that customer PE service increase and promotes satisfaction about QOL and its domains physical, psychological, social relationship and environmental status for PE patients. Customer PE service is considered as a rehabilitation device to increase reintegration of PE patients in their society, with their families and self-steam inside them, and to be more close to manner and behavioral of persons without disabilities. (Artopoulou, *et al.* 2006).

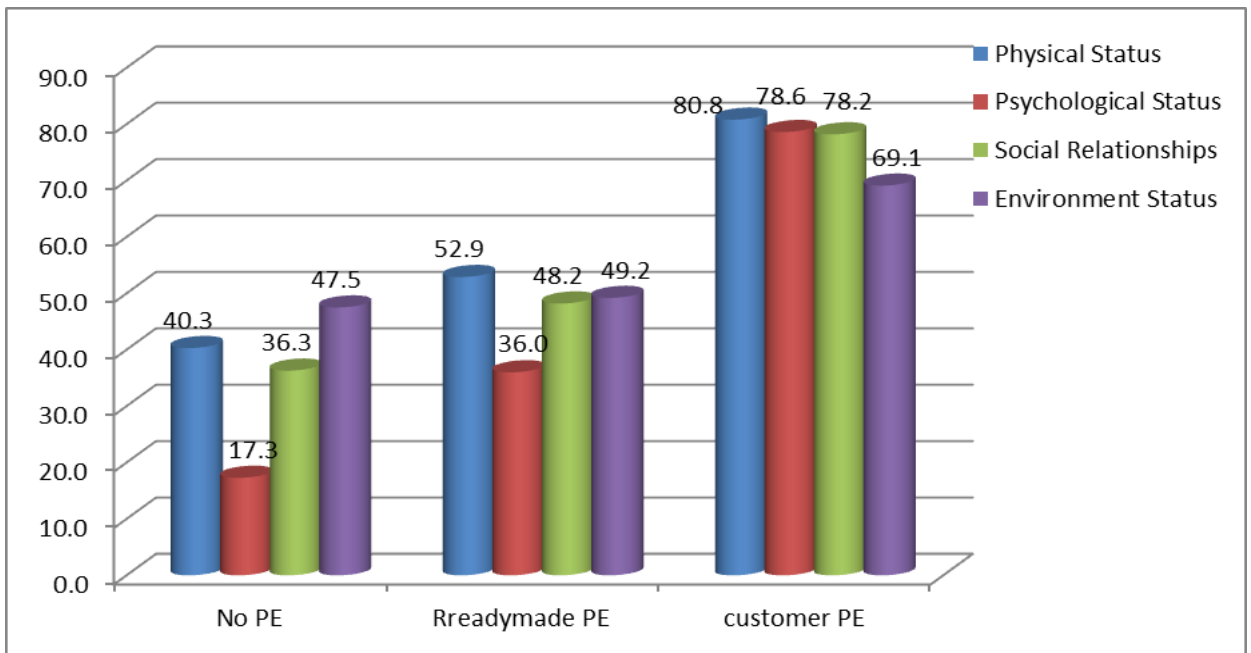


Figure (4.9) Type of PE with QOL domains.

4.9 Patients' satisfaction about artificial eye services

The following parts of results introduce findings of the patients' satisfaction questionnaire. The scores value was as the following strongly unsatisfied (1), unsatisfied (2), no opinion (3), satisfied (4), strongly satisfied (5), The satisfaction scale has seven domains; General satisfaction, technical quality, interpersonal manners, communication, financial aspects, time spent with doctors, accessibility and convenience.

4.9.1 General Satisfaction:

Table (4.15): General Satisfaction.

Questions		Strong Unsatisfied	Unsatisfied	No opinion	Satisfied	Strong Satisfied	Mean	Std
The medical care I have not been receiving is just about perfect	Nu.	8	30	29	51	96	3.92	1.22
	%	3.7	14	13.6	23.8	44.9		
I am dissatisfaction with some things about the medical care I receive	Nu.	103	62	17	30	2	4.09	1.10
	%	48.1	29	7.9	14	0.9		
Total							4.00	1.01

Table (4.15) shows that, total mean of general satisfaction was 4.0 (80.0%). The mean of participants' satisfaction about the received medical care was 4.09 (81.8%) while, the mean of their satisfaction about the perfection of the received medical care was 3.92 (78.4%).

Patient satisfaction is a complex, multidimensional concern that needs to be approached from several different views. It is very hard to determine one aspect of the patient's satisfaction without correlation to other dimensions, for example: the satisfaction about doctor's behavior must be studied alongside with the level of satisfaction about the quality of time spent with the doctor. Other example, patient outcomes in terms of quality of life and compliance have been linked to the level of patient satisfaction (Aharony, *et al.* 1993) (Albrecht, *et al.* 1998).

This study shows that there was a variation in the proportion of the overall satisfaction about medical service that is provided to artificial eyes patients. Variation was due to variations on location of medical service and PE availability. In addition to that, satisfaction with PE service is connected with the possibility of getting the PE service and quality of service.

Patients who lost their eyes and don't get PE expressed their dissatisfaction about the completeness of medical service that was delivered to them, while patients who lost their eyes and had PE were different in levels of satisfaction, where the patients with readymade PE expressed more satisfaction than No PE patients and lower satisfaction level than customer PE patients, because they don't have PE with similar details to sound eye, had low quality and lack to simultaneous movement with more secretions, but this situations was better than empty of ocular cavity without PE . Customer PE patients expressed a high level on general satisfaction than other type of PE. This agree with Ellmer, et al. (1983), he found that patients with low expectations about the service they received were less satisfied, while patients tend to be more satisfied with their care if their providers' behavior conformed to their expectations. Patients' expectations differ greatly among patients in many aspects like, previous contact with medical care providers, social and cultural values, and the particular context in which care is received.

Song, et al. (2006) found overall rate of satisfaction with PE relatively high was 71.8%. And some of variables as economic status, other people's relationships or response, and motility of PE symmetrical with other eye can increase the patient satisfaction significantly. Also there are many issues related to medical service and have influence on general satisfaction like variation of service places, waiting time to receive PE service, timing of appointments whether it is far away or nearby, numbers of patients in clinic, dealing of medical staff with PE patients and availability of necessary medical devices to provide a full and satisfactory medical service to PE patients.

4.9.2 Technical Quality:

Table (4.16) shows that, total mean of Satisfaction about Technical Quality was 3.67 (73.4%). The participant's satisfaction with PE care staff , they are careful to check everything when treating and examining of PE patients with mean 4.50 (90.0%), while satisfaction about " the doctor's office has everything needed to provide a complete medical care" reached a mean of 4.10 (82.0%).

Table (4.16): Technical Quality

Questions		Strong Unsatisfied	Unsatisfied	No opinion	Satisfied	Strong Satisfied	Mean	Std
I think my doctor's office has everything needed to provide complete medical care	Nu.	4	26	24	51	109	4.10	1.13
	%	1.9	12.1	11.2	23.8	50.9		
Sometimes doctors make me wonder if their diagnosis is correct	Nu.	3	11	20	65	115	1.70	0.94
	%	1.4	5.1	9.3	30.4	53.7		
When I go for medical care, they are careful to check everything when treating and examining me	Nu.	4	4	18	45	143	4.50	0.87
	%	1.9	1.9	8.4	21	66.8		
I have some doubts about the ability of the doctors who treat me	Nu.	128	56	14	13	3	4.34	0.95
	%	59.8	26.2	6.5	6.1	1.4		
Total							3.67	0.48

Many health care professionals assume that the quality of medical care is determined primarily by the technical competence of the healthcare provider. However it is a more complicated issue which is difficult, especially for PE patients, to evaluate. PE service, may be aware of the ways in which PE cares were delivered and decide whether it met their expectations and had an acceptable outcome, but it is difficult for them to know if they had reasonable expectations or any undesired outcomes which were as a result to poor of care or unusually circumstances, so, management of illness needs to identify and improve service quality by two dimensions namely functional quality: how the service was performed; and the technical quality: the applications of science and technology of medicine , or any other health science to management of personal health problem or how the actual outcome of the service that can be objectively measured (Donabedian, 1978), (Grönroos, 1984). Pascoe, (1983), Bartlett, *et al.* (1984) and Sox, *et al.* (1981) showed that perceived competence is related to patient's satisfaction. Patients' satisfactions is related to the perceptions of technical skills, intelligence, and qualifications, but perceived interpersonal and communication skills variation generally could be taken in consideration for assessment of patients' satisfaction. This study showed that 74.7 % of PE patients receive their care in NGOs (Al Radwan center and Bit Al ssamid society), which they delivered customer PE, so PE patients expressed with high rate of satisfaction about the place that was delivering of PE service and its medical staff because it provide comprehensive medical examinations for PE patients, where as we know that medical staff

working in private sector, provide a higher comprehensive and numerous medical services than other health sectors. Private sector and NGOs have advanced instruments and necessary medical equipment to provide PE service with higher quality, that is not the case in other health care provider as in public health sector which lacked to the necessary equipment to deliver of PE service (according to NOH director and NOH medical director).

PE staff in NGOs and governmental sector have experience medical staff, who have scientific and practical qualifications to deliver an effective PE service (according to NOH director and NGOs director). Consequently in this study there are few doubters about the ability and competent of medical staff of PE provider

Service quality is generally considered the difference between patients' expectations about offering services and patients' perceptions about the provided services. Patients' expectations are derived from their perception and their previous experiences in dealing with the ideal care standards of services. So it is necessary to monitor patients' level of expectations after delivering the health care services (Grönroos, 2001), (Parasuraman, *et al.* 1988) and (Irfan, *et al.* 2011).

4.9.3 Interpersonal Manners:

Table (4.17): Interpersonal Manners

Questions		Strong Unsatisfi ed	Unsatisfi ed	No opinion	Satisfied	Strong Satisfied	Mean	Std
Doctors act too businesslike and impersonal toward me	Nu.	2	7	4	38	163	4.46	0.76
	%	0.9	3.3	1.9	17.8	76.2		
MY doctors treat me in a very friendly and courteous manner	Nu.	1	6	5	44	158	4.64	0.71
	%	0.5	2.8	2.3	20.6	73.8		
Total							4.5	0.72

Table (4.17) shows that the total mean of Interpersonal manners was 4.5 (90.0%). the participant said that the doctors treat me in a very friendly and courteous manner with mean 4.64 (92.8%) while they said that the Doctors act too businesslike and impersonal toward me with mean 4.46 (89.2%).

4.9.4 Communication:

Table (4.18): Communication.

Questions		Strong Unsatisfied	Unsatisfied	No opinion	Satisfied	Strong Satisfied	Mean	Std
Doctors are good about explaining the reason for medical tests	Nu.	3	2	11	55	143	4.56	0.76
	%	1.4	0.9	5.1	25.7	66.8		
Doctors sometimes ignore what I tell them	Nu.	126	48	11	18	11	4.22	1.18
	%	58.9	22.4	5.1	8.4	5.1		
Total							4.39	0.82

Table (4.18) shows that the total mean of Communication was 4.39 (87.8%). the participants said that Doctors are good in explaining the reason for medical tests with mean 4.56 (91.2%). While, they said that, the doctors sometimes did not ignored what i tell them with mean 4.22 (84.4%).

Good communication between patients and medical staff is one of the main principles of satisfaction about medical service. This principle is more implemented in Private and NGOs than others health sectors. This study showed that at Private and NGOs there is high satisfaction about communication between PE providers and PE patients. Moreover, it showed that medical staff of PE service in Private and NGOs have a higher rate of explanations and clarifying the reasons of medical examinations than governmental sector, this may be attributed to perspectives of PE patients about governmental sector which are always overcrowding. Thus, there is no enough time for good communication between patients and medical staff of PE service. Consequently, providers of PE service in governmental sector may ignore some patients' questions about their health conditions due to several factors such as: the amount of question increased by patients, narrowing time for good examinations and the huge number of patients attending in the same place.

Habib, (2016) found inadequate healthcare delivery circumstances from perspectives of NOH' employees: physicians, nurses, optometrists, pharmacists, and anesthetists, they expressed about improper communication, inadequate waiting areas, and lack of patient privacy which are not accepted, even though NOH have limited building capacity. Thus, Physician or PE medical staff recommendations are frequently not remembered or understood due by the PE patients to poor communication with patients, and then frequently PE patients don't follow the medical recommendations (Svarstad, 1976).

Mechanic, et al. (1980), found that patients who received care in a large central clinic were less satisfied with the socio-emotional aspect of the doctors-patient relationship, than the patients of smaller clinics, due to there is successor factors for good communication and good interpersonal interaction between patients and medical staff such as more times for examinations and less of crowding patients.

Interpersonal aspects of care involve the social psychological aspects of the physician – patients' interactions. So, it is important to consider that the quality of interpersonal interactions may effect on the quality of the technical care for health care provider (Donabedian, A. 1978). Interpersonal aspects of care should meet the socially defined norms and values. Good communication between a physician and patient is often a necessary condition for the provision of better health care. Thus, there were significant associations between personality behavior of medical staff and satisfaction, and patients tend to be more satisfied if they found their physicians more caring and sensitive to their needs (Dimatteo, *et al.* 1979) (Cousins, 1985). Other studies found that a major determinant of satisfaction with hospital care is the satisfaction about medical staff caring (Abramowitz, *et al.* 1887). Consequently patient's satisfaction with care is the most consistent with characteristics of providers or organizations that are concerned in more "personal" care, better communication and more patient involvement; this reflects the associated between higher levels of satisfaction and better quality of care (Cleary, 1998)

Stiles, et al (1979), found that patients were more satisfied when they were allowed to express themselves during talking about their medical history information at the beginning of visit. Also, one of the most important concepts in patient's satisfaction is sharing with decision-making which is characterized by involving of physician and patient in the decision-making process, both shared information, both take a consensus about the ideal treatment, implementation of agreement treatment, and patients were more satisfied when they were allowed to express their opinions (Charles, *et al* 1997), (Eisenthal, *et al* 1976).

Private hospitals were perceived by patients as better than public hospital in several dimensions as in assurance on dimensions of knowledge, personality and experience, sense of trust by personnel, and polite of hospitals' employees (Polsa, *et al.* 2011) followed by other dimension according to such as appearance of hospital employees, convenient timing of examination of patients, and up-to-date equipment (Arasli, *et al.* 2008).

4.9.5 Financial Aspects:

Table (4.19): Financial Aspects

Questions		Strong Unsatisfied	Unsatisfied	No opinion	satisfied	Strong Satisfied	Mean	Std
I feel confident that I can get the medical care I need without being set back financially	Nu.	13	37	30	50	84	3.72	1.30
	%	6.1	17.3	14	23.4	39.3		
I have to pay for more of my medical care than I can afford	Nu.	24	50	25	60	55	3.34	1.37
	%	11.2	23.4	11.7	28.0	25.7		
Total							3.53	1.18

Table (4.19) shows that the total mean of financial Aspect was 3.53 (70.6%). the participants said that they feel confident that I can get the medical care I need without being set back financially mean 3.72 (74.4%) while they have to pay for more of my medical care than I can afford with mean 3.34 (66.8%)

This study showed that 82% of PE patients did not pay any costs for PE service but was paid by NGOs or private organizations or charitable projects or according to agreed protocol between the Palestinian Ministry of health and Al Radwan medical center, which provides readymade PE service for all PE patients as free of charge. This reflects a high rate of satisfaction about PE service that based on free of charge PE service. While less satisfaction about financial status was found in patients losing their eyes and can't have PE until now.

Patient's satisfaction related with the way in which care is organized. And It is often difficult to separate the effects of organization (e.g.: group practice versus solo practitioner) from financing (e.g.: prepaid versus fee for service) to have influences on patients' satisfaction. There was a lower level of patients' satisfaction related to the high cost of care (Wolinsky, 1976).

Patients in prepaid plans tend to be more satisfied with the financial aspects of care, which may be more important to some patients than other aspects of care. Patients in individual practice associations seem to have some levels of satisfaction comparable to those of patients with fee for service insurance (Luft, 1987). Other studies showed that patients who received care through prepaid plan are less satisfied than those with fee for service patients. (Mechanic, *et al.*, 1980). But Ross, et al. (1981), found that although patients in prepaid plans were initially less satisfied with their care, their satisfaction increased with

time in the future. Gray, (1980), found that there was **no** initial satisfaction differences between prepaid and fee for health service, but greater satisfaction among fee for service after one year.

Different groups of patients may react differently to organizational and financial arrangements. For examples, patients with higher incomes and more educated tend to be less satisfied with large prepaid policy, whereas patients with lower socioeconomic status have sometimes expressed a preference for clinic care (Pascoe, 1983)

Thus, there are several well-established associations between patients' satisfaction and the way of care is financed and delivered, many of these associations are poorly understood and may change as the types of patients who use certain organizational arrangements and financing mechanisms were changed.

4.9.6 Time Spent with doctors:

Table (4.20): Time Spent with doctors

Questions		Strong Unsatisfied	Unsatisfied	No opinion	satisfied	Strong Satisfied	Mean	Std
Those who provide my medical care sometimes hurry too much when they treat me	Nu.	22	31	27	69	65	3.58	1.33
	%	10.3	14.5	12.6	32.2	30.4		
Doctors usually spend plenty of time with me	Nu.	22	36	30	69	57	3.48	1.32
	%	10.3	16.8	14	32.2	26.6		
Total							3.53	1.17

Table (4.20) shows that the total mean of Time Spent with doctors was 3.53 (70.6%). the participant said that those who provide my medical care sometimes hurry too much when they treat me with mean 3.58 (71.6%) while they said that Doctors usually spend a plenty of time with me with mean 3.48 (69.6%). This is attributed to type of PE services which were delivered. This study shows that 41.5 % (N=89) of PE patients (214 participants) benefited from customer PE in NGOs sector which need 20-25 hours of manufacturing (within three days). While 31.3% (N= 67) has readymade PE dealing with readymade PE patients based on delivering readymade only, this takes about 20 minutes only. Additionally, results show that 76% of PE patients had received their PE service in private or NGOs sector, which is characterized according to researcher, believes by a daily limited number of patients and reviewers; appointment system is more precise and disciplined. It also has features of good time spent with doctors through adequate time for good

communication between medical staff and patients, good understanding for patients and for their medical questions. On the other hand, public sector lacks the previous advantages due to a huge number of patients attending at same time. Such time constraints led to bad communication between PE patients and medical PE staff. Thus the way of PE care are organized can affect patients' satisfaction. Some studies showed there was a relationship between the type of organizations where health care is delivered and patients' satisfactions. Such studies showed that patients who are treated in smaller organizations tend to be more satisfied than large organizations. Usually large organizations are characterized by seeing different physicians during different visits and difficulties in having appointment scheduling that leads to a delay in health care accessibility (Mechanic, 1975) (Davies, *et al.* 1986), several studies had found that, having a regular source of care and length of time with the same provider are positively related to patient satisfaction about healthcare (i.e.: in Al Radwan center with a unique team, while in public hospital as in NOH there are changing in the tempers of PE staff -ophthalmologist and ocularist - during the time), the differences in satisfaction between many clinics resulted to un controlling of waiting time and discontinuity of staying time of physician in the clinic (Breslau, *et al.* 1981).

4.9.7 Accessibility and convenience:

Table (4.21): Accessibility and convenience

Questions		Strong. Unsatisfied	Unsatisfied	No opinion	Satisfied	Strong. Satisfied	Mean	Std
I have easy access to the medical specialists I need	Nu.	6	25	17	39	127	4.20	1.17
	%	2.8	11.7	7.9	18.2	59.3		
Where I get medical care, people have to wait too long for emergency treatment	Nu.	47	70	38	27	32	3.34	1.35
	%	22	32.7	17.8	12.6	15		
I find it hard to get an appointment for medical care right away	Nu.	109	49	18	19	19	3.98	1.32
	%	50.9	22.9	8.4	8.9	8.9		
I am able to get medical care whenever I need it	Nu.	9	24	17	62	102	4.05	1.18
	%	4.2	11.2	7.9	29	47.7		
Total							3.89	0.96

Table (4.21) shows that, the total mean of Accessibility and convenience was 3.89 (77.8%). The participants said that they had easy access to the medical specialists I need with mean 4.20 (84.0%) while they said that they were able to get medical care whenever I need it with mean 4.05 (81.0%).

Patients' satisfaction has positive relations with good accessibility to health care, availability, and convenience of care, thus accessibility to health care is one of the most important determinants of patients' satisfaction (Pascoe, 1983). This study showed that the ability of accessibility for PE patients to PE service depends on variety of places that deliver of PE service. Where accessibility scores to governmental sector (NOH hospital) was lower than other health sectors, which are attributed to appointment system dates have long time and there is a unique hospital that provides PE service in Gaza Strip. In addition, the hospital system is based on scheduling of appointments in order to deliver readymade PE service in previous years and currently deliver PE services as: referring to NGOs- for essential examinations for No PE patients-and provided ocular surgeries to whom have inability to fitting of PE to reconstruct of orbital tissues or eye lids and deeping upper or lower fornices, remove eyelids adherence or treat ocular inflammations and foreign body sensations...etc. This requires a long time to get appropriate date. Currently, PE service is not available at Al Nasser ophthalmic hospital, while there is just referral system to NGOs according to agreed Protocol between the Palestinian Ministry of health and NGOs sectors like Al Radwan center. However, the governmental sector has better advantages by good and high opportunity to deliver emergency services for PE patients faster than other health sectors. On the other hand, private sector and NGOs have better accessibility to PE service than the governmental sector because the appointment system date has short time and most of PE services were delivered in same-day. In addition, special or optical centers have more branches distributed in all governorate of Gaza strip and don't require previous appointments to deliver readymade PE service. It is clear that, accessibility to provider or specialist of PE service in private or NGOs sector is higher than in the public sector.

4.9.8 Summary table of Satisfaction about Artificial eye service:

Table (4.22): Satisfaction about Artificial eye

Domains	Mean	MD	Std
General Satisfaction	80.1	90.0	10.1
Technical Quality	73.3	75.0	4.8
Interpersonal Manners	66.0	60.0	5.8
Communication	87.7	90.0	8.2
Financial Aspect	70.6	80.0	11.8
Time Spent with doctors	70.6	75.0	11.7
Accessibility and convenience	77.8	85.0	9.6
Total	74.58	77.78	11.19

Table (4.22) shows that the total weighted mean of Satisfaction about Artificial eye was 74.58%. The highest domain was communication with weighted mean 87.7% followed by General Satisfaction with weighted mean 80.1%. Then Accessibility and convenience with weighted mean was 77.8 %. While weighted mean for Technical Quality was 73.3%. Weighted mean for Financial Aspect and Time Spent with doctors were equal 70.6%. Lowest weighted mean was 66 % for Interpersonal Manners.

Finally, PE patients were more satisfied when they received PE service with high quality, good communications skills and good interpersonal interactions between PE patients and staff of PE service, good ability to finance their cost of PE service through their money or by organizational funds, good availability of PE service regarding to better accessing to PE service and less time spending with staff of PE service. The above results cleared that, customer PE patients were more satisfied than No PE patients and readymade PE patients, that is related directly with place of delivering PE service in public or private or NGOs organization and kind of PE service which delivering –customer or readymade or No PE service. Results showed that, PE patients were more satisfied in private and NGOs organization than public organizations, and were more satisfied with customer technique than readymade.

Table (4.23): Importance of Prosthetic Eye for (Customer, Readymade and No PE)

Questions	No		Yes		Total	
	Nu.	%	Nu.	%	Nu.	%
Do you have the ability for dispensing with artificial eye (or in future for NoPE)	208	97.2	6	2.8	214	100.0
Did you get a feeling concerned about losing of artificial eye or lack of alternative offers in the future?	2	0.9	212	99.1	214	100.0
Have you had exposed to a verbal or actual comments, aim mocking you or to aversion from you as you being one of PE patients?	11	5.1	203	94.9	214	100.0
Getting artificial eye give you confidence in yourself or in front others	19	8.9	195	91.9	214	100.0
Losing eye make your confidence decrease in front of others	2	0.9	211	99.1	213	100.0

Table (4.23) shows that only 2.8% have the ability for dispensing with artificial eye while 99.1% feeling concerned about losing of artificial eye and lack of alternative offers in the futures. 94.9% said that they had verbal comments or actual aim mocking you or to aversion from you as you being one of PE patients. 91.9% getting PE give them more confidence in themselves in front of others; while 99.1% said that, losing the eye make their confidence decrease in front of others.

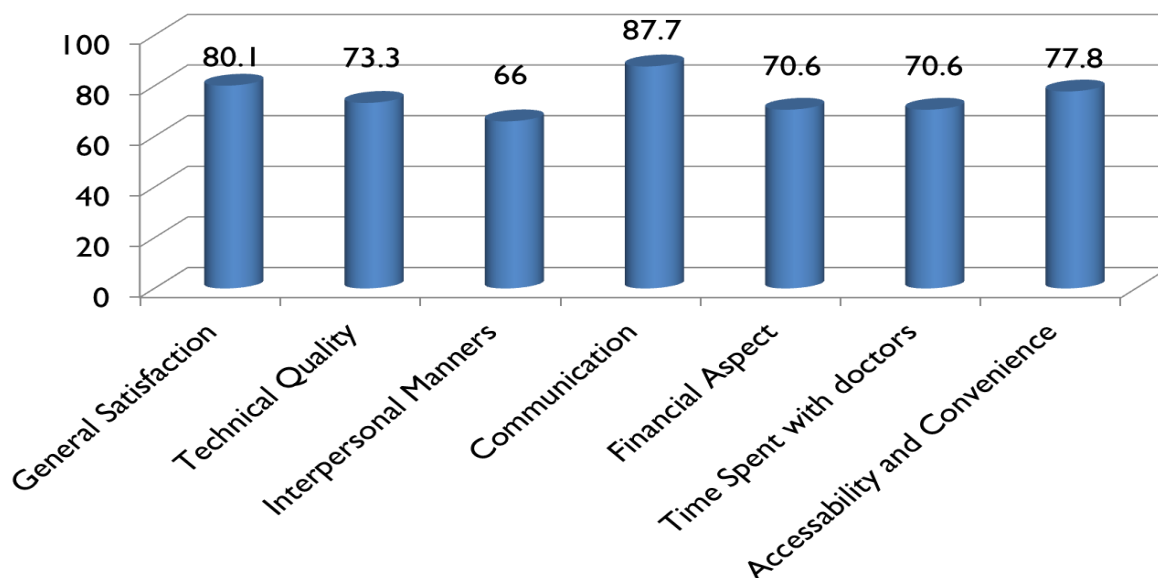


Figure (4.10) Satisfaction about Prosthetic eye service.

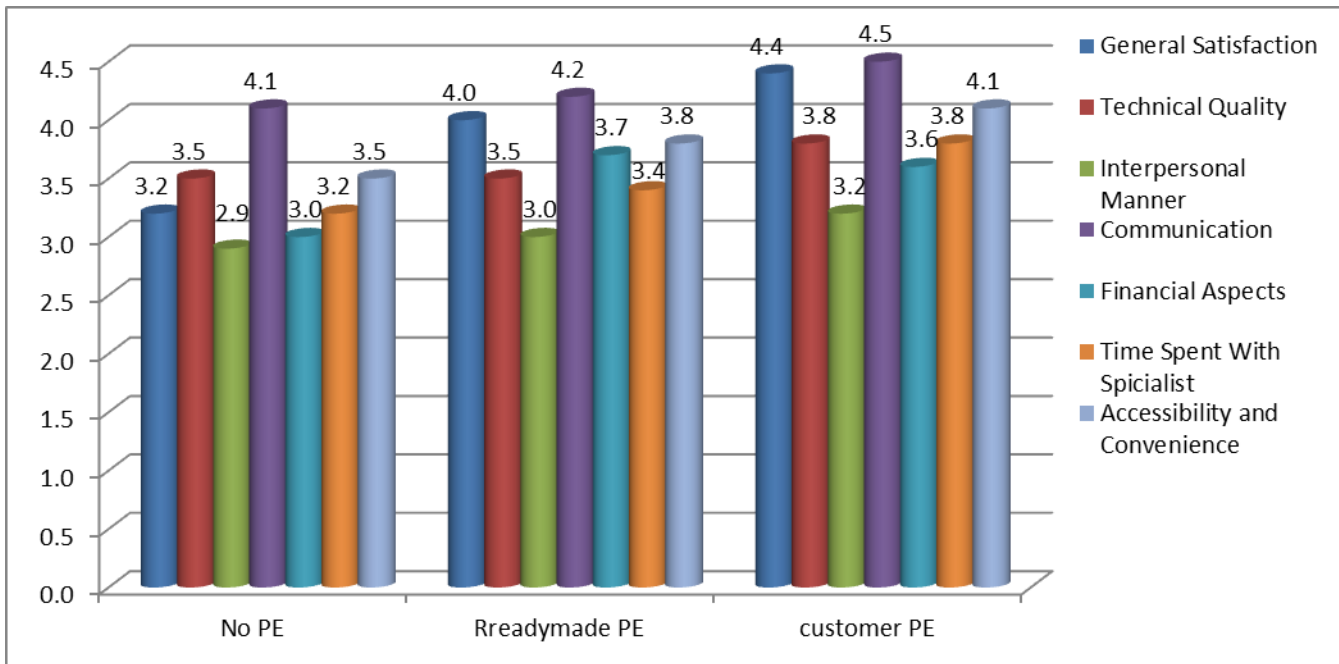


Figure (4.11) Type of PE with Satisfaction domains.

4.10 Most concerns before and after having artificial eye.

Pine, et al. (2011) to measure concerns status of study respondents before and after having artificial eye, he devolved Visual Analogue Scale which consists from 3 sections. In section 1 of the questionnaire participants were asked about their concerns about each of thirteen specific concerns related to their artificial eye. For each factor the participants were asked to recall how their concerns were when they initially lost their eye or when they intended to fit PE and then recall their present-day level of concern. The left end of each VAS scale was labeled 'not concerned', and the right end was labeled 'very concerned'. Section 2 had the same structure as section1 with a VAS scale associated with each concern. But the questions were printed to patients as general factors not related to artificial eye. For each section, Score value start from 1 to 10, where Mild from (1 to 3), moderate from (4 to 7), and sever from (8 to 10). Section 3 asked participants, who of the following three items are more concerned mostly to you: (1) watering, crusting and discharge; (2) judging distance; or (3) appearance.

This questionnaire did not link between the causes of eye losing and PE concerns. The questionnaire allowed the researcher to deep understanding and exploring insight of PE patients' concerns that are relevant for PE patients. These insights concerns encourage PE health care provider to be more aware about PE patients' concerns, specially their concerns about their remaining eye and side effect of monocular vision.

4.10.1 Concerns related to artificial eye:

Table (4.24) shows that the total mean of Concerns before and after having artificial eye was decreased from 7.5 (75.0 %) to 3.8 (38.0 %). this decrease was in all items of Special concerns about artificial eye and was clear in comfort and removing and inserting of PE.

The highest concern for participants was about the losing of PE then watering, crusting and discharge. Pine, et al. (2011) finding showed that, high proportion of PE patients with discharge and warty crusting by (93%). This does not agree with the results of this study, which can be attributed to two reasons: first, No PE patients are not included in Pine's study. The second is that, he did not identified the type of PE for his study' participants.

Table (4.24): Concerns before and after having artificial eye

Special concerns about artificial eye	Pre (n =214)						Post (n =156)						Mean	
	Mild		Moderate		Sever		Mild		Moderate		Sever		Pre	Post
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
1. Comfort	15	7	52	24.3	147	68.7	106	67.9	40	25.6	10	6.4	7.7	2.8
2. Retention (artificial eye stays in)	13	6.1	41	19.2	160	74.8	105	67.3	39	25	12	7.7	8.0	3.0
3. Watering, crusting and discharge	14	6.5	48	22.4	152	71	76	48.7	37	23.7	43	27.6	7.9	4.9
4. Movement	9	4.2	25	11.7	180	84.1	77	49.4	52	33.3	27	17.3	8.4	4.2
5. Color relative to your good eye	11	5.1	21	9.8	182	85	85	54.5	45	28.8	26	16.7	8.4	4.0
6. Eyelid contour relative to your good eye	15	7	57	26.6	142	66.4	85	54.5	55	35.3	16	10.3	7.6	3.6
7. Fullness of orbit relative to your good eye	16	7.5	66	30.8	132	61.7	93	59.6	48	30.8	15	9.6	7.5	3.4
8. Size relative to your good eye	19	8.9	49	22.9	146	68.2	88	56.4	46	29.5	22	14.1	7.6	3.7
9. Direction of gaze relative to your good eye	9	4.2	21	9.8	184	86	89	57.1	48	30.8	19	12.2	8.7	3.7
10. Removing and inserting	11	5.1	49	22.9	154	72	142	91	10	6.4	4	2.6	8.2	1.8
11. Loss or damage	5	2.3	12	5.6	197	92.1	7	4.5	18	11.5	131	84	9.2	8.9
12. Fixed pupil size	110	51.4	76	35.5	28	13.1	136	87.2	13	8.3	7	4.5	4.1	2.1
13. Rotating prosthesis when rubbing	102	47.7	84	39.3	28	13.1	90	57.7	43	27.6	23	14.7	4.2	3.7
Total													7.5	3.8

So the differences in this study about the reduction of concerns with discharges according to variations in concerns among three types PE patients (No PE, readymade PE and customer PE). But, adding to that, results of the current study agree with Pine, et al. (2011) finding such, whereas, PE patients' demographic variables showed levels of concerns between PE patients in public occupations. PE patients were more concerned about their appearance than PE patients in non-public occupations. And PE patients had more concerns with reduced peripheral vision. Patients feel uncomfortable with the limitation of their visual field in public settings than in other situations such as the communication with others. Adding to that in this study results agree with his finding in the lowest initial concern was phantom sight vision. This is a common phenomenon for PE patients when they first lose their natural eye, and this concern appears less than others concerns. Some

PE concerns changed and reduced over time such as concerns about direction of gaze, size and contour of eye lid. These concerns are mainly related to surgical conditions.

4.10.2 Concerns not related to artificial eye:

Table (4.25): Concerns not related to artificial eye.

General concerns not related to artificial eye	Pre (n =214)						Post (n =156)						Mean	
	Mild		Moderate		Sever		Mild		Moderate		Sever		Pre	Post
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
1. Ability to judge distance	26	12.1	109	50.9	79	36.9	125	80.1	20	12.8	11	7.1	6.4	2.5
2. Loss of balance	45	21	100	46.7	69	32.2	137	87.8	13	8.3	6	3.8	5.9	2.0
3. Reduced side vision	4	1.9	14	6.5	196	91.6	6	3.8	36	23.1	114	73.1	9.0	8.1
4. Change to your appearance	11	5.1	23	10.7	180	84.1	83	53.2	44	28.2	29	18.6	8.5	4.1
5. Getting good advice for surgery	59	27.6	90	42.1	65	30.4	138	88.5	15	9.6	3	1.9	5.6	1.9
6. Pain from the operation	79	36.9	97	45.3	38	17.8	133	85.3	18	11.5	5	3.2	4.9	2.0
7. Phantom sight sensation	120	56.1	76	35.5	18	8.4	138	88.5	10	6.4	8	5.1	3.8	1.9
8. Health of the remaining eye	3	1.4	2	0.9	209	97.7	5	3.2	8	5.1	143	91.7	9.6	9.3
9. Future appearance because of aging	50	23.4	76	35.5	88	41.1	85	54.8	43	27.7	27	17.4	6.2	3.9
10. Lower lid laxity	86	40.2	85	39.7	43	20.1	99	63.5	31	19.9	26	16.7	4.9	3.6
11. People staring at the prosthesis	11	5.1	10	4.7	193	90.2	63	40.4	28	17.9	65	41.7	9.0	5.5
12. Communicating with people on the blind side	9	4.2	19	8.9	186	86.9	15	9.6	28	17.9	113	72.4	8.9	7.9
13.Ability to earn a living, have a job and work	10	4.7	35	16.4	169	79.0	74	47.7	37	23.9	44	28.4	8.3	5.0
Total													7.0	4.4

Table (4.25) shows that the total mean of Concerns not related to artificial eye was decreased from 7.0 (70.0%) to 4.4 (44.0). This decrease was clear in ability to judge distance and getting good advice.

The current results agreed with Pine, et al. (2011) finding where PE patients' initial concerns are about their ability to judge distance, reduced peripheral vision and change of appearance all decreased over time. PE Patients who had occupations that involved face-to-face contacts with the public were more concerned about their appearance and reduced visual fields than those patients whose jobs did not involve the public. Health of the remaining eye was the main current concern for PE patients. The health of the remaining eye was their highest concern, so, this need to advice PE patients to undergo regular clinical examinations of their remaining eye constantly over time. And protect the remaining eye with safety glasses with an appropriately safety frame design is more important and essential issue. To protect him from losing his remaining vision (blindness).

Table (4.26): Which of these factors currently most concern to you about wearing PE?

Age	Nu.	%
Stereopsis (3D vision)	68	31.8
Appearance	90	42.1
Discharge , Watering	56	26.2
Total	214	100.0

Table (4.26) shows that the factor that currently the most concerns about wearing of artificial eye, which were as following: Appearance with percent 42.1% followed by Stereopsis (3D vision) with percent 31.8%.

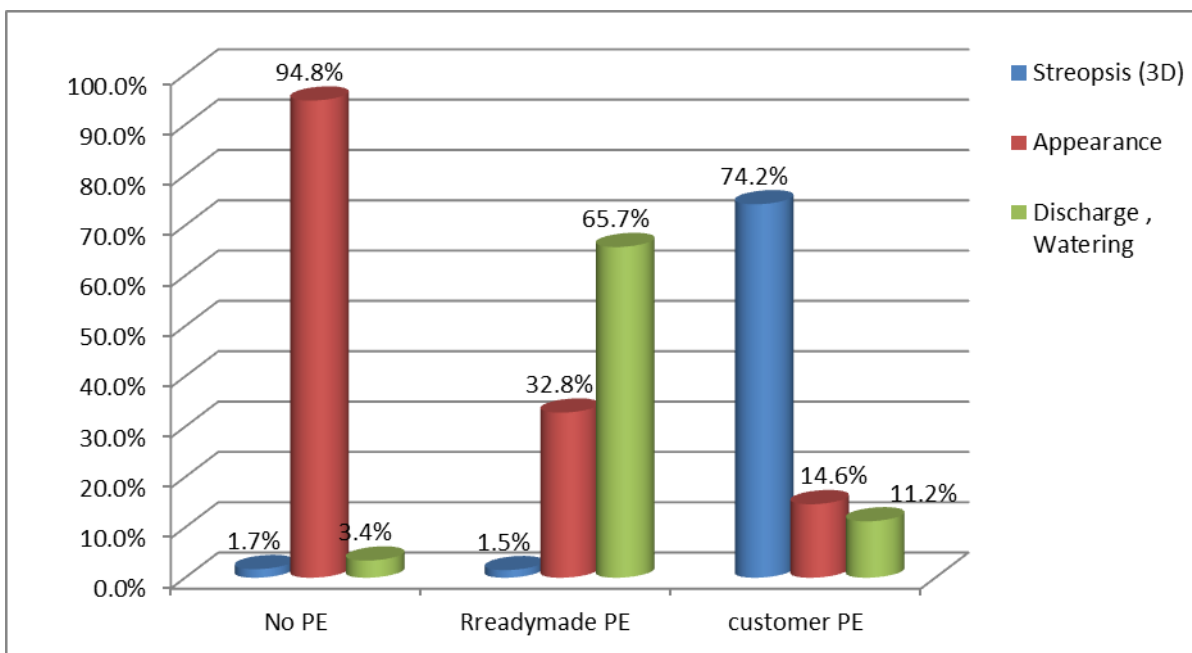


Figure (4.12) Type of PE with which of these factors currently most concern to you about wearing PE.

4.10.3 Specific concerns about PE:

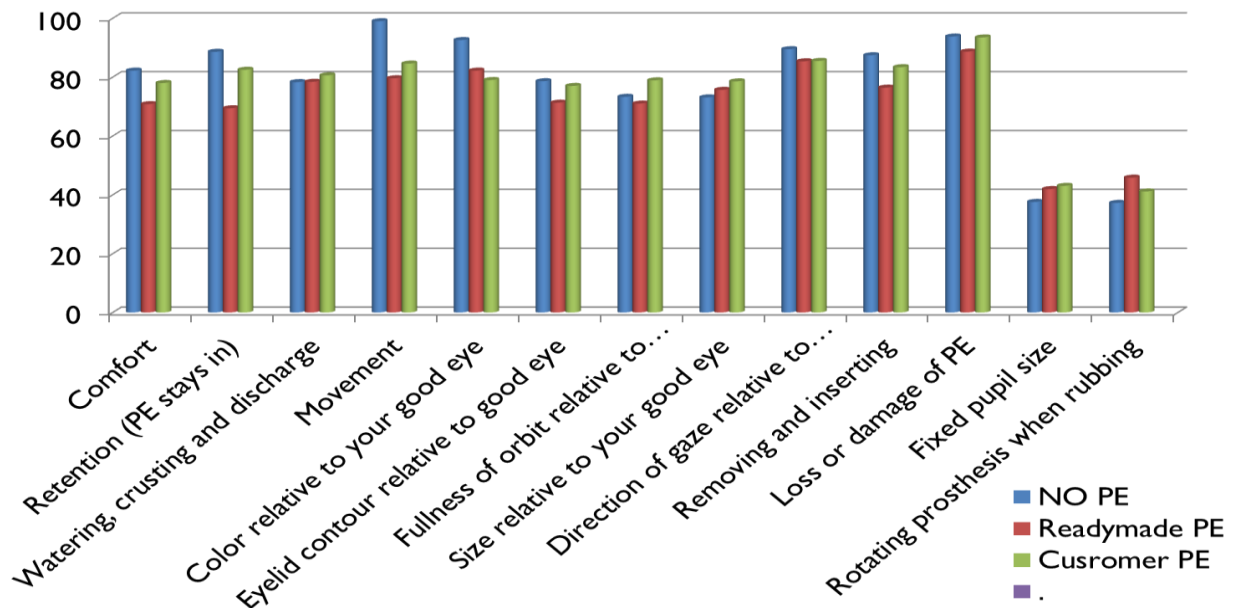
4.10.3.1 Pre- fitting PE / Specific concerns about PE

Table (4.27): Items of concerns related to PE with each type of PE groups.

Special concerns about artificial eye	No PE	Readymade PE		Customer PE		Total	
	Weighted mean	Weighted mean		Weighted mean		Weighted mean	
	Pre	Pre	Post	Pre	Post	Pre	Post
1. Comfort	82.20	70.80	37.76	78.00	20.90	76.90	28.14
2. Retention (artificial eye stays in)	88.60	69.40	44.48	82.50	19.78	80.00	30.39
3. Watering, crusting and discharge	78.30	78.40	77.31	80.60	27.19	79.30	48.72
4. Movement	99.00	79.60	61.94	84.60	26.40	84.20	41.67
5. Color relative to your good eye	92.60	82.20	65.82	79.00	19.89	83.70	39.62
6. Eyelid contour relative to good eye	78.60	71.30	51.34	77.00	24.49	75.70	36.03
7. Fullness of orbit relative to good eye	73.30	71.00	51.05	78.90	21.12	74.90	33.97
8. Size relative to your good eye	73.10	75.67	56.42	78.54	21.80	76.17	36.67
9. Direction of gaze relative to good eye	89.48	85.37	57.46	85.51	21.12	86.54	36.73
10. Removing and inserting	87.41	76.42	21.79	83.37	14.38	82.29	17.56
11. Loss or damage of PE	93.79	88.66	84.63	93.48	93.03	92.06	89.42
12. Fixed pupil size	37.59	41.94	24.03	43.03	18.99	41.22	21.15
13. Rotating prosthesis when rubbing	37.24	45.82	53.58	41.12	24.16	41.54	36.80
Total	77.00	72.00	52.90	75.80	27.20	75.00	38.20

(Table 4.27) showed that, the results in branch of (pre - Specific concerns about PE) for all groups of PE patients - No PE , Customer , Readymade - scored similar concerns in all items of questionnaire as a following: total percent of weighted mean for their concerns was 75 % (77% No PE, 72% Readymade, 75% customer), while the highest weighted mean result was totally for all groups of PE (92 % for Loss or damage of PE) and (86.5% for Direction of gaze of PE related to sound eye) , (84 % for both Movement and Color of PE relative to sound eye) , (80% for Retention or artificial eye stays in) and (82% for Removing and inserting) , (79 % for Watering, crusting , discharge) while the least results were (41 % Fixed pupil size) (42 % Rotating prosthesis when rubbing).

From the above result it is clear that all patients pre fitting of PE have similar special concerns related to PE, and results in all items are related to their physiological status about aesthetic & appearance of their PE and similarity of PE to their sound eyes and staying their faces without any mismatching synthesis.



Figure(4.13) Special concerns about artificial eye (pre. fitting) with type of PE.

4.10.3.2 Post- fitting PE / Specific concerns about PE

(Table 4.27) showed that, the results in branch of (Post- Specific concerns about PE) for all groups fitting of PE patients - Customer, Readymade - there was a clear reduction in their scoring of concerns, where the average percentage for both after fitting of PE decreased to 38 %. (27 % Customer, 52 % Readymade).

In details for each group (customer and readymade) the result showed that, (Post- Specific concerns about PE) a slight reduction for: Loss or damage of PE 89.42 % (customer 90 %, readymade 84.6%).

Other items were significantly reduced after fitting of PE as the following: Watering, crusting and discharge 49% (customer 27% , readymade 77.3%) , Movement 41.6%(customer 26.4 % , readymade 62 %), Color relative to your good eye 39.6 % (customer 20 % , readymade 65.8 %), Size relative to your good eye 36.6% (customer 21.8 % , readymade 56.4 %), Direction of gaze relative to your good eye 36.7% (customer 21 % , readymade 57.4 %), Rotating prosthesis when rubbing 36.8% (customer 24 % , readymade 53.5 %), . Eyelid contour relative to your good eye was 36% (customer 24.4 % , readymade 51. %), Fullness of orbit relative to your good eye 33.9% (customer 21 % , readymade 51 %), Retention of artificial eye 30.3% (customer 19.7 % , readymade 44.4 %), Comfort 28% (customer 20.9 % , readymade 37.7 %), Fixed pupil size 21% (

customer 19 % , readymade 24 %), Removing and inserting 17.5% (customer 14 % , readymade 21.7 %).

Customer PE provides a maximum comfort and restores the full physiologic function to eye's accessory organs except vision function, prevent the collection of mucus and discharge between PE and soft tissues of the eye which can irritate the mucosa and act as source of infection, PE provides optimum cosmetic and functional results (Cain, *et.al.* 1983).

From the above result it is clear that all patients post fitting of PE have different score in post-Special concerned related to PE, and results in all items were related to their perception about losing their PE, then losing their beauty of their appearance. Also results of concerns reflect their perception about the quality of PE service, it is clear that, Customer PE manufacturing was perfect and better matching in special fine details with their sound eye that led to reduce the concerns about their deformities of eye appearance, and increase their sensation with a normal face like others.

Customer PE is characterized by hand painted, and individually constructed to be the most satisfactory ocular replacement. The fabrication of a customer PE has satisfactory aesthetic, more accurate details related to iris, sclera and vein blood of the eye. The advantages of PE include improved adaptation to underlying tissues of socket, increased mobility of the prosthesis, improved facial contours, and enhanced esthetics gained from adjusted size of the pupil and iris and color of the iris and sclera (Mathews, M 2000). But for Readymade PE, it was clear that, it's not suitable and doesn't meet main needs for PE Patients in the appearance of their faces and doesn't reduce the side effects for losing the eye like, watering or crusting and discharges that led to irritations of eye tissues and lashes adherence or falling and lids' adherence, lack of movement, no centration of gaze, not suitable size, different color, falling from eye socket led to damage or losing eye, So it was noticed from others who attributed to low quality of readymade PE and lack of readymade options during fitting of PE.

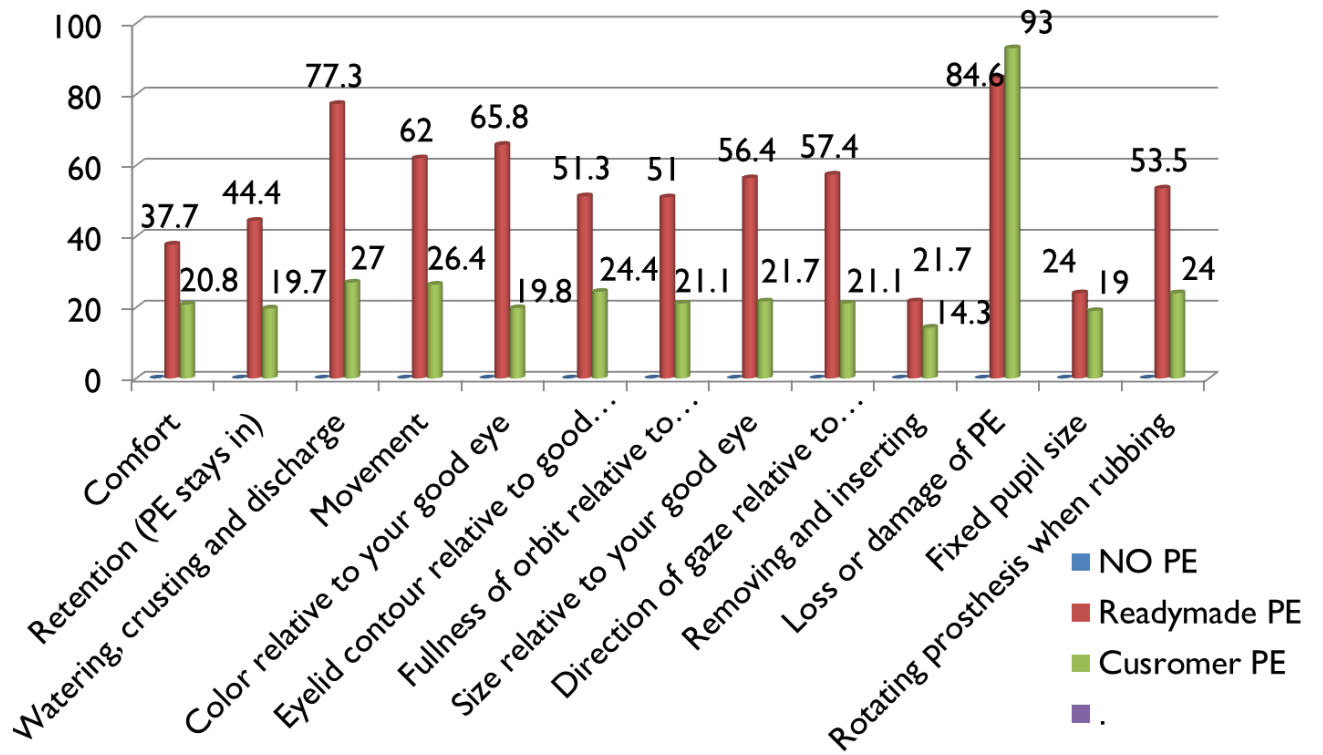


Figure (4.14) Special concerns about artificial eye (post. fitting) with type of PE.

4.10.4 General concerns not related to PE:

4.10.4.1 Pre - fitting of PE / General Concerns not related to PE

Table (4.28): Items of concerns not related to PE with each type of PE groups.

General concerns Not Related to artificial eye	No PE	Readymade PE		Customer PE		Total	
	Weighted mean	Weighted mean		Weighted mean		Weighted mean	
	Pre	Pre	Post	Pre	Post	Pre	Post
1. Ability to judge distance	65.70	61.90	26.11	65.20	64.30	25.45	
2. Loss of balance	63.28	55.52	21.94	59.66	18.20	59.35	19.81
3. Reduced side vision	93.45	86.87	78.96	90.23	83.37	90.05	81.47
4. Change to your appearance	93.97	79.40	59.70	83.37	27.08	85.00	41.09
5. Getting good advice for remove of the eye & fit PE	58.62	52.39	21.79	56.52	16.97	55.79	19.04
6. Pain from the operation	50.00	44.18	20.75	51.57	18.65	48.83	19.55
7. Phantom sight sensation	35.17	38.66	20.15	38.43	18.76	37.62	19.36
8. Health of the remaining eye	96.90	96.42	93.28	96.07	93.48	96.40	93.40
9. Future appearance because of aging	73.79	59.10	46.72	57.64	33.60	62.48	39.23
10. Lower lid laxity	56.38	48.06	45.52	44.05	28.09	48.65	35.58
11. People staring at the prosthesis	91.55	91.05	82.09	87.53	35.17	89.72	55.32
12. Communicating with people on the blind side	93.45	84.93	81.05	88.20	76.85	88.60	78.65
13. Ability to earn a living, have a job and work	88.45	78.06	69.25	82.81	34.83	82.85	49.62
Total	73.90	67.40	51.30	69.30	39.20	70.00	44.40

(Table 4.28) showed that, the results in branch of (Pre - General concerns not related to PE) for all groups of PE patients - No PE , Customer , Readymade - were similar in their scoring of concern in all items of questionnaire as a following: total percent for their concerns were 70% (73.9 % No PE , 67.4 % readymade , 69.3 % customer), while the highest result were (96% for Health of the remaining eye), (90 % for both Reduced side vision and People staring at the prosthesis), (88.6 % Communicating with people on the blind side), (85% for Change to your appearance) and (83 % for Ability to earn a living, have a job and work), while the least result were (37.5 % for Phantom sight sensation) (48.6 % for Pain from the operation).

From the above result it is clear that all patients pre fitting of PE have similar in pre-general concerns not related to PE, and results in all items were related to their social status and social adaptation through health of their sound eyes, good acceptance from their community and families by good communication and accepting them without any deformities and changes in their faces that may be noticeable from others.

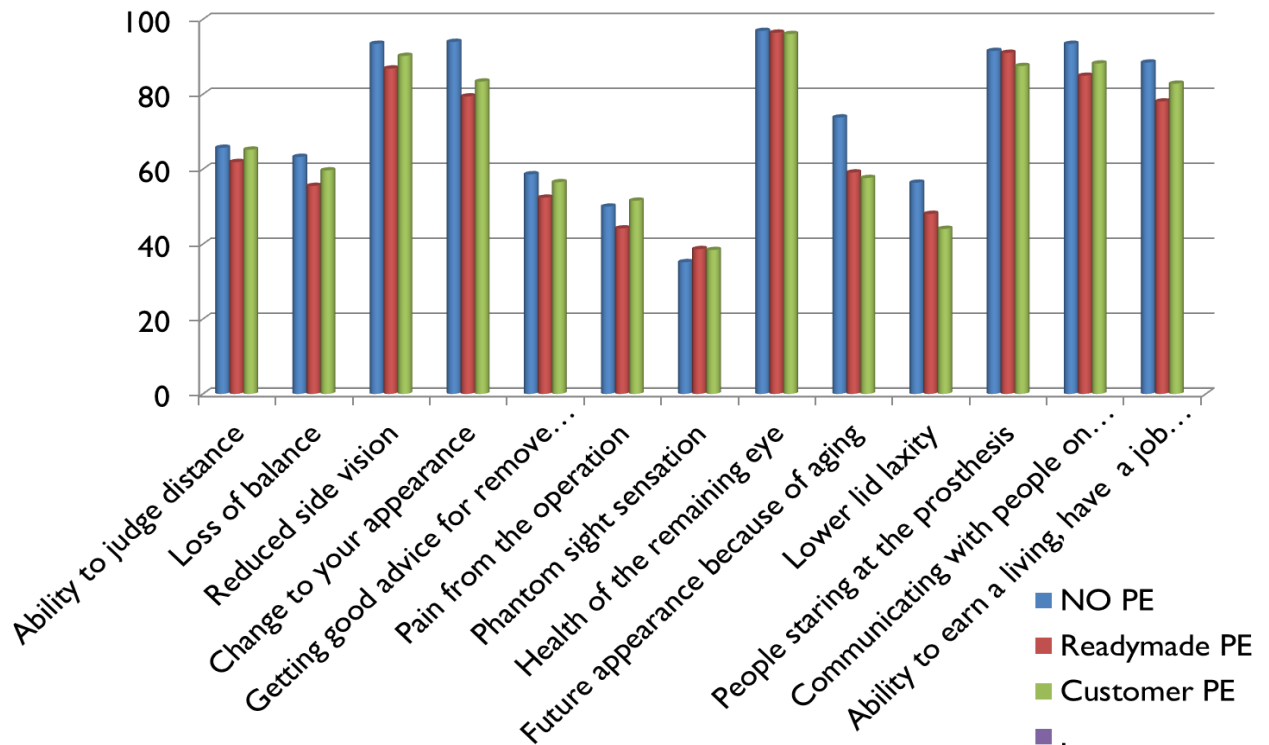


Figure (4.15) General concerns not related to artificial eye (pre. fitting) with type of PE.

4.10.4.2 Post– fitting of PE / General Concerns not related to PE

(Table 4.28) showed that, the results in branch of (Post - General concerns not related to PE) for all groups fitting of PE patients - Customer, Readymade – reduction in their score of concerns, where the average percentage of concerns for both after fitting of PE was 44%. (Customer 39 %, Readymade 51 %).

In details for each group (customer and readymade) the result showed that, (Post- General concerns not related to PE) were slightly reduced for three items: the percentages were highest for , Health of the remaining eye 93.4% (customer 93.5 % , readymade 93%), Reduced side vision 81.4% (customer 83.3 % , readymade 78.9 %), Communicating with people on the blind side 78.6% (customer 76.8 % , readymade 81 %).

Other items there were a significant reductions as following: , People staring at the prosthesis 55.3% (customer 35 % , readymade 82 %), Ability to earn a living, have a job and work 49.6% (customer 34.8 % , readymade 69 %), Future appearance because of aging 39% (customer 33 % , readymade 46.7 %), Change to your appearance 41% (customer 27 % , readymade 59.7 %), Lower lid laxity 35.5%(customer 28 % , readymade

45.5 %), Ability to judge distance 25.4% (customer 24.9 % , readymade 26 %), Loss of balance 19.8% (customer 18.2 % , readymade 22 %), Getting good advice about removal of the eye of fitting of PE 19 % (customer 17 % , readymade 21.7 %), Pain from the operation 19.5%(customer 18.6 % , readymade 20.7 %), Phantom sight sensation 19% (customer 18.7 % , readymade 20.1 %)

From the above result it was clear that, there were three items that had high scoring even after fitting of PE, such as, Health of the remaining eye, reduced side vision and communicating with people from blind side. Those who prove these items will be concerned to PE patients forever and cannot be treated with any interventions even with PE. So PE Patients should be accepting these concerns and be more adaptive with it. Also results showed that, there were differences between customer PE and readymade PE. These variations are as following: customer PE has better advantages that are related to dealing with people like the reduction of anxiety from people staring to faces of PE patients , increasing their chance of getting a job, reduction of abnormalities features on faces of PE patients, increase the acceptance and self-stem for PE patients, but in readymade PE those items is present with significant concerns such as , increasing of staring people ,reduction of chance to getting a job due to changes in appearance , an increase of lower led laxity due to the enlargement of readymade PEs' size that led to forcing eye lids to be opened for long time larger than eye opening in sound eye or in normal person. And others residual concerns reduced with time for customer PE and readymade PE due to both have more adaptation with these concerns like, Ability to judge distance, Loss of balance and Phantom sight sensation.

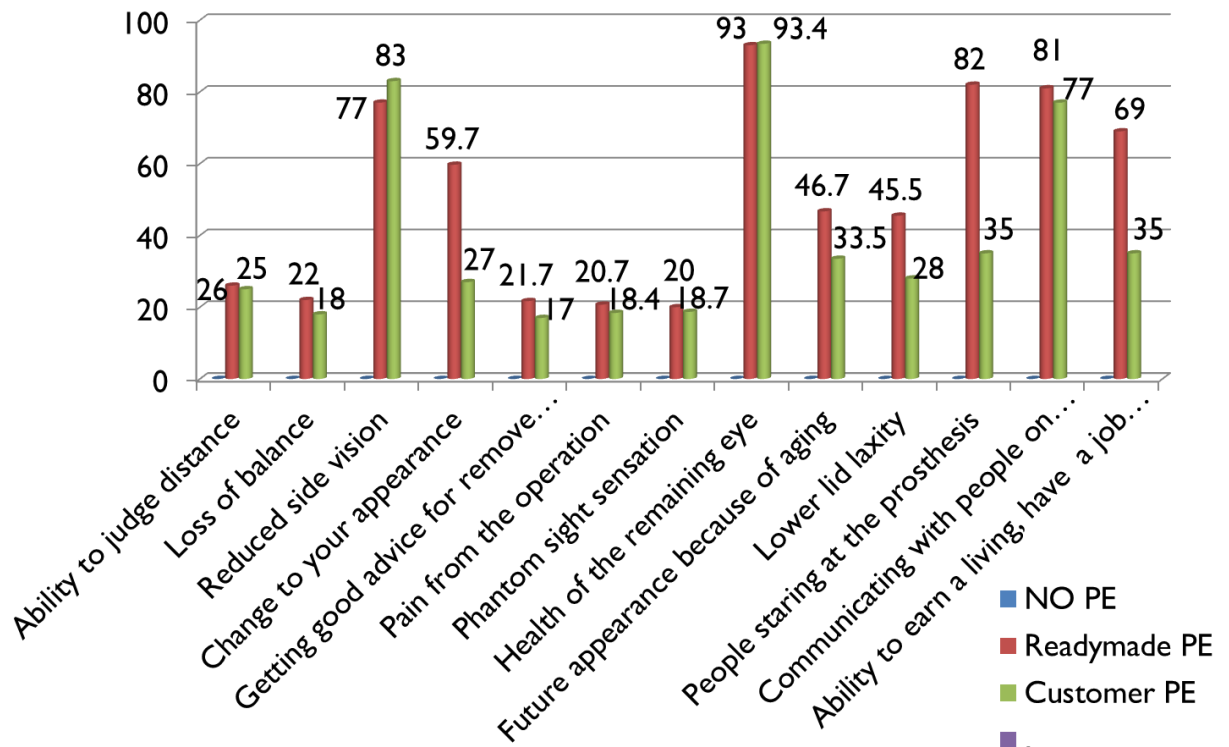


Figure (4.16) General concerns not related to artificial eye (post. fitting) with type of PE.

Finally, it is clear that Customer PE was better than Readymade PE in all items of questionnaire (pre & post) especially that is related to manufacturing techniques which are related mainly with aesthetic appearance and matching with fine details of sound eye that led to unnoticing of PE in front of people, and that led directly to improve QOL with its four domains, although there was a similar scoring from patients of customer PE and readymade PE in all Items that's no one like Ocularist, Ophthalmologist, Physiotherapist can fix or treat it. Because it is outside of their abilities and skills like fearing about health of the remaining sound eye, concerns about loss or damage of PE, communicating with people on blind side, reduced side vision

Any Cause of pain to eye and discomfort sensation without treating or with inadequate treatment can be transformed gradually to dysfunctional orbit or anophthalmic socket, the atrophic eye suffers from phantom sensations pain, and psychological or physical restrictions can occur, but it can be managed by PE fitting, but PE causes dry eye socket through prosthesis deposits, mucous formation, meibomian gland dysfunction (Bohman, *et al.* 2014). So the rehabilitation of the orbital defect is a complex task. A custom ocular prosthesis is a good option when reconstruction by plastic surgery or when using of implants with pegging tool is impossible or not desired (Chalian, *et al* 1999) because the

customer PE provides better results as on functionally and esthetically aspects. And has the following characteristics: Retains the shape of the defective socket, prevents collapse or loss of lids shape, Provides proper muscular function of the lids, and prevents accumulation of fluids in the posterior cavity, matching to the properties of natural eye, better movement for PE and mimicking to the natural eye. (Taylor, 2000)

The main aspects related to vision can be effected by losing of the eye is reduction of peripheral vision or one side of vision and may be noted most significantly during daily life activities or during communication to others from blindness side , but the majority from PE patients can continue within normal activities with little difficulty. The overall improvement by comfort and good appearance of PE commonly led to feeling of self-confidence (Morgan-Warren, *et al.* 2013).

The Phantom eye syndrome is a frequent among removal eye patients. Visual hallucinations were described by 42% of the patients that was caused by darkness, closing of the eyes, fatigue and psychological stress. So visually disturbed that it interfered with their daily life, there were some factors associated with phantom pain like ophthalmic pain before eye removal, retention of PE and high degree of conjunctival secretion (Rasmussen, 2010). Phantom vision or phenomenon or Phantom pain is a neuropathic pain attributed to damage of central or peripheral neurons or lesion of the somatosensory system which are consider for PE patients as a concerns from hallucinatory experiences that may be refer to mental instability; PE patients are often dislike to express about their hallucinatory experiences. So, they need to be reassured that these sensations are benign and do not refer to psychiatric or psychological disorders (Andreotti, *et al.* 2014).

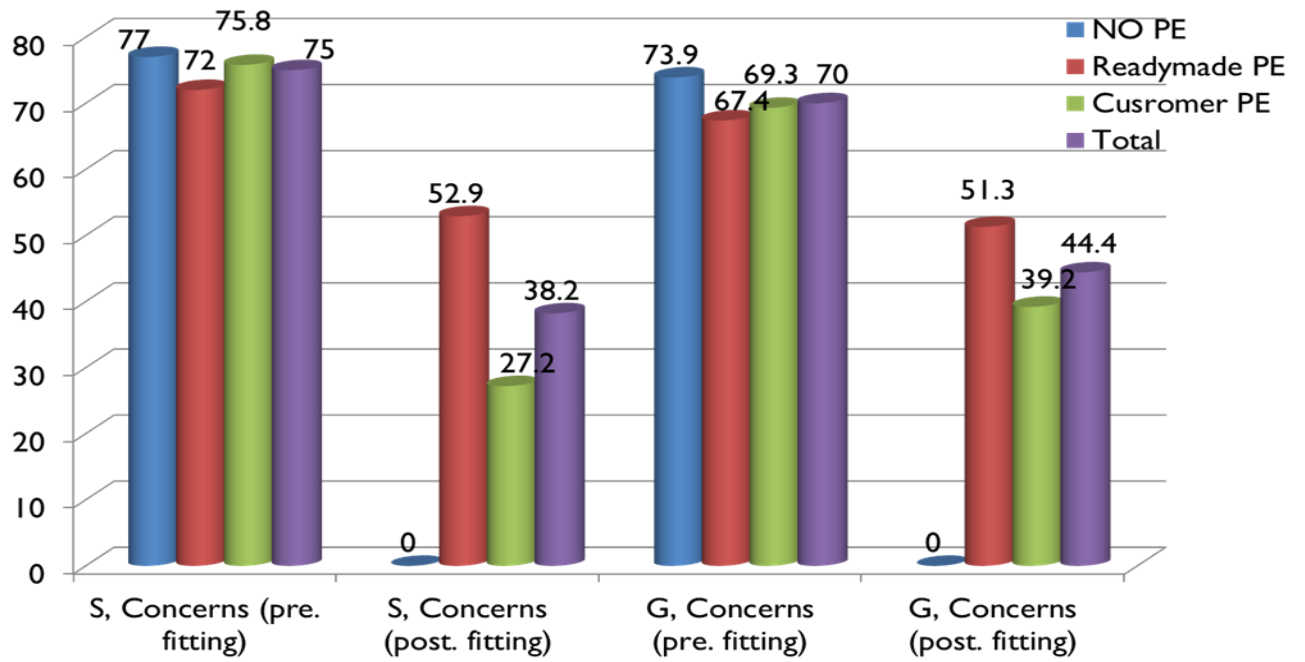


Figure (4.17) Specific Concerns(S.C Pre & Post) and General Concerns (G.C Pre & Post) about PE service with type of PE.

4. II Inferential Statistics

4.11 Quality of life and variables

Table (4.29): Quality of life and some of patients' variables

Variables	Nu	Mean	Std	t - Test	Sig.
1. Age					
20 Years old and less	37	63.33	17.65	1.694	0.169
From 21 to 30 Years old	83	66.26	18.77		
From 31 to 40 Years old	49	66.36	16.86		
More than 40 Years old	45	59.63	14.99		
Total	214	64.38	17.49		
2. Gender					
Male	157	64.26	17.80	-0.164	0.870
Female	57	64.71	16.75		
3. Marital status					
Not Married	92	65.40	18.64	0.738	0.461
Married	122	63.61	16.61		
4. Education					
Illiteracy	6	62.50	18.79	1.31	0.267
Primary	17	62.84	19.31		
Preparatory	42	62.52	17.13		
Secondary	68	61.94	17.09		
University	81	67.86	17.40		
Total	214	64.38	17.49		
5. Cause of losing eye					
Congenital	26	58.24	12.57	1.817	0.145
Pathological	27	66.30	17.75		
War injury	105	63.77	18.15		
Trauma / Accident	56	67.46	17.64		
Total	214	64.38	17.49		
6. Type of PE					
NoPE	58	48.46	8.31	175.455	0.001
Readymade	67	57.08	10.35		
Costumer	89	80.25	12.37		
Total	214	64.38	17.49		
7. Time of losing eye before or after marriage					
Before Marriage	152	65.33	17.89	1.25	0.213
After Marriage	62	62.04	16.37		
Total	114	63.68	17.13		

Table (4.29) shows that there is no statistical differences between quality of life with age (Sig. = 0.169), gender (Sig. = 0.870), marital Status (Sig. = 0.461), education (Sig. = 0.267), cause of losing eye (Sig. = 0.145), and Time of losing eye before or after marriage (Sig. = 0.213). While there is a statistical difference between quality of life and type of PE, the difference was for customer with mean 80.25.

4.11.1 QOL and age:

The best QOL was in mid age (21-40 years) with mean of quality 66, and it is less in younger age with mean 63, and older age with mean 59.5. However, the difference between age groups did not reach to a statistically significant level (Sig = 0.169).

4.11.2 QOL and gender:

The best QOL was in females with mean of quality 64.7 , then followed by males with mean 64.2, the difference between gender groups did not reach to a statistically significant level (Sig = 0.870).

4.11.3 QOL and marital status:

The best QOL was in unmarried patients with mean of quality 65.4, then followed by married patients with mean of 63.6, the difference between marital groups did not reach to a statistically significant level (Sig = 0.461).

4.11.4 QOL and educations:

The best QOL was in university group with mean of quality 67.8, then followed by illiteracy and preparatory groups with mean 62.5, and then followed by primary group with mean 62.8, and less QOL group according to educational status was in secondary group with mean 61.9. The difference between educational groups did not reach to statistically significant level (Sig = 0.267).

4.11.5 QOL and causes of losing eye:

The best QOL was in trauma / accident group with mean of quality life 67.4, then followed by pathological groups with mean 66.3, and then followed by war injury group with mean 63.77, and less QOL group according to causes of eye losing was in congenital group with

mean 61.9. The difference between causes of losing eye groups did not reach to statistically significant level (Sig = 0.145).

4.11.6 QOL and type of PE:

The best QOL was in customer PE group with mean of quality 80.2, and then followed by readymade PE groups with mean 57, and less group according to QOL was in NoPE group with mean 48.4. The difference between type of PE groups reached to statistically significant level (Sig = 0.001).

4.11.7 QOL and Time of losing eye before or after marriage:

The best QOL was in losing eye before marriage group with mean of quality 65.3, and less group was in losing eye after marriage group with mean 62. The difference between Time of losing eye before or after marriage groups did not reach to statistically significant level (Sig = 0.213).

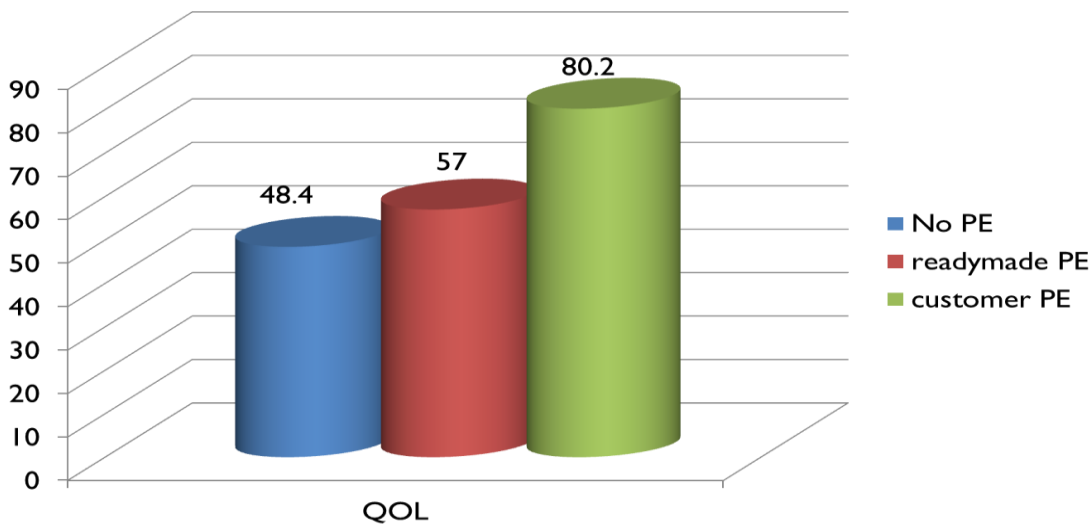


Figure (4.18) QOL and type of PE.

Sociodemographic factors of PE patients like: age, gender, marital status, educational status and causes of eye losing didn't had significant differences with quality of life. For PE patients, most concern related to PE service is matching of aesthetical PE characteristics with other sound eyeto help PE patients for improve their quality of life. This aesthetically condition has clear differences among PE groups (No PE, Readymade PE, customer PE) according to differences in manufacturing process and techniques for

each group. Quality of life for PE patients affects mainly by psychological status that related to present / absent of deformities of face without / with PE and improvement of aesthetical facial after implementation of PE service.

4.12 Satisfaction and variables

Table (4.30): Satisfaction and some of patients variables.

Variables	Nu	Mean	Std	F test	Sig.
1. Age					
20 Years old and less	37	66.11	17.09	1.118	0.343
From 21 to 30 Years old	83	68.80	19.64		
From 31 to 40 Years old	49	68.20	18.01		
More than 40 Years old	45	62.98	15.75		
Total	214	66.97	18.09		
2. Marital Status					
Not Married	92	67.20	18.75	0.157	0.876
Married	122	66.80	17.66		
Total	214	134	36.41		
3. Income					
Nothing (Zero)	44	66.18	17.05	0.538	0.657
1000 shekel or less	112	68.05	18.99		
2000 - 1000) shekel	53	66.11	17.61		
2000 shekel or more	5	58.80	11.63		
Total	214	66.97	18.09		
4. Cause of losing eye					
Congenital	27	67.56	17.43	1.545	0.204
Pathological	26	61.08	14.83		
War injury	105	66.57	19.07		
Trauma / Accident	56	70.18	17.58		
Total	214	66.97	18.09		
5. Type of PE					
NoPE	58	51.21	11.44	142.954	0.000
Readymade	67	59.67	11.03		
Costumer	89	82.74	12.66		
Total	214	66.97	18.09		

Table (4.30) shows that there is no statistical differences between age, marital status, income and cause of losing eye, with satisfaction (Sig. = 0.343, 0.876, 0.657, 0.204) respectively, while there is statistical difference between satisfaction and type of PE, the difference was for customer with mean 82.74.

4.12.1 Satisfaction and age:

The best of total satisfaction was in age group (From 21 to 30 Years old) with mean of satisfaction 68.8, then followed by (From 31 to 40 Years old) groups with mean 68.2, then followed by (20 Years old and less) group with mean 66, and less satisfaction group according to age was in (More than 40 Years old) group with mean 62.9. The difference between age groups did not reach to statistically significant level (Sig = 0.343).

4.12.2 Satisfaction and marital status:

The best of total satisfaction was in unmarried group with mean of satisfaction 67.2, and then followed by married groups with mean 66.8. The difference between marital groups regarding to satisfaction did not reach to statistically significant level (Sig = 0.876).

4.12.3 Satisfaction and income:

The best total satisfaction according to the income status was in (1000 shekel or less) group with mean of satisfaction 68, then followed by (Nothing (Zero) and 2000 - 1000 shekel) groups with mean 66.1, and less satisfaction group according to income status was in (2000 shekel or more) group with mean 58.8. The difference between income groups did not reach to statistically significant level (Sig = 0.657).

4.12.4 Satisfaction and causes of losing eye:

The best satisfaction was in trauma / accident group with mean of satisfaction 70, then followed by congenital groups with mean 67.5, and then followed by the war injury group with mean 66.5, and less satisfaction group according to causes of eye losing was in pathological group with mean 61. The difference between causes of losing eye groups did not reach to statistically significant level (Sig = 0.204).

4.12.5 Satisfaction and type of PE:

The best satisfaction was in customer PE group with mean of quality 82.7, and then followed by readymade PE groups with mean 59.6, and less group according to satisfaction was in NoPE group with mean 51.2. The difference between type of PE groups reached to statistically significant level (Sig = 0.000).

There has been an increasing emphasis about patient's characteristics that help to explain patient's perceptions, and their attitudes toward care, a number of studies had found significant associations between patient's satisfactions and sociodemographic factors such as age, social class, and race. I.e. Older patients tend to report higher levels of satisfaction than the younger patients, and women tend to be more satisfied than men (Cartwright, 1964) (Linn, 1975) (Greenley, *et al.* 1981) (Shortell, 1977).

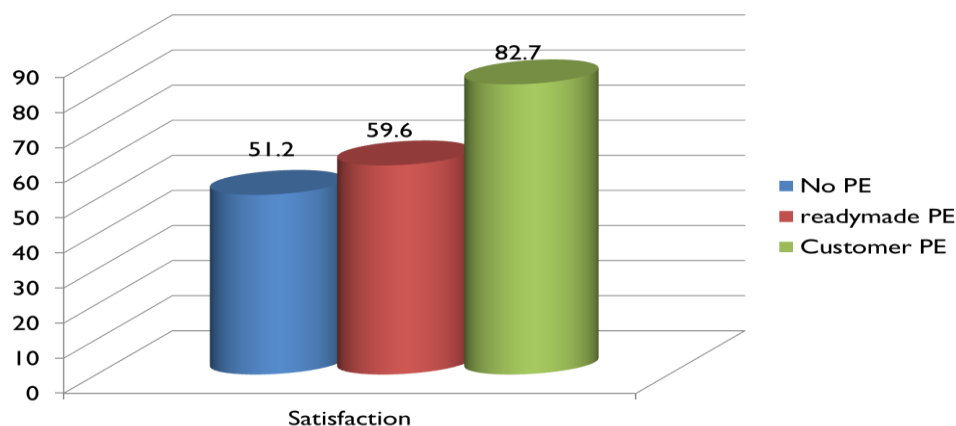


Figure (4.19) Satisfaction and type of PE.

This study showed that, PE patients' satisfaction increase if PE service was free of differences with other sound eye and free from PE side effects such as discharges/ secretions or falling from orbital cavity... etc, this explain the differences in satisfaction levels about PE service among three PE categories(No PE , readymade PE, customer PE). According to manufacturing technique and the place of delivering of PE service for each type of PE. Whereas, satisfaction levels were more in NGOs (71.6) because it provide customer PE which is characterized by better matching with other sound eye properties (N = 89, 57%), in addition to, NGOs (Al Radwan center) provide readymade PE for all PE patients whom referred from MOH (N = 45, 28.8%), This explain why the percentages of satisfaction slightly decreased in NGOs, then followed by satisfaction of medical center was (60.8) which based on delivering of readymade PE service only, then followed by satisfaction with Governmental sector (50.0) which was delivered readymade PE in previous time, but currently just refers PE patients to NGOs or providing the necessary examinations for No PE patients. So results of association between satisfaction and type of PE were as following: (customer PE = 82.7) , (readymade PE= 59.6) and(No PE = 51.2) , and for satisfaction about the financial status, the study showed that, 82.7% of participants were financed for PE service from NGOs' projects, and those PE patients do not have

financial ability to get PE service as a result to high cost of customer PE , increased of poverty rate (38%) and unemployment rate (41.0 %) in the Gaza Strip. (PCSB, 2015).

4.13 Satisfaction Domains with services place

Table (4.31): Satisfaction Domains with services place

Variables	Nu	Mean	Std	Test	Sig.
General Satisfaction					
Governmental	37	5.81	2.01	31.32	0.000
Medical center	10	7.60	2.59		
NGOs	163	8.61	1.54		
Others	4	5.25	2.06		
Total	214	8.01	2.02		
Technical Quality					
Governmental	37	3.30	0.45	21.21	0.000
Medical center	10	3.30	0.74		
NGOs	163	3.79	0.39		
Others	4	2.81	0.52		
Total	214	3.66	0.48		
Interpersonal Manners					
Governmental	37	2.96	0.38	0.420	0.739
Medical center	10	3.00	0.24		
NGOs	163	3.00	0.30		
Others	4	3.13	0.25		
Total	214	3.00	0.31		
Communication					
Governmental	37	3.86	0.95	8.920	0.000
Medical center	10	4.20	0.86		
NGOs	163	4.53	0.73		
Others	4	3.63	0.75		
Total	214	4.39	0.82		
Financial Aspect					
Governmental	37	3.86	0.86	3.184	0.025
Medical center	10	3.25	1.27		
NGOs	163	3.51	1.22		
Others	4	2.13	0.48		
Total	214	3.53	1.18		
Time Spent with doctors					
Governmental	37	2.74	1.15	9.782	0.000
Medical center	10	3.25	1.16		
NGOs	163	3.75	1.09		
Others	4	2.50	1.22		
Total	214	3.53	1.17		
Accessibility and convenience					
Governmental	37	2.91	0.78	25.44	0.000
Medical center	10	4.30	0.75		
NGOs	163	4.12	0.84		
Others	4	2.63	0.78		
Total	214	3.89	0.96		
Total of domains					
Governmental	37	49.95	11.46	20.36	0.000
Medical center	10	60.80	8.23		
NGOs	163	71.62	17.25		
Others	4	50.50	12.26		
Total	214	66.97	18.09		

Table (4.31) shows that there are statistical differences between seven domains of satisfaction and place of receiving health services the differences were for NGO's with total mean 71.62. The result regarding to the table above shows that the differences in Accessibility and convenience were for medical centers with mean 4.3 while for Governmental in Accessibility and convenience with mean 3.86.

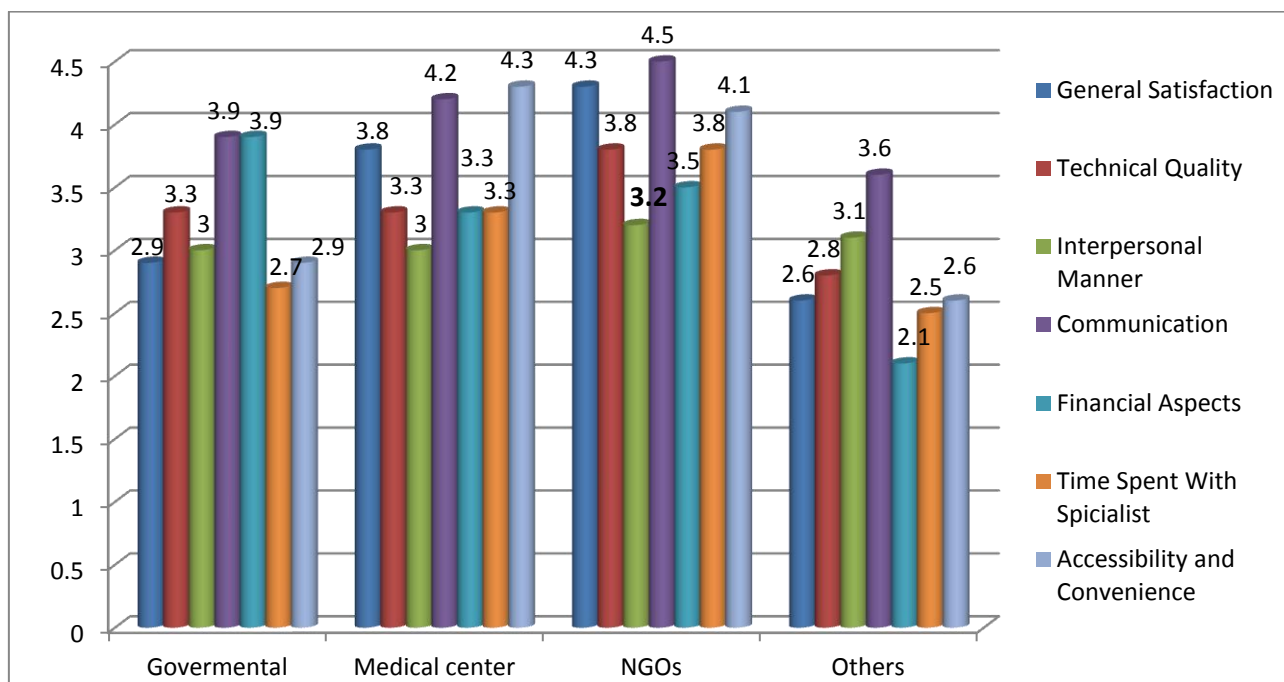


Figure (4.20) Satisfaction domains with Places of PE service.

4.13.1 General satisfaction and place of PE service:

The best in general satisfaction was in NGOs groups with mean of satisfaction 8.6, then followed by medical centers groups with mean 7.6, then followed by governmental group with mean 5.8, and less satisfaction group according to place of PE service was in other group with mean 5.2. The difference between groups of place of PE service reached to statistically significant level (Sig = 0.000).

4.13.2 Technical Quality Status and place of PE service:

The best in satisfaction about Technical Quality Status was in NGOs group with mean of satisfaction 3.79, and then followed by medical centers and governmental groups with mean 3.3, and less satisfaction group about Technical Quality Status according to place of

PE service was in other group with mean 2.8. The difference between groups of place of PE service reached to statistically significant level (Sig = 0.000).

4.13.3 Inter personal manner and place of PE service:

The best in satisfaction about inter-personal manner was in NGOs medical center and others groups with mean of satisfaction 3.00, and less satisfaction group about inter-personal manner according to place of PE service was in governmental group with mean 2.9. The difference between groups of place of PE service did not reach to statistically significant level (Sig = 0.739).

4.13.4 Communication status and place of PE service:

The best in satisfaction about Communication status was in NGOs group with mean of satisfaction 4.5 , then followed by medical centers groups with mean 4.2, then followed by governmental with mean 3.8, and less satisfaction group about communication Status according to the place of PE service was in others group with mean 3.6. The difference between groups of place of PE service reached to statistically significant level (Sig = 0.000).

4.13.5 Financial Aspects and place of PE service:

The best in satisfaction about financial aspects was in governmental group with mean of satisfaction 3.8, then followed by NGOs groups with mean 3.5, and then followed by medical centers with mean 3.2, and less satisfaction group about Financial Aspects according to the place of PE service was in other group with mean 2.1. The difference between groups of place of PE service reached to statistically significant level (Sig = 0.025).

4.13.6 Time Spent with doctors and place of PE service:

The best in satisfaction about Time Spent with doctors was in NGOs group with mean of satisfaction 3.7 , then followed by medical centers groups with mean 3.2, then followed by governmental with mean 2.7, and less satisfaction group about time spent with doctors according to place of PE service was in other group with mean 2.5. The difference

between groups of place of PE service reached to statistically significant level (Sig = 0.000).

4.13.7 Accessibility and convenience and place of PE service:

The best satisfaction about accessibility and convenience was in medical centers group with mean of satisfaction 4.3, then followed by NGOs groups with mean 4 , then followed by governmental with mean 2.9, and less satisfaction group about accessibility and convenience according to the place of PE service was in other group with mean 2.6. The difference between groups of place of PE service reached to statistically significant level (Sig = 0.000).

4.14 Satisfaction Domains with Type of PE

Table (4.32): Satisfaction Domains with Type of PE

Variables	Nu	Mean	Std	Test	Sig.
General Satisfaction					
NoPE	58	6.55	2.05	30.947	0.000
Readymade	67	8.07	1.84		
Costumer	89	8.92	1.54		
Total	214	8.01	2.02		
Technical Quality					
NoPE	58	3.55	0.48	5.918	0.003
Readymade	67	3.59	0.51		
Costumer	89	3.79	0.43		
Total	214	3.66	0.48		
Interpersonal Manners					
NoPE	58	2.96	0.35	0.679	0.508
Readymade	67	3.01	0.15		
Costumer	89	3.01	0.37		
Total	214	3.00	0.31		
Communication					
NoPE	58	4.17	0.85	5.278	0.006
Readymade	67	4.30	0.93		
Costumer	89	4.59	0.66		
Total	214	4.39	0.82		
Financial Aspect					
NoPE	58	3.09	1.34	6.172	0.002
Readymade	67	3.80	1.11		
Costumer	89	3.61	1.05		
Total	214	3.53	1.18		
Time Spent with doctors					
NoPE	58	3.23	1.18	5.012	0.007
Readymade	67	3.41	1.22		
Costumer	89	3.81	1.07		
Total	214	3.53	1.17		
Accessibility and convenience					
NoPE	58	3.54	1.05	7.553	0.001
Readymade	67	3.85	0.97		
Costumer	89	4.15	0.81		
Total	214	3.89	0.96		
Total of domains					
NoPE	58	51.21	11.44	142.95	0.000
Readymade	67	59.67	11.03		
Costumer	89	82.74	12.66		
Total	214	66.97	18.09		

Table (4.32) shows that there are statistical differences between seven domains of satisfaction and type of PE the differences were for customer with total mean 82.74

Khattak, et al (2012)Examine 7 domains of satisfaction as Accessibility/Convenience, Communication with the doctor, Financial Aspect, General Satisfaction, Interpersonal manner, Time spent with the doctor and Technical quality of healthcare, and he found six

domains (except the domain of Time spent with the doctor) showed significantly higher satisfaction scores for private sector hospitals compared with public sector hospitals.

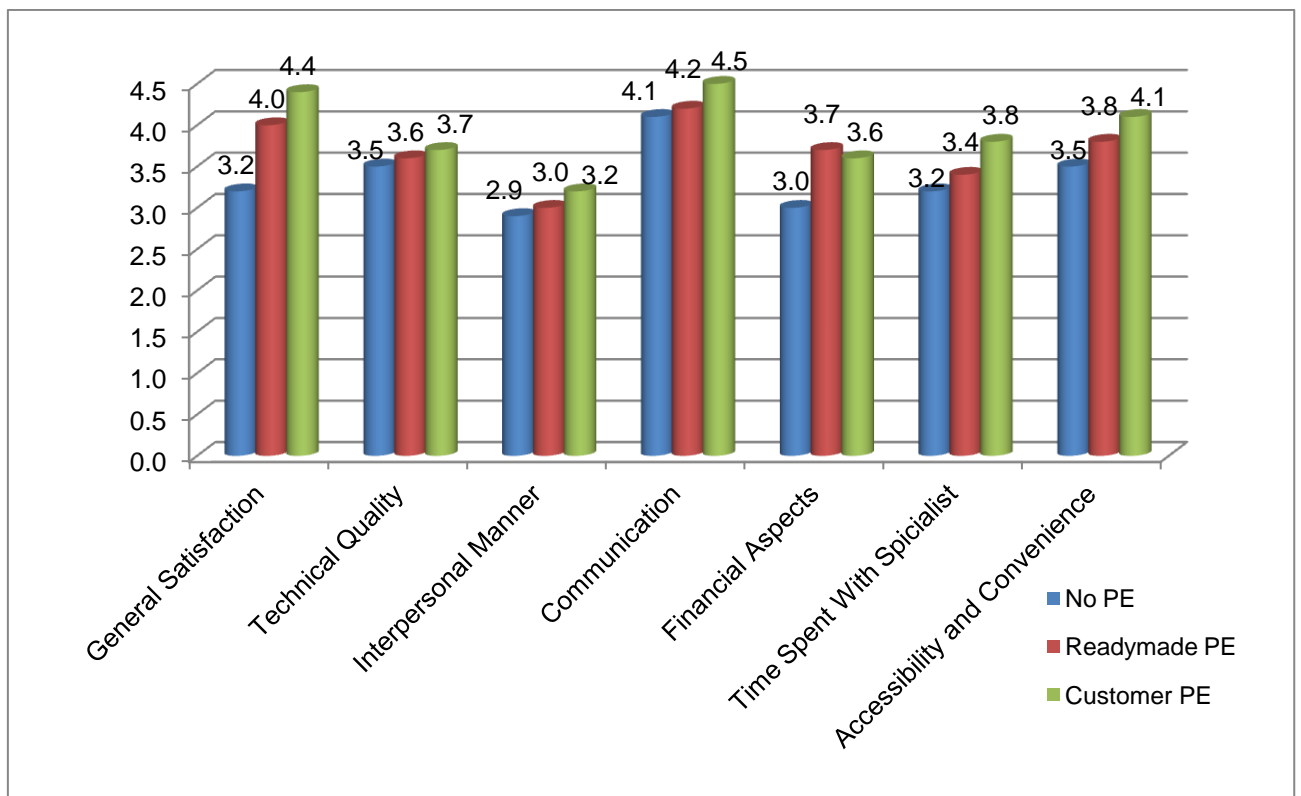


Figure (4.21) Satisfaction domains with type of PE service.

4.14.1 General satisfactions and type of PE:

The best in general satisfaction was in customer PE group with mean of satisfaction 8.9, and then followed by readymade PE groups with mean 8, and less satisfaction group regarding to general satisfaction was in NoPE group with mean 6.5. The difference between groups of type of PE reached to statistically significant level (Sig = 0.000).

4.14.2 Technical Quality Status and type of PE:

The best satisfaction about Technical Quality Status was in customer PE group with mean of satisfaction 3.7, and then followed by readymade PE groups with mean 3.5, and less satisfaction group regarding to Technical Quality Status was in No PE group with mean 3.5. The difference between groups of type of PE reached to statistically significant level (Sig = 0.003).

4.14.3 Inter personal manner and type of PE:

The best satisfaction about inter personal manner was in custom-made customer PE group, readymade PE and No PE group with mean 3. The difference between groups of type of PE did not reach to statistically significant level (Sig = 0.508).

4.14.4 Communication status and type of PE:

The best satisfaction about Communication status was in custom-made customer PE group with mean of satisfaction 4.5, and then followed by readymade PE groups with mean 4.3, and less satisfaction group regarding to communication status was in NoPE group with mean 4.1. The difference between groups of type of PE reached to statistically significant level (Sig = 0.006).

4.14.5 Financial Aspects and type of PE:

The best satisfaction about financial aspects was in readymade PE group with mean of satisfaction 3.8, and then followed by customer PE groups with mean 3.6, and less satisfaction group regarding to financial aspects was in NoPE group with mean 3.0. The difference between groups of type of PE reached to statistically significant level (Sig = 0.002).

4.14.6 Time Spent with doctors and type of PE:

The best satisfaction about time spent with doctors was in customer PE group with mean of satisfaction 3.8, and then followed by readymade PE groups with mean 3.4, and less satisfaction group regarding to time spent with doctors was in NoPE group with mean 3.2. The difference between groups of type of PE reached to statistically significant level (Sig = 0.007).

4.14.7 Accessibility and convenience and type of PE:

The best satisfaction about accessibility and convenience was in customer PE group with mean of satisfaction 4.1, and then followed by readymade PE groups with mean 3.8, and less satisfaction group regarding the accessibility and convenience was in NoPE group with mean 3.5. The difference between groups of type of PE reached to statistically significant level (Sig = 0.001).

4.15 Concerns about PE service

Table (4.33): Concerns related to PE service and variables

1. Age	Number		Means		Test		Sig	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Special concerns related to Artificial eye								
20 Years old and less	37	23	75.3	34.5	0.13	2.469	0.94	0.064
From 21 to 30 Years old	83	63	75.2	36.6				
From 31 to 40 Years old	49	37	74.0	36.4				
More than 40 Years old	45	33	75.0	46.0				
Total	214	156	74.9	38.2				
General concerns not related to Artificial eye								
20 Years old and less	37	23	68.7	42.4	0.591	0.777	0.621	0.509
From 21 to 30 Years old	83	63	69.5	43.5				
From 31 to 40 Years old	49	37	71.6	45.1				
More than 40 Years old	45	33	70.2	46.8				
Total	214	156	70.0	44.4				
2. Marital status								
2. Marital status	Number		Means		Test		Sig	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Special concerns related to Artificial eye								
Not Married	92	64	75.28	34.58	0.347	-	0.729	0.047
Married	122	92	74.72	40.75				
General concerns not related to Artificial eye								
Not Married	92	64	69.60	41.59	-	-	0.663	0.014
Married	122	92	70.26	46.40				
Total	214	156			0.436	2.474		
3. Type of PE								
3. Type of PE	Number		Means		Test		Sig	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Special concerns related to Artificial eye								
NoPE	58	N/A	77.02	N/A	3.31	124.9	0.038	0.000
Readymade	67	67	72.04	72.17				
Costumer	89	89	75.81	52.89				
Total	214	156	74.96	65.22				
General concerns not related to Artificial eye								
NoPE	58	N/A	73.90	N/A	5.96	49.75	0.003	0.000
Readymade	67	67	67.43	51.33				
Costumer	89	89	69.33	43.23				
Total	214	156	69.97	44.43				
4. Place of receiving PE service								
4. Place of receiving PE service	Number		Means		Test		Sig	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Special concerns related to Artificial eye								
Governmental	37	11	77.71	57.83	1.145	8.87	0.33	0.000
Medical center	10	10	76.23	54.23				
NGOs	163	134	74.38	35.26				
Others	4	1	69.62	59.23				
Total	214	156	74.96	38.22				
General concerns not related to Artificial eye								
Governmental	37	11	72.87	55.94	1.313	0.27	4.93	0.000
Medical center	10	10	71.77	49.77				
NGOs	163	134	69.16	43.15				
Others	4	1	72.12	36.15				
Total	214	156	69.97	44.43				

Table (4.33) shows that there are no statistical differences between concerns pre or post related to artificial eye or not with age, marital status (pre). While there is a statistical difference between concerns (related) and (not related) to artificial eye (post) with Marital Status (Sig. = 0.047, 0.014) respectively the differences were for married participants with

mean (40.75, 46.40) respectively. There are statistical differences between special concerns related to artificial eye pre, post with Type of PE (Sig = 0.038, 0.000) respectively, and the statistical differences between general concerns are not related to artificial eye pre, post with Type of PE (Sig = 0.003, 0.000) respectively. The result shows that the difference was for customer eye. Regarding to place of service there are statistical differences between special concerns related to artificial eye post with place of service (Sig= 0.000) and general concerns that are not related to artificial eye with place of services(Sig= 0.000). The result shows that the differences were for NGO's in pre while for governmental in Post.

4.15.1 Concerns with age groups:

4.15.1.1 Special concerns related to artificial eye (pre. Fitting)

The most scores of concerns that related to PE pre fitting of artificial eye with aged groups were as following: age group (20 Years old and less) was most concern with mean 75.3, then followed by age group (From 21 to 30 Years old) with mean 75.2, then followed by age group (More than 40 Years old) with mean 75 and less concerns was to age group (From 31 to 40 Years old) with mean 74. The difference between age groups and concerns that are related to PE pre fitting of PE did not reach to statistically significant level (Sig = 0.940).

4.15.1.2 Special concerns related to artificial eye (post. Fitting)

The most scores of concerns that are related to PE post fitting of artificial eye with aged groups were as following: age group (More than 40 Years old) was the most concerned with mean 46.0, then followed by mid age group (From 21 to 40 Years old) with mean 36.5, and less concerns was to age group (20 Years old and less) with mean 34.5. The difference between age groups and concerns that are related to PE post fitting of PE did not reach to statistically significant level (Sig = 0.064).

4.15.1.3 General concerns not related to artificial eye (pre. Fitting)

The most scores of concerns that are not related to PE pre fitting of artificial eye with aged groups were as following: age group (From 31 to 40 Years old) was the most concerned with mean 71.6, then followed by age group (More than 40 Years old) with mean 70.2,

then followed by age group (From 21 to 30 Years old) with mean 69.5 and less concerns was to age group (20 Years old and less) with mean 68.7. The difference between age groups and concerns that are not related to PE pre fitting of PE did not reach to statistically significant level (Sig = 0.621).

4.15.1.4 General concerns not related to artificial eye (post. Fitting)

The most scores of concerns that are not related to PE post fitting of artificial eye with aged groups were as following: age group (More than 40 Years old) was the most concerned with mean 46.8, then followed by age group (From 31 to 40 Years old) with mean 45.1, then followed by age group (From 21 to 30 Years old) with mean 43.5 and less concerns was to age group (20 Years old and less) with mean 42.4. The difference between age groups and concerns that are not related to PE post fitting of PE did not reach to statistically significant level (Sig = 0.509).

4.15.2 Concerns with marital status:

4.15.2.1 Special concerns related to artificial eye (pre. Fitting)

The most scores of concerns that are related to PE pre fitting of artificial eye with marital status groups were as following: Not married group was the most concerned with mean 75.3 and less concerns was to married group with mean 74.7. The difference between marital status groups and concerns that are related to PE pre fitting of PE did not reach to statistically significant level (Sig = 0.729).

4.15.2.2 Special concerns related to artificial eye (post. Fitting)

The most scores of concerns that are related to PE post fitting of artificial eye with marital status groups were as following: Married group was the most concerned with mean 40.7 and less concerns was to unmarried group with mean 34.4. The difference between marital status groups and concerns that are related to PE post fitting of PE reached to marginal of statistically significant level (Sig = 0.047).

4.15.2.3 General concerns not related to artificial eye (pre. Fitting)

The most scores of concerns that are not related to PE pre fitting of artificial eye with marital status groups were as following: Married group was the most concerned with mean

70.2 and less concerns was to unmarried group with mean 69.6. The difference between marital status groups and concerns that are not related to PE pre fitting of PE did not reach to statistically significant level (Sig = 0.663).

4.15.2.4 General concerns not related to artificial eye (post. Fitting)

The most scores of concerns that are not related to PE post fitting of artificial eye with marital status groups were as following: Married group was most concerned with mean 46.4 and less concerns was to unmarried group with mean 41.5. The difference between marital status groups and concerns that are not related to PE post fitting of PE reached to statistically significant level (Sig = 0.014).

4.15.3 Concerns with type of PE:

4.15.3.1 Special concerns related to artificial eye (pre. Fitting)

The most scores of concerns that are related to PE pre fitting of artificial eye with type of PE groups were as following: No PE group was the most concerned with mean 77 , then followed by customer PE group with mean 75.8 and less concerns was to readymade PE group with mean 72. The difference between type of PE groups and concerns that are related to PE pre fitting of PE reached to statistically significant level (Sig = 0.038).

4.15.3.2 Special concerns related to artificial eye (post. Fitting)

The most scores of concerns that are related to PE post fitting of artificial eye with type of PE groups were as following: readymade PE group was the most concerned with mean 72.17 and less concerns was to customer PE group with mean 52.89. The difference between type of PE groups and concerns that are related to PE post fitting of PE reached to statistically significant level (Sig = 0.000).

4.15.3.3 General concerns not related to artificial eye (pre. Fitting)

The most scores of concerns that are not related to PE pre fitting of artificial eye with type of PE groups were as following: No PE group was the most concerned with mean 73.9 , then followed by customer PE group with mean 69.3 and less concerns was to readymade PE group with mean 67.4. The difference between type of PE groups and concerns that are not related to PE pre fitting of PE reached to statistically significant level (Sig = 0.003).

4.15.3.4 General concerns not related to artificial eye (post. Fitting)

The most scores of concerns that are not related to PE post fitting of artificial eye with type of PE groups were as following: readymade PE group was the most concerned with mean 51.3 and less concerns was to the custom-made PE group with mean 43.2. The difference between type of PE groups and concerns that are not related to PE post fitting of PE reached to statistically significant level (Sig = 0.000).

4.15.4 Concerns with place of PE service:

4.15.4.1 Special concerns related to artificial eye (pre. Fitting)

The most scores of concerns that are related to PE pre fitting of artificial eye with place of PE service groups were as following: governmental group was the most concerned with mean 77.7, then followed by medical centers group with mean 76.23, then followed by NGOs with mean 74.3 and less concerns was to other group with mean 69.6. The difference between places of PE groups and concerns that are related to PE pre fitting of PE did not reached to statistically significant level (Sig = 0.330).

4.15.4.2 Special concerns related to artificial eye (post. Fitting)

The most scores of concerns that are related to PE post fitting of artificial eye with place of PE service groups were as following: others group was the most concerned with mean 59.2, then followed by governmental group with mean 57.8, Then followed by medical centers group with mean 54.2, and less concerns was to NGOs with mean 35.2. The difference between places of PE groups and concerns that are related to PE post fitting of PE reached to statistically significant level (Sig = 0.000).

4.15.4.3 General concerns not related to artificial eye (pre. Fitting)

The most scores of concerns that are not related to PE pre fitting of artificial eye with place of PE service groups were as following: governmental group was the most concerned with mean 72.8, then followed by others group with mean 72.1, then followed by medical centers with mean 71.7 and less concerns was to NGOs group with mean 69.1. The difference between places of PE groups and concerns that are not related to PE pre fitting of PE did not reached to statistically significant level (Sig = 0.493).

4.15.4.4 General concerns not related to artificial eye (post. Fitting)

The most scores of concerns that are not related to PE post fitting of artificial eye with place of PE service groups were as following: governmental group was the most concerned with mean 55.9, then followed by medical centers group with mean 49.77, then followed NGOs with mean 43.1 and less concerns was to other group with mean 36.1. The difference between places of PE groups and concerns that are not related to PE post fitting of PE reached to statistically significant level (Sig = 0.000).

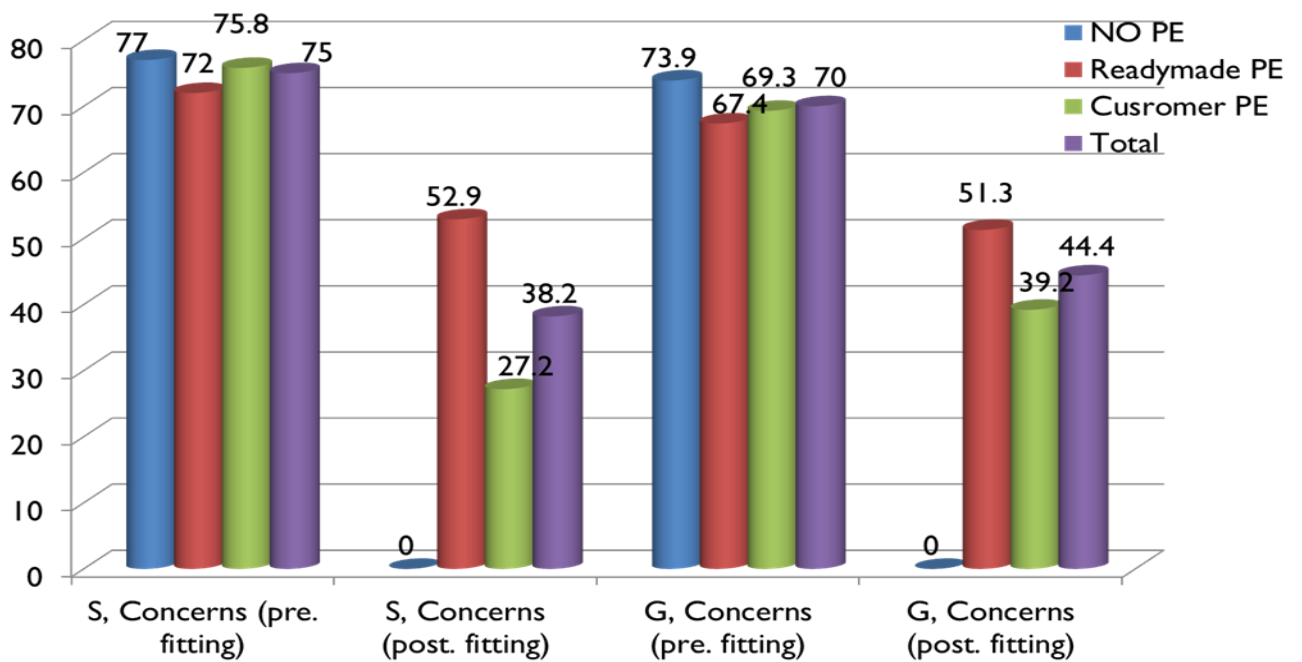


Figure (4.22) Specific & General concerns about PE service with type of PE.

4. III Qualitative result and analysis

4.16 Current needs evaluations

The exploring about current needs for PE service was measured by key's person and patients' perceptions about PE service. Key's person's in-depth interviews involve managers from governmental and private sectors. Governmental managers were from Al-Nasser ophthalmic hospital (NOH) manager and (NOH) medical director manager, while private managers were from AL Radwan medical center manager and Al Radwan Head prosthetic eye department.

UNRWA perception can't be explored because there is no PE service in its organizations.

Patients' perceptions were tested by open ended questions about the effect of losing the eye on (marital status, educational status, working status) and the importance of receiving PE service.

4.16.1 Key's person perceptions about PE service:

The community's need was examined in three dimensions (Availability of PE service, Exploring the current needs, and Limitations / weakness and opportunity for providing of PE service)

Availability of PE service was divided into two questions, First "Does the organization provide PE service for patients?" and the second question was " Is there all necessary needs to provide PE Service (experienced team - instrument and equipment sufficiency)? Hospital manager commented "*NOH currently do not provide prosthetic eye service. But in the previous time, the PE services were provided through aids convoys that come to Gaza Strip. Artificial eyes were coming as readymade PE. Truly, readymade PE does not meet the full expectations of PE patients such as to getting high matching details with sound eye, but at least for some patients to avoiding them medical complications such as avoiding shrinking of eye orbital , eyelids and minimize as possible as bad appearance of patients' face*".

hospital medical director manager and NGOs Head prosthetic eye department commented "*Currently, PE patients received PE service since 2013 through a referral of patients to AL Radwan medical center for getting readymade PE as free for all patients in Gaza Strip , despite of it was lower quality and mismatching with sound eye as a compared with*

customer PE, Hopefully we reach to provide customer PE through the Palestinian Ministry of health or purchased that service from private medical centers such as the AL Radwan medical center."

In non-governmental sector there is one center that delivers PE service "AL Radwan Center provides PE service for patients who lost their eyes since 2013, the main aim is alleviation of psychological and societal consequences for patients who lost their eyes. Where, AL Radwan center is the first Medical Center that specializes in Gaza Strip in delivering of customer PE service in private sector. This service is characterized by high quality, higher matching between PE and patients' sound eye and higher patients' satisfaction about the delivered service" (NGOs medical center manager)

And according to the affordability of PE specialist and its needs that are related to PE service in public and private sector, hospital manager and hospital medical director manager commented " Al Nasser ophthalmic hospital is the only hospital in Gaza Strip containing within his staff an Ocularist with comprehensive qualified (scientifically and technically practices). But NOH lacks to the necessary equipment, medical instruments and special laboratories to manufacturing of PE in NOH hospital. The hospital is also suffering from narrowing and lack of workplace spaces and a severe shortage of rooms for other necessary medical services including PE service."

This is consistent with (Habib, 2016) study where all interviewed managers attributed weak responsiveness to patient needs to the limited resources. Moreover, the study showed that one of weaknesses at NOH's service is lacking to essential equipment, drug shortage, medical, workplaces and surgical supplies.

And consistent with Shamia (2016) study findings, where 71.5% of respondents reported that the siege period had negatively affected on availability of equipment and medical supply qualitatively.

Current critical MOH situation and devastating fragmentation contribute to the deterioration of enabling work conditions. NOH's medical director commented on the qualitative part..."Improving enabling work conditions in current siege situation, where we lack resources, could be hardly achieved". (Habib, 2016)

But in NGOs medical center's manager commented *"AL Radwan center has two Ocularists, with a high professionalism and competitive experience regarding to PE manufacturing. Also, it has had appropriate equipment, laboratories, reception room, and clinical examination rooms to provide a satisfactory service and best service quality to the lost eyes patients "*.

Regarding to exploring the current needs were tested by two questions, the first one was "What is the extent can you assess the current needs for PE service?" the second question was "To what extent can you identify the main reasons that lead to obligatory providing of PE service in Gaza Strip?"

Both of the managers of the governmental and NGOs sectors commented *"Providing PE service in Gaza Strip is a necessary need for residents of Gaza Strip and patients who lost their eyes and that didn't find compensatory treatment like PE. Also, PE service is considered as a medical rehabilitation service based on reduction of psychological and societal burdens and enhancing social relationships between patients and their families , their husbands and their communities to achieve a significant integration with their community "*

Extra comments additional to the previous parameters were *"cost of this service compared with the situations of living standards for PE patients and negative effects resulting from absence of this service and it's consequence like social isolation."*(NGOs medical center manager)

regarding to reasons for necessarily of implementations PE service, hospital manager commented *"The main reasons for implementation of PE service in Gaza strip are following :(1) numbers of the lost eyes patients in Gaza strip were increased regarding the war wounded specially women and children from the Israeli aggressions , up to 40% of the total cases of eye lost patients . (2) The other main reason is the continuing siege on Gaza Strip and the continuing closure of borders with Israeli. (3) Prevent patients from travelling outside the Gaza Strip led to increase their suffering without having rehabilitative interventions like PE service."* A medical director manager also commented *"(4) reduction or relieves of mental pain and dysfunctional activities regarding to eye losing. (5) Priorities for referral patients outboard Gaza Strip in Palestinian Ministry of health do not include PE patients among the priorities issues for referral because of*

difficult siege on Gaza Strip that led to difficult referral of patients for treatment only in exceptional cases for critical illness patients, or those closure to lose their lives. (6) PE service not included in regulations of health insurance "

NGOs sectors' managers agreed with most of governmental reasons about implementations PE service and added an extra comment " *PE patients stopped their essential life issues like marriage, working and education, their access to these issues depend on having an appropriate customer PE, difficult financial situation in Gaza Strip and the high cost of having of customer PE service, negatively psychological impact on the lost eye patients and feeling with isolations in their society, and developmental growth for eye orbital specially for children who need to repeat manufacturing of PE with new size according to changes in patients' age*". (NGOs Head prosthetic eye department)

Regarding to the limitations / weakness and opportunists for providing of PE service there were two questions, first "What are the main obstacles or limitations to provision of PE service in the organizations?" The second question was " are there current or future plans to provide PE service for patients? ", most commented were reported for public sector as "*lack of necessary equipment and instruments for manufacture of PE .lack of rooms and spaces that needed for opening of special laboratories for PE service "* (hospital manager) While NGOs medical center manager commented "*a high cost of manufacture of customer PE with the absence of the necessary funding for projects that support PE patients , a large number of wounded who require surgical intervention before implementation of PE , which is very high costly "*. Others comments were " *Increasing number of PE patients from poorer class people that led to increasing numbers of PE Patients whom can't be able to pay for PE service, lack of a governmental or non-governmental attention to PE patients, and about their concerns or after losing the eye, and difficulties entry for materials and equipment that need for manufacturing of customer PE because of the siege on Gaza Strip "*. (NGOs Head prosthetic eye department)

Habib, (2016) found that, financial access was also inadequate, and it could be attributed to current situation of Gaza siege and shortage of equipment and medical supplies. Patients are complaining about the inability of paying for services especially for surgical procedures, as the insurance co-payment exceeds their financial ability in addition to the burden of paying for surgical disposables.

And about the features plans for PE service hospital manager and medical director manager commented "(1). *Providing artificial eyes services in eye hospital, (2) purchasing or cooperating services agreement with private medical sector or with NGOs organizations to provide customer PE service. (3) Increase awareness or participation with charitable medical institutions to highlighting about the importance of providing PE service in Gaza Strip*".

Hospital manager ended the interview by these words" *Finally the entry of customer PE service in Gaza Strip through AL Radwan medical center is **considered as a national achievement in Palestinian health care system**. We hope to develop working mechanisms through the Palestinian Ministry of health with AL Radwan center to provide a satisfactory healthcare for PE patients "*.

while NGOs medical center manager hopes to " increasing attention and careful with PE patients sector with more attention to alleviating the suffering of patients that caused by losing the eye through providing appropriate PE service as a minimum, also we are seeking to attract financing funds and directing the supporting resources to sponsor this necessary service, that leads to an increase in the number of PE patients beneficiaries ".

4.16.2 Patients perceptions about PE service:

The questions that were asked to all PE patients were about: (1) The Effect of losing the eye or fitting PE service on Marital Status? (2) The Effect of losing the eye or fitting PE service on educational status? (3) The Effect of losing the eye or fitting PE service on working status? While in importance of PE service's questions were: (1) Do you have the ability for dispensing of artificial eye (or in future for NoPE patients)? (2) Did you have concerned feeling about losing artificial eye or not being able to gain alternative offers in the future? (3) Have you had a verbal or actual comments aim to mocking you with or without PE? (4) Is getting artificial eye give you confidence in yourself and in front of others? (5) Is losing the eye decrease your confidence in yourself and in front of others?

The majority of PE patients from both genders (male and female), especially women expressed a bad impact on the marital situation, such as:

The main reason for community to reject them or to avoid their marriage was the loss of their eyes and looking at them in pity, feeling and dealing with them as disabled persons.

Some patients, especially the married women expressed that *"losing their eyes putting them closure to an ended marital life by divorcing "*.

In addition to that, the majority of patients who were married and have families and children expressed that after losing their eyes they felt that they were outcasts from their wives and children and they are looking to them in disgusting way .

One of patients commented *" I love my children and my wife but the most thing that kills me that they escape me and don't deal with me, I'm like a stranger in my house and with my kids, we used to eat together before losing my eye, but now I often eat alone because my kids are afraid of eating with me"*

And another woman commented *"My life's ' aspiration is having a family and kids like others. I hate myself and I hate my lost eye because it was responsible for the sadness in my life"*

Another woman commented *"I want the PE not to be noticeable by others, especially my husband, because I was close to lose my marriage life and will be divorced"*

Another woman commented *"do you know anyone who is able to marry me without a dowry or other expenses"*

Another patient **commented with crying** *" My wife had changed to the worse when I lost my eye especially during the sexual intercourse, and my grandchildren are running away from me when they see me, scared from me, in the past I used to open my houses' door they were running towards me and hugging me directly, but now I'm missing so much those hugs from my grandchildren as they used to"*

While patients who lost their eyes and have the customer PE talked about the marital life that, they became more acceptable by their wives and their children and their families, some of them got married after fitting of PE while they were rejected from their society due to the loss of their eyes.

One of them commented *"my life has completely turned positively upside down when I got PE. It's impossible to imagine my life without artificial eye, and I would never get out of my house if I lost my artificial eye"*

Another patient commented " *I lost my eye when I was engaged, my fiancée refused to go through the marriage procedure, and she expressed that she wishes to separate from me, but when I fitted PE with super matching to my sound eye, she agreed to have the marriage ceremony, and now we have a family and kids and we live a pleasant life*"

Regarding the effect of losing the eye or fitting of PE on working status we found that, most of PE patients who lost their eyes expressed that they have bad consequences on their work or on the opportunity of getting a job in future. The reason behind that is that the majority of patients wear dark glasses or put a cover over the empty eyes, while the majority of business is based on dealing with public directly and on proper use of faces' body language, like the vendors and drivers and reception offices employees ... etc. This made the employers to kick them out of the work or not having the desire to employ them.

Others expressed that " *they were forced to change the nature of their work and time of working to suit the nature of their new health situation, where they were forced to reduce their working hours due to the feeling of exhaustion when using their one eyes, and most of them are concerned to remove secretions or discharges and feeling with inferiority complex when other people looked at them or to their empty eyes*".

Others expressed that "they were forced to leave their jobs and be working in other jobs which have less dangers on their sound remaining eyes such as construction workers, carpenters, metalworkers and paint workers".

One of patients commented "I lost my eye in Gaza's wars, that led to losing my job and I was fired from my work because I have a deformed face referring to the missing of my eye"

Another commented "I'm afraid to hammer a nail in my house's wall because I'm more afraid about my sound eye which is unique, it is considered as the gateway of hope in my life"

Another patient commented "I feel that I'm being a dependent person on my society since I lost my eye, my life became as living in hell, I just want a job with limited income, which is saved for my eyes, to get main living needs to feed my children"

While some patients when received PE, they expressed that *"they have a safe work and less dangerous to other eye. They attributed their ability to having PE with high matching to other eye, makes them undiscovered in front of others as missing eye patients"*

One patient commented *" I was a receptionist at a good reputation company, but when I lost my eye, my manager of work ordered me to change my work position to the stores because the receptionist deals directly with people and needs to be free of any face deformity. So I worked as a store employee for six months, but after fitting PE I came back to my original work as a receptionist, so I'm very happy"*

Another patient commented *" I work as a peddler salesman and I have PE with very matching with my sound eyes, but sometimes I was stolen from blindness PE's side, So it's a big problem to me"*

And other patients agreed about the following *" the most embarrassing thing to me, that I can't see people or dealing with them when they come from blindness side, or others try to shake my hand from missing eye's side , sometimes I'm forced to shocking with people in the markets which that causes to me a lot of embarrassment with them especially if they were women, whereas I'm forced to explain my situation to them and then apologize to them, some of them understands my conditions , others give me a contempt looking then walk away"*

Regarding to the effect of losing eye or fitting of PE on educational status results found that most of PE patients expressed that the loss of the eye was the main reason for un-completing their education or it has an adversely an impact during their education. The reasons for leaving the education was their bad o psychological status because they were mocked in classrooms, or lacking concentration during their study as a result of missing clear vision by single one eye like others.

One patient commented *"the most something I hated in my life was going to school, everyone was looking at me or at my empty eye every day, I heard bad comments that were mocking me, so I left school forever"*

Another patient she commented *" I'm daily sit alone in my room and continuously crying, because my friends comments and mockery on my lost eye, so I left school to get out from this bad psychological situation"*

While other patients who had customer PE commented " *at the beginning of losing our eyes, we hated school because they were mocking us and listen daily to bad comments related to our eyes, but after we got customer PE the situation is completely different now, we went to the university and completed our education and we got a job as well*"

Regarding to importance of PE service, result showed that:

About the possibility of being abandoned of PE all patients expressed that it is impossible to happen, so they can't imagine themselves without PE in future. Where they expressed that they were exposed to bad verbal and actions comments, especially from street's children or when they walked in markets alone or beside their families and hear nasty words like (blindness man or AAwar which means a missed eye man.

So one of them said "*when he lost his PE, he didn't leave his house for three months and he transformed into an isolated person, until AL Radwan Funded and provided him a customer PE, which was considered as a new gate for his life*"

All patients fear from can't receiving PE service again in the future or not being offered an alternative treatment after losing their PE or when they need to change their PE. So they hope that, the Ministry of Health or charities organization will implement this service or purchase it from private sectors like Al Radwan medical center in the future. Because it gives them more confidence about themselves and more confidence in front of others, and gives them a gate of hope to continue their lives normally like others.

Finally, one of PE patients summarizes the benefits of PE service by this gold statement

"PE opens a new gate of hope for my life and brings the smile back to my face after a long time of absence ".

So "If there's a defect on the soul, it cannot be corrected on the face. But if there is a defect on the face & one heals it, it heals the soul..." (NareshShetty, 2012)

Chapter 5

5. Conclusion and recommendation

5.1 Conclusion

This study is the first study in Palestine and Gaza strip which aims mainly to evaluate the effect of PE service in Gaza Stripe as a rehabilitation service for PE patients and it takes place in two places; governmental hospital – Al Nasser hospital of ophthalmology and NGOs center – Al Radwan medical center for ocular prosthesis.

Losing of the eye affects multidimensional aspects of life; physical, psychological, financial and social aspects, where these aspects contribute highly in increasing the quality of life, productive abilities and emerging them in normal manner in their families and communities such as persons without disabilities.

5.1.1 Quality of Life

This study showed a decrease of quality of life for PE patients according to WHO Standards that were as the following; total weighted mean of Quality life for all PE patients was 64.38%. The most affected aspect of quality of life is the psychological status with the lowest weighted mean 58.82%, while the physical activity was the least affected domain with the highest weighted mean 68.69%, followed by the social relationship with weighted mean 65.83%, while weighted mean for the environment status was 64.24%.

This study showed that there are significant differences in scores of quality of life among PE participants. This disparity attributed mainly to availability of PE service or not as in (No PE patients and others type)? And is PE had similar characteristics with other sound eyes or not as in (readymade PE patients and customer PE)?, and what is the extent of matching with sound eye (such as customer PE)?

Moreover, the findings of this study showed that the psychological status for PE patients was the most affected domain by losing the eye among QOL domain. Thus, psychological status had adversely influences on other domains for quality of life. Additionally, patient's psychological factor plays an essential role in patient's ability to face people, dealing with them and make social relationships with their community.

In addition, psychological status affected physical capacity of PE patients where, less psychological status lead to less physical activity and the improvement in psychological status led to more motivation and more increasing in physical activity.

Quality of life and following sociodemographic variables: age, gender, marital status, educational status, cause of losing the eye, showed no correlation. This demonstrates that, PE patients have the common interest about improving their appearances regardless of there are differences in sociodemographic variable between PE participants.

This study shows that there is a relationship between quality of life and type of PE groups as following: mean of QOL for customer PE patients was (80.28) then followed by mean of QOL for readymade PE patients (57.08) and mean of quality of life for No PE patients (48.46). These differences among three groups of PE patients are attributed to differences in quality of manufacturing and matching details with other sound eye between three groups. This indicates that, the common interest for all PE patients is improving their facial appearance and there are not noticeable differences in their PE which may lead to asymmetrical appearance between both eyes.

Results showed also, there are clear differences in social status and formations of social relationships with others such as friends , family and community or work, whereas , more improvement in psychological status by good matching between both eyes led to more improvement and more ability to form social relationships and vice versa.

5.1.2 Satisfaction about PE service

Patients' satisfactions about PE service were good with total weighted mean of satisfaction 74.58%. The highest domain was "communication" with weighted mean 87.7% followed by general satisfaction with weighted mean 80.1%. Then accessibility and convenience with weighted mean 77.8 %. While the weighted mean for technical quality was 73.3%. Weighted mean for the financial aspect and time spent with doctors were equal 70.6%. Lowest weighted mean was 66 % for interpersonal manners.

This study showed that, PE patients' satisfaction increase if PE service was free of differences with other sound eye and free from PE side effects such as discharges/ secretions or falling from orbital cavity... etc, this explain the differences in satisfaction levels about PE service among three PE categories (No PE , readymade PE, customer PE).

According to manufacturing technique and the place of delivering of PE service for each type of PE. Whereas, satisfaction levels were more in NGOs (71.6) because it provide customer PE which is characterized by better matching with other sound eye properties (N = 89, 57%), in addition to, NGOs (Al Radwan center) provide readymade PE for all PE patients whom referred from MOH (N = 45, 28.8%), This explain why the percentages of satisfaction slightly decreased in NGOs, then followed by satisfaction of medical center was (60.8) which based on delivering of readymade PE service only, then followed by satisfaction with Governmental sector (50.0) which was delivered readymade PE in previous time, but currently just refers PE patients to NGOs or providing the necessary examinations for No PE patients. So results of association between satisfaction and type of PE were as following: (customer PE = 82.7) , (readymade PE= 59.6) and(No PE = 51.2) , and for satisfaction about the financial status, the study showed that, 82.7% of participants were financed for PE service from NGOs' projects, and those PE patients do not have financial ability to get PE service as a result to high cost of customer PE , increased of poverty rate (38%) and unemployment rate (41.0 %) in the Gaza Strip. (PCSB, 2015). Also results of study showed that, satisfactions about the accessibility to PE service in NGOs (mean = 4.12) and medical centers (mean = 4.30) are better than in the public sector (mean = 2.91).

5.1.3 Special / general concerns pre / post fitting of PE

The results of Concerns pre and post fitting of PE showed that, the total mean of Concerns before and after having the artificial eye was decreased from 7.5 (75.0 %) to 3.8 (38.0 %).

This study showed that, most of PE patients' special concerns that are related to PE service will disappeared over time if PE patients had PE service with good similarity and matching with other sound eye and good manufacturing technique. Most of these concerns are related to the external appearance of the removing eye and face after fitting of PE because they are related to communicating with others or facing of people and society and meet of PE patients' need when it is not noticeable from others, and the variations in concerns levels are related to deferent type of PE (NoPE, readymade PE, customer PE). Where, concerns of these typeswere as following: (No PE pre = 77%), customer PE (pre =75.8%, post = 27.2%), readymade PE (pre = 72%, post = 52.9%).

This can be attributed to different levels of PE patients' satisfactions about quality of PE service for each type and what are concerns that related to each type.

The highest concern pre and post fitting of PE was for "Loss or damage of PE" (pre = 92%) and (post =98.4%) for all participants. That reflects the importance of PE service to them.

Also results showed that, most of general concerns were related to surgical conditions and Sid effects of monocular vision syndrome, and most of these concerns reduced gradually with time, but some of these concerns stayed such as: health of the remaining eye (post= 93.4%) , and reduction in visual field (post= 81.4%) and communication with others from blind side (post = 78.6%) , and some of concerns had mild reduction levels according to type of PE, that's referred to quality of PE service such as: post fitting of readymade PE (people staring to PE post= 82%) and (changing in external appearance post =59.7%) and (ability to get work and job post = 69%)

5.1.4 Conclusion of qualitative finding

The qualitative part of the study shows that providing PE service in Gaza Strip is a necessity for PE patients who lost their eyes and didn't find compensatory treatment like PE. Continuity of Gaza siege prevents the development in prosthesis eye services. The study showed that the entry of customer PE service in Gaza Strip through Al Radwan center for customer PE is considered as national achievement in Palestinian health care system where that center is the first center in Gaza Stripe provided customer PE service. The PE service is an important community need due to the continuous increasing of eye injuries due to wars and accidents, where the numbers of eye lost patients in Gaza strip regarding war wounded from Israeli aggressions are increasing, more than 40% from the total cases of eye lost patients.

Moreover, the study showed that the Governmental sector lacks preparation for PE service where lacking to the necessary equipment and medical instruments and special laboratories to manufacturing of PE in hospital, while NGO's provide high quality PE service and have a well-trained staff and needed equipment.

Furthermore, the study showed the harmful effect of losing eyes and the need for PE service in Gaza strip, many stories and comments were expressed through PE patients

where patients had negatively affected by losing their eyes in regards to marital status, educational status, and working status.

5.2 Recommendations:

The below recommendations are proposed to improve the integration of disabled person as generally and PE patients as specific in their community, whereas PE patients are considered disabled people visually.

5.2.1 Policy work and coordination

Support the operationalization of action plans and strengthen coordination by:

1. Develop national disability strategies that document governmental commitment to a rights-based approach which outlines objectives, targets, indicators for achievement, establish clear responsibilities of all parties and institutions involved in the delivery of services for persons with disabilities included PE patients and PE service and ensure adequate budgeting to provide a comprehensive health, educational, rehabilitative, psychological, social care, and financial benefits for them.
2. Ensure that concerns of persons with disabilities and PE patients are properly mainstreamed into all policies in order to ensure equal access to education, health care, employment. In addition to, insuring equal ability to live independently and fulfill life to the highest possible extent.
3. Allocating specific budgets to promote the rights of PE persons with disabilities in their society
4. Ministries and Government institutions has an essential and important role to provide special needs, services, laws and legislation that protect rights of PE patients as they considered persons with disabilities.
5. Palestinian Legislative Council must have more control on government's action in implementations of disability laws, and do needed legislative modifications if needed. Such modifications are supposed to meet international standards, and be more questioning those responsible about failure in implementing and enforcement this laws.
6. Ministry of Social Affairs: needs to pay with more attention to PE patients and provide their special needs included PE service.

7. Ministry of education: integrating the PE persons with disabilities in general schools or ensure to involving them in special schools if they need.
8. Ministry of health: establishing special health departments to provide full health care and devices needed to PE patients. These departments must have the needed equipment and instrument for PE service.
9. Ministry of labor: working on integrating the PE patients in safe industrial organizations, and encourage employers to employing them by relieving this organizations from some fees and taxes, and identifying a certain percentage for PE patients to be employed.

5.2.2 Education sector

Increase and monitor enrollment of PE patients into educational institutions and non-formal education program by:

- 1- Implement a comprehensive societal rehabilitation process which is supposed to embark on schools' curriculum that drag students', teachers' and families' attention to the best ways in dealing with them and protect them from harm.
- 2- Establish mechanisms to monitor mainstream enrollment of PE patients into education and expand methods of community based rehabilitations support to PE patients and grantee good accessibility to education.
- 3- Further exploration for feasible models to integrate special education needs facilities into education provisions.
- 4- Promote intervention initiatives that address PE patients and persons with disabilities who drop out of school to ensure the continuity of their education.
- 5- Support and encouragement research centers to develop and implement specialized research in various fields relating to the disabled persons and those with special needs and create databases for planning programs.

5.2.3 Health sector

- 1- Strengthen early detection and treatment for the diseases which cause losing of the eye and strengthen early primary medical rehabilitation.
- 2- Extend the health insurance service provision to include rehabilitation services like customer PE service for PE patients.

- 3- Set up effective internal and external referral procedures and partnership programs between medical and rehabilitation care providers within and between the MOH, UNRWA and NGOs.
- 4- The health care providers should collaborate and implement methods that ensure that people with disabilities like PE patients are fully included in health promotion and disease prevention program development, public education, and development of best practices.
- 5- Seeking forward to provide customer PE services within MOH facilities.
- 6- Providing proper training for the medical staff at eye care facilities of MOH.
- 7- Purchasing or cooperating services agreement with private medical sector or with NGOs organizations to provide customer PE service.

5.2.4 Employment sector

- 1- Promote employment and inclusion of PE patients in public jobs.
- 2- Ensure the fulfillment and monitor the implementation of the current 5% quota system of disabled people, including PE Patients, in the public sector and establish and enforce rewards for compliance or penalties for non-compliance of private employers.
- 3- Adopt more proactive labor market policies for the inclusion of PE patients into the labor market by providing employers with incentives to hire PE patients, such as wage subsidies, reducing income taxes, sharing the cost of workplace adaptation, supporting social enterprises, and developing special forms of employment in cases where the integration of workers with disabilities in the competitive labor market is not possible.
- 4- Carry on advocacy and awareness campaigns among employers raise their awareness of the talent and the skills of PE patients.

5.2.5 Social sector.

To promote full participation of person with disabilities and PE patients in their own community with the support of their family and community

1. Encourage Disabled Person's Organizations and recreational facility providers to promote the inclusion of PE patients in their wider activities and programs;
2. Strengthen the capacity of Disabled Person's Organizations to provide specific support to PE patients and equip PE patients with the necessary skills to be able to equally participate.

3. Improve PE patients' rights and control mechanisms to: keep their dignity, ensure equal work right, education, rehabilitation, reducing discrimination between PE patients and others in their society and prevent terms of disabilities which may effect on their personality and psychological status.
4. Avoid social stigmatizing of PE patients by feeling with shortcomings and deficits and on the other hand, ensure displaying their efficiency and positive activities.
5. Replace negative terms of disabilities, with alterative terms might be more positive as special groups or persons with special needs which is involves more positive expressions.
6. Integration of PE patients into rehabilitation programmers and services is necessary. these programmers like: social, psychological , medical aids and educational enable PE patients to be more independent to develop their abilities and to achieve an appropriate degree of self-autonomy, rehabilitation programmers include:
 - Psychosocial rehabilitation that helps PE patients to confront problems and determine their causes and treatment.
 - Medical rehabilitation insures reaching the highest functional level for physical and mental conditions.
 - Educational rehabilitation which is designed to fit and suite the needs of PE patients.
 - Vocational rehabilitation for PE patients to give them guidance and vocational training for professional services.
 - Social rehabilitation that help PE patients to be more adaptation and enhancing the social integration in their society.
7. Implement the projects that lead to marriage of PE patients from both genders and assist them in the marriages' costs.
8. Provide incentives to PE patients to override their disabilities and recover their positions in their lives and society.
9. Support to civil society and NGOs in the process of family and social rehabilitations to increase society awareness to change the negative perceptions about persons with disabilities.

5.2.6 NGOs and Private sector

- 1- Increasing awareness or participation with charitable medical institutions to highlighting on the importance of offer and deliver of PE service in Gaza Strip.
- 2- Working on preparing and presenting programs to increase awareness of community about the ideal dealing with concerns of PE patients.
- 3- Elimination of all forms of discrimination against PE patients and people with disabilities by enactment of principles of equality, promote the adaptation of PE patients and the disabled to be more independent and have full participation in all fields of life.
- 4- Following and controlling the activities that aimed to respect the rights of PE patients with disabilities, preparing seminars and conferences that contribute to awareness about the rights of PE patients as persons with disabilities.

5.2.7 Cooperation between Oculoplastic surgeon , Ocularist and PE patients.

- 1- Close collaboration of the oculoplastic surgeon and the ocularist is necessary to ensure the best long-term rehabilitation of the patients concerned.
- 2- Suboptimal prosthetic fitting could spoil the best evisceration/enucleation surgery.
- 3- All patients who wear an ocular prosthesis following removal of an eye should have a custom PE, impression-fitted ocular prosthesis, as this is the most effective way to minimize or avoid the side effects of ready-made prosthesis.
- 4- An anophthalmic patient's socket should be checked at least once a year.
- 5- Ocular prostheses are 24 h a day devices whose life varies from patient to patient but is generally between 2 and 6 years in adults or in 6 months and 1 year in children, after that should be changed.
- 6- An ideal regime of extraction and cleaning has been preferred cleaning agents are **rigid contact lenses cleaner, and mild soap or baby shampoo**. Abrasive cleaners are to be avoided.
- 7- Daily cleaning of eyelids and eyelashes should be performed in all cases.
- 8- Professional cleaning/polishing of the prosthesis is necessary at least 6 months and once a year, or more frequently if deposits are visible on the surface.
- 9- When necessary, frequent lubrication of the prosthetic eye is also recommended, to improve tolerance and reduce complications.

Chapter 6

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Chapter 7

7. Annexes

7.1 Annex (1): Map of Palestine



Source: (PCBS, 2016)

7.2 (Annex 2): PE patient questionnaire (Arabic versions)

أخي الكريم/ أختي الكريمة:

السلام عليكم ورحمة الله وبركاته.....

هذه دراسة بحثية بعنوان "تقييم خدمة العيون الاصطناعية في قطاع غزة "

نشكركم على موافقتكم بالمشاركة في هذا البحث حيث تم اختيار شخصكم الكريمة بعد أن توفرت فيكم جميع معايير اختيار العينة لهذا البحث. علماً أن هذا البحث هو بمثابة متطلب تخرج للحصول على درجة الماجستير في الإدارة الصحية من كلية الصحة العامة - جامعة القدس.

وتهدف هذه الدراسة لتقييم خدمة العيون الاصطناعية في قطاع غزة لمعرفة تأثير العيون الاصطناعية على الوضع الاجتماعي للمريض ومدى نفعها وتلبيةها لحاجة مرضى العيون الاصطناعية بقطاع غزة مما يعطي الباحث فرصة لمعرفة نقاط القوة والضعف لخدمة العيون الاصطناعية لتقديم التوصيات اللازمة لتطويرها وتحسين جودتها مما سيعود بالفائدة على مرضى العيون الاصطناعية.

لذا يرجى التكرم بالإجابة على جميع الأسئلة الواردة في الاستبانة وذلك بغرض الخروج بنتائج وتوصيات تسهم في تحسين جودة الخدمة وسوف تستخدم المعلومات الواردة لأغراض البحث العلمي فقط.

ملاحظات هامة:

مشاركتك في تعبئة هذه الاستبانة تعتبر ذات أهمية كبيرة، والمعلومات سوف تكون بسرية تامة لكافة البيانات الشخصية الواردة في الاستبانة.

• تعبئة هذه الاستبانة اختيارية وغير ملزمة، لذلك في حال الشعور بعدم الارتياح يمكنك أن تتسحب بدون أي

احراج.

• تستغرق تعبئة الاستبانة 20 دقيقة تقريباً.

شاكرين لكم حسن تعاونكم

الباحث/ صبري محمد حجاج

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Ontom.sabrv2010@hotmail.com

رقم التسلسل	تاريخ تعبئة الاستبانة
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أولاً: البيانات الشخصية والديموغرافية	
العمر	الهوية
الجنس	ذكر <input type="checkbox"/> أنثى <input type="checkbox"/>
الحالة الاجتماعية	أعزب <input type="checkbox"/> متزوج <input type="checkbox"/> غير ذلك (أرمل ، مطلق) <input type="checkbox"/>
هل لفقد العين أو تركيب العين الاصطناعية أي أثر على الحالة الاجتماعية؟	لا <input type="checkbox"/> نعم <input type="checkbox"/>
إذا كانت الإجابة بنعم يرجى التوضيح	
مكان الإقامة	شمال غزة <input type="checkbox"/> غزة <input type="checkbox"/> الوسطى <input type="checkbox"/> خان يونس <input type="checkbox"/> رفح <input type="checkbox"/> المنطقة
تسكن في	مخيم <input type="checkbox"/> قرية <input type="checkbox"/> مدينة <input type="checkbox"/> نوع السكن ملك <input type="checkbox"/> اجار <input type="checkbox"/>
المنطقة	حدودية <input type="checkbox"/> غير حدودية <input type="checkbox"/>

المستوى التعليمي	امى <input type="checkbox"/> ابتدائي <input type="checkbox"/> إعدادي <input type="checkbox"/> ثانوي <input type="checkbox"/> جامعي <input type="checkbox"/> منقطع <input type="checkbox"/>
هل لفقد العين أو تركيب العين الاصطناعية أي أثر على مستواك التعليمي؟	لا <input type="checkbox"/> نعم <input type="checkbox"/>
إذا كانت الإجابة بنعم يرجى التوضيح	

طبيعة العمل	قبل فقد العين	بعد فقد العين	بعد تركيب عين اصطناعية
الدخل الشهري	شيكل	كم شخصاً تعيل	
هل لفقد العين أو تركيب العين الاصطناعية أي أثر على طبيعة العمل؟	لا <input type="checkbox"/> نعم <input type="checkbox"/>		
إذا كانت الإجابة بنعم يرجى التوضيح			

نوع التأمين الصحي	مدني <input type="checkbox"/> عسكري <input type="checkbox"/> وكالة <input type="checkbox"/> شؤون اجتماعية <input type="checkbox"/> شهداء وجرحي <input type="checkbox"/> عمال <input type="checkbox"/> غير ذلك <input type="checkbox"/>
التأمين الصحي يغطي تكاليف العين الاصطناعية	لا <input type="checkbox"/> نعم <input type="checkbox"/> نوع المواطنة مواطن <input type="checkbox"/> لاجئ <input type="checkbox"/>

ثانياً : البيانات السريرية	
سبب ضمور أو فقد العين:	تاريخ فقد العين
خلعي <input type="checkbox"/>	قبل أم بعد الزواج / الطلاق
مرضية <input type="checkbox"/>	هل تملك عين اصطناعية
إصابة <input type="checkbox"/>	نوع العين الاصطناعية
انتفاضة <input type="checkbox"/>	جهة التمويل المالي للعين الاصطناعية
إصابة <input type="checkbox"/>	المؤسسة التي تكفلت بالعين الاصطناعية
غير ذلك <input type="checkbox"/>	كم مدة ارتدائك العين الاصطناعية الحالية

مكان تلقي خدمة العيون الاصطناعية	أقدر المسافة من بيتي الى مكان الخدمة	قصيرة <input type="checkbox"/> متوسطة <input type="checkbox"/> طويلة <input type="checkbox"/> طويلة جداً <input type="checkbox"/>
حكومة <input type="checkbox"/>	هل نحتاج للمساعدة عند تركيبها وإزالتها	لا <input type="checkbox"/> نعم <input type="checkbox"/>
وكالة <input type="checkbox"/>	هل تنظف يديك قبل إزالتها	لا <input type="checkbox"/> نعم <input type="checkbox"/> أحياناً <input type="checkbox"/>
مراكز خاصة <input type="checkbox"/>	كم مرة تقوم بتنظيفها في الأسبوع	كل يوم <input type="checkbox"/> أحياناً <input type="checkbox"/> ولا مرة <input type="checkbox"/>
مؤسسات <input type="checkbox"/>	هل تقوم بإزالتها عند النوم	لا <input type="checkbox"/> نعم <input type="checkbox"/> أحياناً <input type="checkbox"/>
NGOs <input type="checkbox"/>	هل تقوم بتقييمها بالعبادة بشكل دوري	لا <input type="checkbox"/> نعم <input type="checkbox"/> منى <input type="checkbox"/>
غير ذلك <input type="checkbox"/>	هل تعاني من تشوهات بمحجر العين	لا <input type="checkbox"/> نعم <input type="checkbox"/>
	التشوهات مثل:	

المحور الأول: الاستبيان التالي هو لقياس جودة الحياة وفق معايير منظمة الصحة العالمية (WHO)							
ضع علامة X أمام كل بند من البنود التالية والتي تعتبر هي الأكثر ملاءمة لك. إذا كنت غير متأكدا من الإجابة فإن أول اختيار أنت تفكر فيه غالبا ما يكون هو الأقرب للإجابة الصحيحة.							
			سيئة جدا	سيئة	محايد (لا بأس)	جيدة	جيدة جدا
١	كيف نعلم جودة حياتك؟						
٢	ما مدى رضاك عن صحتك؟						
الأسئلة التالية تسأل عن خبرتك وتجربتك لبعض الأمور خلال الأسبوعين الماضيين							
			ليس دائما (مطلقا)	قليلا	درجة متوسطة	كثيرا	كثيرا جدا
٣	هل تشعر أن الألم الجسدي يمنحك من الأعمال التي تريد؟						
٤	هل كنت بحاجة إلى أي علاج طبي للقرام بمالك في حياتك اليومية؟						
٥	إلى أي مدى أنت تستمتع بحياتك؟						
٦	إلى أي مدى تشعر أن حياتك ذات معنى بصورة حقيقية؟						
٧	هل لديك القدرة على التركيز بصورة جيدة؟						
٨	هل تشعر أن حياتك اليومية آمنة بصورة كافية؟						
٩	إلى أي حد تحب البيئة المحيطة بك صحية؟						
الأسئلة التالية تسأل عن قدرتك التامة والكاملة لتكون قادرا على القيام ببعض الأشياء في الأسبوعين الماضيين							
			ليس دائما (مطلقا)	قليلا	متوسطة	غالبا	دائما
١٠	هل لديك ما يكفي من الطاقة لممارسة حياتك اليومية						
١١	هل أنت قادر على قول مظهرك الخارجي						
١٢	هل ما تملكه من المال يحد كثيرا لثانية احتياجك الخاصة						
١٣	هل تتوفر لك المعلومات التي تحتاجها في حياتك اليومية؟						
١٤	هل لديك الفرصة للممارسة الأنشطة الترفيهية						
			ضعيف جدا	ضعيف	محايد	جيد	جيد جدا
١٥	هل لديك القدرة على النزول بسهولة؟						
الأسئلة التالية تسأل عن مدى رضاك على بعض من جوانب حياتك اليومية والخاصة على مدى الأسبوعين الماضيين.							
			غير راضي بشدة	غير راض	محايد	راضي	راضي بشدة
١٦	ما مدى رضاك عن نومك؟						
١٧	ما مدى رضاك عن قدرتك على أداء أنشطة الحياة اليومية؟						
١٨	ما مدى رضاك عن طافتك و قدرتك على أداء عملك؟						
١٩	ما مدى رضاك عن نفسك؟						
٢٠	ما مدى رضاك عن علاقتك الشخصية؟						
٢١	ما مدى رضاك عن حياتك الجنسية أو الزوجية (حاليا للمتزوج _ أو في المستقبل للأعزب)؟						
٢٢	ما مدى رضاك عن الدعم الذي تحصل عليه من أصدقائك؟						
٢٣	ما مدى رضاك عن الظروف الخاصة بأحوالك السكنية؟						
٢٤	ما مدى رضاك عن قدرتك للوصول إلى الخدمات الصحية؟						
٢٥	ما مدى رضاك عن وسائل النقل والمواصلات الخاصة بك؟						
السؤال التالي يشير إلى كيف كانت خبرتك أو شعورك غالبا نحو أشياء معينة في الأسبوعين الماضيين							
			أبدا (ولامة)	نادرا	أحيانا	أحيانا كثيرا	دائما
٢٦	هل تشعر أنك تملك مشاعر سلبية مثل سوء المزاج والبأس والظن والاكئاب؟						

المحور الثاني : الاستبيان التالي هو لقياس رضا المرضى عن خدمة العيون الاصطناعية بقطاع غزة					
الأسئلة التالية هي لقياس مدى رضاك عن الرعاية الطبية التي تتلقاها. أما إذا لم تكن قد تلقت الرعاية الطبية في الأونة الأخيرة، فالإجابة تكون عن كيفية توقعك تجاه الرعاية الطبية التي تتوقع أن تتلقاها إذا كنت بحاجة لها هذا اليوم. نمط الأسئلة التالية هو: هل تتفق أو تختلف مع العبارات التالية؟ (ضع علامة X واحدة فقط في كل سطر)					
غير موافق بشدة	غير موافق	محايد	موافق	موافق بشدة	
					١ مزودي خدمة العيون الاصطناعية هم جيّدون في شرح وتوضيح الأسباب اللازمة لإجراء الفحوصات الطبية
					٢ اعتقد أن مكتب مزودي الخدمة الطبية به كل ما يلزم لتقديم خدمة طبية كاملة
					٣ الخدمة الطبية التي تلقيتها كانت مناسبة وتامة
					٤ أحيانا يسمح لي مزودي الخدمة الطبية بالتساؤل عن صحة التشخيص الطبي المقدم لي
					٥ اشعر وبكل ثقة أنني سأحصل على الخدمة الطبية التي احتاجها دون أن يكون هناك أي عقبة مالية
					٦ عندما أذهب للحصول على خدمة العيون الاصطناعية. أجد أن مقدمي الخدمة الطبية حريصون لفحص كل شي. بهدف تقديم الفحوصات والعلاج اللازم لي
					٧ يجب أن ادفع للخدمة الطبية الممنوحة لي أكثر مما أطيع
					٨ لدي القدرة للوصول بسهولة إلى مزودي خدمة العيون الاصطناعية اللذين احتاجهم
					٩ في المكان الذي أتلقى الخدمة الطبية فيه اشعر أن مرضى العيون الاصطناعية ينتظرون لفترة طويلة من أجل الحصول على الخدمة الطارئة اللازمة لهم
					١٠ مزودي الخدمة الطبية لي يتعاملون معي بصورة عملية ونزيهة تجاهي
					١١ مزودي الخدمة الطبية يقومون بعلاجي بطريقة ودية ولانقة
					١٢ أثناء علاجي وتقديم الخدمة الطبية لي أحيانا يقوم الطاقم الطبي المعالج بتقديمها لي على عجل وبسرعة
					١٣ أحيانا يتجاهل مزودي الخدمة الطبية ما أخبرهم به
					١٤ لدي بعض الشكوك حول قدرة مزودي خدمة العيون الاصطناعية اللذين يتعاملون معي
					١٥ الأطباء عادة ما يقضون الكثير من الوقت معي
					١٦ أجد صعوبة في الحصول على موعد للحصول على الرعاية الطبية على الفور
					١٧ أنا غير راضي عن بعض الأشياء المتعلقة بالخدمة الطبية التي أتلقاها
					١٨ أنا قادر على تلقي الخدمة الطبية اللازمة وقتما أكون بحاجة إليها

هل لديك القدرة للاستغناء عن العين الاصطناعية (في المستقبل لو توفرت) ؟ نعم لا وضع.....

هل يتنبأك شعور بالقلق بفقد العين الاصطناعية أو عدم توفر بديل لها مستقبلا ؟ نعم لا وضع.....

هل تعرضت لتعليقات كلامية أو فعلية بهدف الاستهزاء بك أو النفور منك لكونك مريض عين اصطناعية ؟ نعم لا

وضع.....

هل فقدك لعينك أفقدك الثقة بنفسك أمام الآخرين ؟ نعم لا وضع.....

هل حصولك على عين اصطناعية سيء/ منحك الثقة بنفسك أمام الآخرين ؟ نعم لا

المحور الثالث: الاستبيان التالي هو لقياس أهم المخاوف التي أقلقكنكم قبل وبعد تركيب العين الاصطناعية																														
في الأسئلة التالية يرجى وضع علامة X تحت المربع المناسب لمستوى القلق المعبر لك عن كل بند كنت قد تخوفت منه قبل وبعد تركيب العين الاصطناعية صناعية. علماً أن مقياس ١ = (لا تشعر بالقلق) و المقياس ١٠ = (قلق للغاية). ولا توجد إجابة صحيحة أو خاطئة.																														
كيف كان مستوى القلق والتخوف من المحاور التالية :											عند بداية فقدك للعين ؟ (قبل/بداية ارتدائك للعين الاصطناعية)																			
											خلال الأسابيع الماضية (بعد ارتدائك للعين الاصطناعية)																			
لا اشعر بالقلق					اشعر بالقلق					لا اشعر بالقلق					اشعر بالقلق															
١٠	٩	٨	٧	٦	٥	٤	٣	٢	١	١٠	٩	٨	٧	٦	٥	٤	٣	٢	١	مخاوف خاصة بالعين الاصطناعية										
																				١	الراحة أثناء ارتدائها									
																				٢	بقاء العين الاصطناعية في مكانها وعدم سقوطها									
																				٣	ترسب الغشور على العين الاصطناعية وكثرة التدميع والإفرازات									
																				٤	حركة العين الاصطناعية مع العين السليمة									
																				٥	لون العين الاصطناعية مقارنة بالعين السليمة									
																				٦	شكل الجفن مقارنة بالجفن في العين السليمة									
																				٧	امتلاء محجر العين مقارنة بالعين السليمة									
																				٨	حجم العين الاصطناعية وفتح العين مقارنة بالعين السليمة									
																				٩	الاتجاه البصري للعين الاصطناعية مقارنة بالعين السليمة (الانحراف والحول)									
																				١٠	إفغان إرأثة العين الاصطناعية وتركيبها بالعين									
																				١١	فقدان العين الاصطناعية أو تسرر ها									
																				١٢	التبعية في حجم البؤبؤ في العين الاصطناعية									
																				١٣	التهافت العين الاصطناعية عندما افرك العين									
																					مخاوف أخرى تتعلق بالعين الاصطناعية - أذكرها									
																				١										
																				٢										
																				٣										
																				٤										

ملاحظات اخرى

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كيف كان مستوى القلق والتخوف من المحاور التالية :											عند بداية فقدك للعين ؟ (قبل / بداية ارتدائك للعين الاصطناعية)											خلال الأسابيع الماضية (بعد ارتدائك للعين الصناعية)																					
لا اشعر بالقلق											اشعر بالقلق											لا اشعر بالقلق											اشعر بالقلق										
١	٢	٣	٤	٥	٦	٧	٨	٩	١٠	١	٢	٣	٤	٥	٦	٧	٨	٩	١٠	١	٢	٣	٤	٥	٦	٧	٨	٩	١٠	١	٢	٣	٤	٥	٦	٧	٨	٩	١٠				
مخاوف عامة لا تتعلق بالعين الاصطناعية																																											
١											القدرة على الحكم على المسافات (رؤية ثلاثية الأبعاد)																																
٢											فقدان التوازن أثناء السير والحركة																																
٣											نضال مجال الرؤية																																
٤											التغير في شكل الوجه والمظهر																																
٥											الحصول على نصيحة جيدة نخص بلإلة العين المصنوعة وتركيب عين اصطناعية																																
٦											الألم الناتج عن العملية الجراحية بالعين																																
٧											إحساس بالرؤية الوهمية أو الشبحية جهة العين المستصلحة																																
٨											صحة العين السليمة لأنها أصبحت العين الوحيدة للرؤية																																
٩											المظهر العام في المستقبل نتيجة الشيخوخة																																
١٠											ارتخاء وإبونة الجفن السفلي																																
١١											نظر الناس على العين الاصطناعية																																
١٢											التواصل مع الناس واللذين هم جهة العين المفقودة (الحمياء)																																
١٣											القدرة على كسب لثمة الجفن وسهولة الحصول على عمل أو وظيفة																																
مخاوف عامة أخرى (أذكرها)																																											
١																																											
٢																																											
٣																																											
											<input type="checkbox"/> الحكم على المسافات (رؤية ثلاثية الأبعاد)											<input type="checkbox"/> المظهر الخارجي											<input type="checkbox"/> الضنور والإفرازات والتدميع										

نشكركم على ملء هذا الاستبيان ومساعدتنا على تحديد وفهم أهم القضايا المرتبطة بارتداء العين الاصطناعية .

الرجاء التكملة على ظهر الورقة إذا لزم الأمر

7.3 Annex (3) WHOQOL- short form brief questionnaire.

OPTIONAL MODULE 5: QUALITY OF LIFE

(World Health Organisation Quality of Life-BREF)

FOR STAFF ONLY	UR Number:
	Surname:
	Given name:
	Date of birth:
	(Please fill in if no label available)

<p>PURPOSE OF MODULE To assess the client's perceived quality of life.</p> <p>WHO CAN ADMINISTER THIS MODULE? This module can be self-administered by the client if they have the ability or desire to do so, or can be administered by the clinician.</p>	<p>INTRODUCTION FOR CLIENT "Now I am going to ask you about how you feel about your quality of life, health, or other areas of your life. Please answer all the questions. If you are unsure about which response to give to a question, please choose the one that appears most appropriate. This can often be your first response."</p> <p>INSTRUCTIONS 1. Introduce module to client. 2. Ask all questions and circle responses on the 5-point scale provided. 3. Score module using the scoring guide. 4. Re-administer to monitor progress.</p>
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	VERY POOR	POOR	NEITHER POOR NOR GOOD	GOOD	VERY GOOD
1. How would you rate the quality of your life?	1	2	3	4	5

	VERY DISSATISFIED	DISSATISFIED	NEITHER SATISFIED NOR DISSATISFIED	SATISFIED	VERY SATISFIED
2. How satisfied are you with your health?	1	2	3	4	5

The following questions ask about how much you have experienced certain things in the last two weeks.

	NOT AT ALL	A LITTLE	A MODERATE AMOUNT	VERY MUCH	AN EXTREME AMOUNT
3. To what extent do you feel that physical pain prevents you from doing what you need to do?	1	2	3	4	5
4. How much do you need any medical treatment to function in your daily life?	1	2	3	4	5
5. How much do you enjoy life?	1	2	3	4	5

	NOT AT ALL	A LITTLE	A MODERATE AMOUNT	VERY MUCH	AN EXTREME AMOUNT
6. To what extent do you feel your life to be meaningful?	1	2	3	4	5
7. How well are you able to concentrate?	1	2	3	4	5
8. How safe do you feel in your daily life?	1	2	3	4	5
9. How healthy is your physical environment?	1	2	3	4	5

The following questions ask about **how completely** you experience or were able to do certain things in the last two weeks.

	NOT AT ALL	A LITTLE	MODERATELY	MOSTLY	COMPLETELY
10. Do you have enough energy for everyday life?	1	2	3	4	5
11. Are you able to accept your bodily appearance?	1	2	3	4	5
12. Have you enough money to meet your needs?	1	2	3	4	5
13. How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14. To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

	VERY POOR	POOR	NEITHER POOR NOR GOOD	GOOD	VERY GOOD
15. How well are you able to get around?	1	2	3	4	5

The following questions ask you to say how **good** or **satisfied** you have felt about various aspects of your life over the last two weeks.

	VERY DISSATISFIED	DISSATISFIED	NEITHER SATISFIED NOR DISSATISFIED	SATISFIED	VERY SATISFIED
16. How satisfied are you with your sleep?	1	2	3	4	5
17. How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18. How satisfied are you with your capacity for work?	1	2	3	4	5
19. How satisfied are you with yourself?	1	2	3	4	5
20. How satisfied are you with your personal relationships?	1	2	3	4	5
21. How satisfied are you with your sex life?	1	2	3	4	5
22. How satisfied are you with the support you get from your friends?	1	2	3	4	5
23. How satisfied are you with the conditions of your living place?	1	2	3	4	5
24. How satisfied are you with your access to health services?	1	2	3	4	5
25. How satisfied are you with your transport?	1	2	3	4	5

The following question refers to how often you have felt or experienced certain things in the last two weeks

	NEVER	SELDOM	QUITE OFTEN	VERY OFTEN	ALWAYS
26. How often do you have negative feelings such as blue mood, despair, anxiety, depression?	1	2	3	4	5

7.4 Annex (4) Satisfaction questionnaire.

Short-Form Patient Satisfaction Questionnaire (PSQ-18)

Listed below are some things people say about health care. Please read each one carefully, keeping in mind the health care you are receiving now. (If you have not received care recently, think about what you would expect if you needed care today.) We are interested in your feelings, good and bad, about the health care you have received. The phrase "health care provider" includes physicians, physician assistants and nurse practitioners.

How strongly do you AGREE or DISAGREE with each of the following statements? (Circle One Number on Each Line)

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1. Health care providers are good about explaining the reason for medical tests.	1	2	3	4	5
2. I think my health care provider's office has everything needed to provide complete medical care.	1	2	3	4	5
3. The health care I have been receiving is just about perfect.	1	2	3	4	5
4. Sometimes health care providers make me wonder if their diagnosis is correct.	1	2	3	4	5
5. I feel confident that I can get the health care I need without being set back financially.	1	2	3	4	5
6. When I go for health care, the provider is careful to check everything when treating and examining me.	1	2	3	4	5
7. I have to pay for more of my health care than I can afford.	1	2	3	4	5
8. I have easy access to the medical specialists I need.	1	2	3	4	5
9. Where I get health care, people have to wait too long for emergency treatment.	1	2	3	4	5
10. Health care providers act too businesslike and impersonal toward me.	1	2	3	4	5
11. My health care provider treats me in a very friendly and courteous manner.	1	2	3	4	5
12. Those who provide my health care sometimes hurry too much when they treat me.	1	2	3	4	5
13. Health care providers sometimes ignore what I tell them.	1	2	3	4	5
14. I have some doubts about the ability of the health care providers who treat me.	1	2	3	4	5
15. Health care providers usually spend plenty of time with me.	1	2	3	4	5
16. I find it hard to get an appointment for health care right away.	1	2	3	4	5
17. I am dissatisfied with some things about the health care I receive.	1	2	3	4	5
18. I am able to get health care whenever I need it.	1	2	3	4	5

7.5 Annex (5) concerns of PE Patients- visual analogue scales (VAS)

QUESTIONNAIRE

This anonymous survey is being conducted by Keith Pine under the supervision of the University of Auckland, Dept of Optometry and Vision Science as part of the research work towards a MSc degree.

The survey is being offered to people who are experienced wearers of artificial eyes.

Your help is very much appreciated.

Gender Male Female

Age _____

Occupation (Previous occupation if retired) _____

When was your eye lost? _____ (month / year)

When was your present artificial eye fitted? _____ (month / year)

For each statement below please mark the line with a vertical pen-stroke | or a tick ✓ to indicate your level of concern on a scale from 1 (not concerned) to 10 (very concerned).

There are no right or wrong answers. The first short table is an example.

HOW CONCERNED WERE YOU ABOUT THESE FACTORS.....	WHEN YOU FIRST LOST YOUR EYE?										DURING THE LAST FEW WEEKS?									
	Not concerned					Very concerned					Not concerned					Very concerned				
Example	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
Example concern	----- -----										----- -----									

HOW CONCERNED WERE YOU ABOUT THESE FACTORS.....	WHEN YOU FIRST LOST YOUR EYE?										DURING THE LAST FEW WEEKS?									
	Not concerned					Very concerned					Not concerned					Very concerned				
General concerns	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
Ability to judge distance	-----										-----									
Reduced side vision	-----										-----									
Loss of balance	-----										-----									
Change to your appearance	-----										-----									
Getting good advice	-----										-----									
Pain from the operation	-----										-----									
Phantom sight sensation	-----										-----									
Health of the remaining eye	-----										-----									
Other general concerns (Please name)	-----										-----									
1. -----	-----										-----									
2. -----	-----										-----									
3. -----	-----										-----									

Comments

More questions overleaf

HOW CONCERNED WERE YOU ABOUT THESE ARTIFICIAL EYE FACTORS.....	WHEN YOU FIRST LOST YOUR EYE?										DURING THE LAST FEW WEEKS?									
	Not concerned					Very concerned					Not concerned					Very concerned				
Artificial eye concerns	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
Comfort	-----										-----									
Retention (artificial eye stays in)	-----										-----									
Watring, crusting and discharge	-----										-----									
Movement	-----										-----									
Colour relative to your good eye	-----										-----									
Eyelid contour relative to your good eye	-----										-----									
Fullness of orbit relative to your good eye	-----										-----									
Size relative to your good eye	-----										-----									
Direction of gaze relative to your good eye	-----										-----									
Other artificial eye concerns (name)	-----										-----									
1. -----	-----										-----									
2. -----	-----										-----									
3. -----	-----										-----									

Do you experience watring, crusting and discharge with your artificial eye? Yes No

If yes, how often does the discharge occur?

Which of these factors currently concern you the most about wearing an artificial eye?

Watring, crusting and discharge Appearance Judging distance

Comments:

Please continue on the back if necessary

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE AND HELPING US BETTER UNDERSTAND THE ISSUES ASSOCIATED WITH WEARING ARTIFICIAL EYES.

7.6 Annex (6) Key Manager Interviews Questions.

Name of organization: Name of the manager.....

- **Availability of PE service**

1- Does the organization provide PE service for patients ?

.....
.....
.....
.....

2- Is there all necessary needs to provide PE Service (experienced team - instrument and equipment sufficiency) ?

.....
.....
.....
.....

- **Exploring the current needs**

3- What is the extent can you assess the current needs for PE service?

.....
.....
.....
.....

4- What is the extent can you identify the main reasons that lead to obligatory providing of PE service in Gaza Strip?

.....
.....
.....
.....

- **Limitations / weakness and opportunists for providing of PE service**

5- What are the main obstacles or limitations to provision of PE service in the organizations?

.....
.....
.....
.....


6- What are the current and future plans to provide PE service for patients?

.....
.....
.....
.....

Other additions:

.....
.....
.....

7.7 Annex (7): Public Health at Al-Quds University and Helsinki Committee approval

**المجلس الفلسطيني للبحوث الصحي**
Palestinian Health Research Council

تعزيز النظام الصحي الفلسطيني من خلال مأسسة استخدام المعلومات البحثية في صنع القرار
"Developing the Palestinian health system through institutionalizing the use of information in decision making"

Helsinki Committee
For Ethical Approval

Date: 04/04/2016 **Number: PHRC/HC/104/16**

Name: Sabri M. Hajja **الاسم: صبري حجاج**

We would like to inform you that the committee had discussed the proposal of your study about: **نفيدكم علماً بأن اللجنة قد ناقشت مقترح دراستكم حول:**

Evaluation of the Prosthetic Eye Services-Gaza Governorates

The committee has decided to approve the above mentioned research. Approval number PHRC/HC/104/16 in its meeting on 04/04/2016 **و قد قررت الموافقة على البحث المذكور عاليه بالرقم والتاريخ المذكوران عاليه**

Signature

Member **Member**

Chairman

General Conditions:-

1. Valid for 2 years from the date of approval.
2. It is necessary to notify the committee of any change in the approved study protocol.
3. The committee appreciates receiving a copy of your final research when completed.

Specific Conditions:-

E-Mail: pal.phrc@gmail.com
Gaza - Palestine غزة - فلسطين

04/4/2016



التاريخ: 2016/4/23

حضرة الدكتور ناصر أبو شعبان المحترم
مدير عام تنمية القوى البشرية-وزارة الصحة

تحية طيبة وبعد،،،

الموضوع: تسهيل مهمة الطالب صبري حجاج

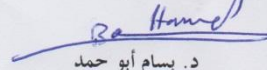
يقوم الطالب المذكور أعلاه بإجراء بحث بعنوان:

Evaluation of the Prosthetic Eye Services in Gaza Strip

كمتطلب للحصول على درجة الماجستير في الصحة العامة -مسار إدارة صحية وعليه نرجو التكرم بالموافقة والايجاز لمن يلزم بتسهيل مهمة الطالب لجمع البيانات الخاصة ببحثه حيث أن العينة المستهدفة هي مرضى العيون الصناعية المتابعين بالمستشفيات الحكومية التابعة لوزارتكم الموقرة.

علماً بأن المعلومات ستكون متوفرة لدى الباحث والجامعة فقط وسنتطلعكم على النتائج في حينها .

و اقبلوا فائق التحية و الاحترام،،،



د. بسام أبو حمد
منسق عام برامج الصحة العامة
فرع غزة



نسخة:

- الملف

7.8 Annex (8): Description of key managers managerial positions and educational level

Manager	Managerial position	Educational degree and certifications
Dr Abed Al Salam Sabah	Hospital General Director	Ophthalmic consultant Jordanian board council of Ophthalmology Palestinian council of Ophthalmology International council of Ophthalmology
DrHusamDawoud	Hospital Medical Director	Ophthalmic consultant Jordanian council of Ophthalmology Palestinian council of Ophthalmology International council of Ophthalmology Fellow of Cornea and refractive surgery
Mohmmad Abu Al kaas	Al Radwan Center Manager	MP in Business management
YousifZiyadHussen	Al Radwan Head Department of Ocularist	Bacalor in Optometry science High Diploma in Prosthetic Eye science

7.9 Annex (9): Arabic abstract

ملخص الدراسة:

ان العين الصناعية لها تأثير ايجابي على جوانب عديدة من حياة المرضى اللذين فقدوا اعينهم؛ ومن هذه النواحي التأثير على الناحية الجسمانية ونشاط الجسم والناحية المالية و النفسية والاجتماعية والبيئية. حيث ان التأثير الايجابي على هذه النواحي يساهم بدرجة كبيرة في تحسين جودة الحياة لمرضى العيون الصناعية ، وقدراتهم الإنتاجية ودمجهم بصورة طبيعية داخل أسرهم ومجتمعاتهم مثل الاشخاص الاخرين الطبيعيين.

الدراسة هي أول دراسة في قطاع غزة و الذي تهدف أساسا إلى تقييم اثر خدمة العيون الاصطناعية على المرضى اللذين فقدوا اعينهم في قطاع غزة كخدمة تأهيلية مجتمعية لمن فقدوا اعينهم خاصة فيما يتعلق بتقييم العوامل الديموغرافية للمرضى ، ورضا مرضى العيون الاصطناعية وجودة الحياة لديهم، وتقييم الحاجة المجتمعية لخدمة العين الاصطناعية , بالإضافة الى تحديد مدى تأثير خدمة العين الاصطناعية على المخاوف وعناصر القلق التي تتعلق بمرضى العيون الصناعية قبل وبعد فقدهم للعين وقبل وبعد تركيبهم للعين الاصطناعية .

هذه الدراسة عبارة عن دراسة مقطعية. حيث شملت الدراسة على بيئتين من عينة الدراسة وهما : البيئة الاولى للجزء الخاص بالدراسة الكمية وشملت جميع مرضى العيون الاصطناعية بقطاع غزة(الفاقد للعين و اللذين يملكون عين صناعية جاهزة او تفصيلية). (حيث كان معدل الاستجابة من قبل المرضى للمشاركة في هذه الدراسة % 87.3). اما بيئة الدراسة الثانية فكانت خاصة بالجزء النوعي حيث كانت مكونة من اربعة مدراء رئيسيين يعملون في القطاع الحكومي والمنظمات الغير حكومية ويقومون بتزويد خدمة العين الاصطناعية في قطاع غزة.

الدراسة الكمية تمت تقييمها من خلال استبيانات محكمة تم توزيعها على مرضى العيون الاصطناعية وتعبئتها من خلال مقابلة شخصية منفردة مع المريض. اما الدراسة النوعية فقد تمت تقييمها من خلال جانبين وهما : مقابلة شخصية فردية مع كل مدير من المدراء الاربعة. بالإضافة الى تقييم وجهة نظر المرضى عن خدمة العيون الاصطناعية من خلال مجموعة من الأسئلة المفتوحة داخل الاستبيان.

اما بما يخص مكان عمل الدراسة فكان هناك مكانين اثنين رئيسيين وهما : مستشفى حكومي – مستشفى النصر للعيون ومركز غير حكومي وهو مركز الرضوان الطبي للعيون الصناعية.

كما وتم تحليل البيانات باستخدام برنامج الاحصاء للعلوم الاجتماعية (SPSS) النسخة رقم 20.

النتائج: فيما يتعلق بجودة الحياة للمرضى العيون الاصطناعية وفقا "لمعايير منظمة الصحة العالمية" كانت كالتالي؛ متوسط مجموع جودة الحياة كاملة لمرضى العيون الاصطناعية 64%38.. اما في المحاور الاربعة المكونة لجودة الحياة فكانت النتائج كالتالي : اعلى قيمة كانت للنشاط البدني 68.69%، ثم يليها العلاقات الاجتماعية 65.8 %، وبعد ذلك كان الحالة البيئية 64.2%. وكانت أدنى قيمة هي للحالة النفسية بمتوسط 58.8%.

اما فيما يتعلق برضا المرضى عن خدمة العيون الاصطناعية فكانت نسبة الرضا الكلية 74.58%. وعند تفصيل محاور الرضا فكانت النسبة كالتالي :حيث كان أعلى محور للرضا هو محور التواصل بين المرضى والطواقم الطبية العاملة في تقديم خدمة العين الاصطناعية حيث كانت نسبة الرضى 87.7%، ثم يليها الرضا العام بنسبة 80.1 %، ثم الرضى عن امكانية الوصول لخدمة العيون الاصطناعية 77.8%. بينما كانت نسبة الرضا عن الجودة التقنية لخدمة العيون الاصطناعية 73.3%. ثم تساوت نسبة الرضا عن القدرة المالية و الوقت الذي يقضيه المريض مع مزودي خدمة العيون الاصطناعية حيث كانت النسبة لهما تساوي 70.6%. وكانت أدنى نسبة رضى هي عن محور العلاقات الشخصية وآداب التعامل بين المرضى ومزودي خدمة العيون الاصطناعية. حيث كانت النسبة 66%.

اما في تقييم محاور القلق والتوتر لمرضى العيون الاصطناعية فأظهرت النتائج انخفاض نسبة القلق والتوتر بعد تركيب العين الاصطناعية من (75.0%) إلى (38.0%)

وفيما يتعلق بالدراسة النوعية . فقد اظهرت الدراسة الحاجة الماسة لخدمة العيون الاصطناعية نتيجة للزيادة المستمرة في إصابات وفقد العين بسبب الحروب والحوادث. كما و أظهرت الدراسة أن المنظمات الغير الحكومية تقدم خدمة العيون الاصطناعية بصورة افضل من القطاع الحكومي وذلك لان القطاع الحكومي يعاني من نقص الموارد اللازمة لتقديم الخدمة بسبب الحصار المستمر على قطاع غزة. وبالإضافة إلى ان مرضى العيون الاصطناعية ابدوا توضيحات وتعليقات تبين مدى تأثير فقد العين على الحالة الزوجية و التعليمية والعملية .حيث بينت النتائج ان هناك حاجة ماسة لتوفير خدمة العيون الاصطناعية في قطاع غزة .

الخلاصة: ان خدمة العيون الاصطناعية بصورة عامة والعيون التفصيلية بصورة خاصة تحسن جودة الحياة للمرضى اللذين فقدوا اعيانهم ويزيد من نسبة الرضا لديهم ويقلل نسبة القلق والمخاوف لديهم والنتيجة عن فقد العين . ان خدمة العيون الاصطناعية تلبي حاجة مجتمعية ماسة , لأنها تعتبر افضل خدمة تأهيلية مجتمعية تلبي احتياجات مرضى العيون الاصطناعية حتى الان.

7.10 Annex (10): Picture for PE types



7.11 Annex (11): Time table and Study activities

Task \ Time	12	1	2	3	4	5	6	7	8	9	10	11
Material Preparation	█	█										
Heliniski Approval			█	█								
MOH Approval				█	█							
Pilot study					█							
Data collection						█	█	█	█	█		
Data entry and coding						█	█	█	█	█		
Data cleaning and analysis											█	
Data interpretation											█	
Research writing												█