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# *(demographic data in heterotropic children)*

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## *Content*

## *Abstract*

***Introduction***: Squint is a misalignment of the eyes in which the visual axes deviates from bifoveal fixation, It can be comitant (non-paralytic) and incomitant (paralytic) .Strabismus is a very common ocular problem found at clinics of optometry and ophthalmology. A child with a squint may stop using the affected eye. This can lead to visual loss called amblyopia, which can become permanent unless treated early in childhood.

***Aim :*** to study the demographical data in patients with squint.

***Methods:*** study design: retrospective study

A retrospective study undertaken using previous medical record data of a group of Iraqi patients with squint including 100 patients.

***Results :*** data was collected from 100 patients , the mean age was (5.2) years old , percentage of age group involve were below 6 years old (73%) other age group (6>-12) was (18%) and (12>-18) was(9%) . The family history was positive for (38%) and negative for (62%). Consanguinity was negative for (72%) and positive (28). The developmental milestone was normal in (84%) and delayed for (16%).

***Conclusion:*** the most frequently affected age group of children were below 6 years old, consanguinity was negative in most cases as some patient not consider the consanguinity from the mother side , family history also was negative in most of cases as some patient denial family history due to social factors , the developmental milestone was normal for most of cases so its show no important relation.

## *Introduction*

Demography is a field of study in which researchers examine the quantifiable statistics of a particular population. Statistics are used to identify subsets of the populations and characterize them at a specific point in time. Common demographics are age, sex, ethnicity, level of education, disabilities, employment, and socio-economic status as well as topic-specific characteristics[(1).]

Squint is a misalignment of the eyes in which the visual axes deviates from bifoveal fixation. It can be comitant (non-paralytic) and incomitant (paralytic). Strabismus is the misalignment of one or both eyes either inward (called esotropia), outward (exotropia), upward (hypertropia), or downward (hypotropia). The condition can be constant or parents may only notice it occasionally; for instance, when their child is tired or looking at something very close up. Graham reported manifest squint in 5.4% cases in UK [(2).]

Strabismus is a very common ocular problem found at clinics of optometry and ophthalmology. In the USA, 3–5% of children are affected with 126,400 new cases occurring each year[(3).]

A child with a squint may stop using the affected eye. This can lead to visual loss called amblyopia, which can become permanent unless treated early in childhood[(4).]

Studies have reported the prevalence of amblyopia to be as high as 50% in children with esotropia and 20% in children with exotropia[5].

Esotropia (manifest convergent squint) may be concomitant or incomitant. In a concomitant esotropia the variability of the angle of deviation is within 5 Δ in different horizontal gaze positions. In an

incomitant deviation the angle differs in various positions of gaze as a result of abnormal innervation or restriction [6].

Exotropia (a common type of strabismus) is the outward deviation of an eye (away from the nose), The deviation or eye turn may occur while fixating (looking at) distance objects, near objects or both. When the eye turns outward at all distances and at all times, it is called constant exotropia . When the eye turns outward only sometimes, it is called intermittent exotropia or alternating exotropia when both eyes turn outward or fail to converge normally[7].

Hypertropia or hypotropia both term refer to misalignment of the optical axes of fixation in which one eye is fixing on the target of interest and the other eye is aimed either above or below the fixation point, vertical deviation are most commonly named by the vertically nonfixing eye . for example a subject's right eye was used to fix on target and left eye was deviated up ward , a left hypertropia would be dignosed. Vertical deviations may be monocular , with the same eye constantly misaligned , or there may be spontaneous alternation between the fixing right or left eye. In the above case , if alteranation was present , the subject would have either a left hypertropia (as described above) or aright hypotropia , present when left eye was used for fixation [8].

Strabismus can also be described by its cause. Three of the twelve cranial nerves (III, IV, VI) are responsible for eye movement can be weak or palsied and cause strabismus. Some examples of this type of strabismus include third nerve (III) palsy and superior oblique (IV) palsy, Special patterns of strabismus can have unique names such as Brown syndrome, and Duane syndrome [(9).]

Children and adults with strabismus often suffer from several psychosocial and emotional consequences. poor self-image, negative social bias, ridicule at school, depression, anger and outrage, increased social anxiety, poor interpersonal relationship, inhibition and poor job opportunities in adults. Its early detection is, therefore, important for both, the restoration of normal ocular alignment and the establishment of binocular single vision preferably at early age [(10).]

In primary care physicians should screen all low risk children. High-risk children (low birth weight, family history of strabismus, ocular motility disorder, or systemic condition with vision threatening ocular manifestation) should referred to an ophthalmologist for screening. Screening should be performed in the neonatal period , at 6 months, and at 3 years (grade A recommendation) as well as at 5 to 6 years (grade B recommendation) . screening examination includes inspection, examining visual acuity, determining pupillary reaction, checking ocular alignment, testing eye movement, and ophthalmoscopy [(11).]

The hirschberg test gives a rough objective estimate of the angle of a manifest strabismus and is especially useful in young or uncooperative patients or when fixation in the deviating eye is poor. It is also useful in excluding pseudostrabismus. A pen torch is shone into the eyes from arm's length and the patient asked to fixate the light. The corneal reflection of the light will be (more or less) centred in the pupil of the fixating eye, but will be decentred in a squinting eye, in the direction opposite to that of the deviation, Cover test to detect a heterotropia. It is helpful to begin the near test using a light to observe the corneal reflections and to assess fixation in the deviating eye. It should then be repeated for near using an accommodative target and for distance **(6).**

The goal of strabismus treatment is to improve eye alignment which allows for the eyes to better work together (binocular vision). Treatment may involve eye glasses, eye exercises, prism, and/ or eye muscle surgery. Problems associated with strabismus (including amblyopia, ptosis, and cataract) are usually treated prior to eye muscle surgery **(9).**

## *Aim*

To study the demographic data in patients with squint .

## *Patient and method*

Study design : retrospective study

A retrospective study undertaken using previous medical record data of a group of Iraqi patients with squint.

Data included ( Age ,Gender ,Family history ,consanguinity , and developmental milestone).

The number of patients was one hundred, the study done in Baghdad, Iraq that start from the first of September 2018 till 25 of February 2019 .

## *Result*

In this study, the medical record of 100 patients were studied . the age of the patients ranged from ( 0.5- 18) years old.

The study shown that 51 out of 100 patient were female (51%) and 49 were male(49%) ,(( as shown in table (1) and figure (1)).

Table (1) gender predilection

| Gender | No. | % |
|---|---|---|
| female | 51 | 51% |
| Male | 49 | 49% |

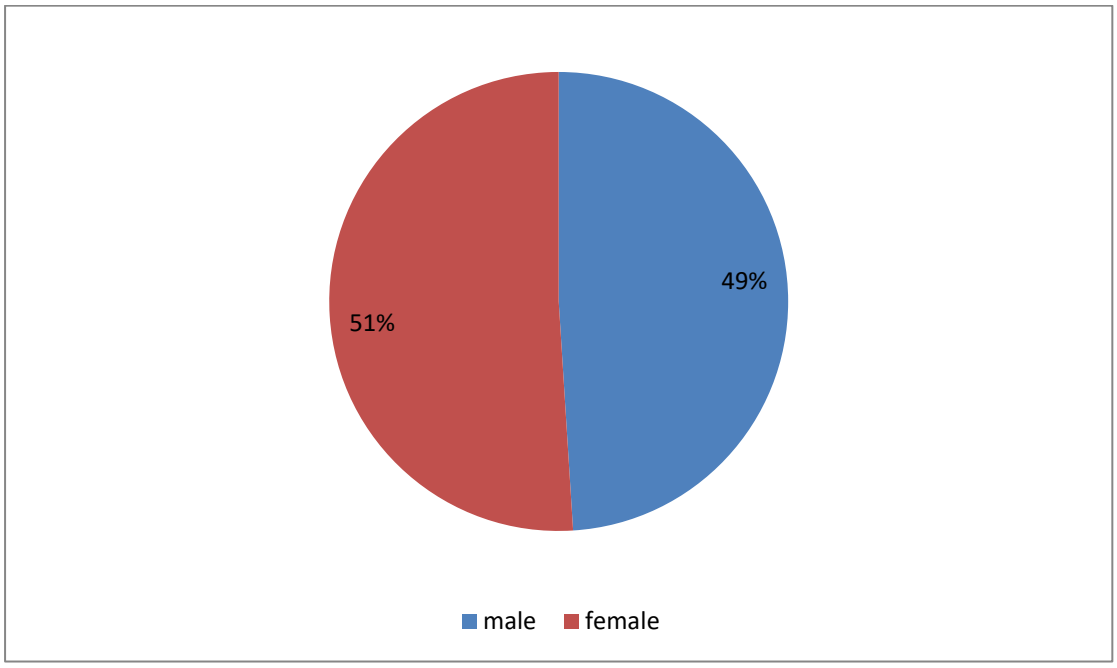



figure (1): gender predilection .

According to age We divided the data into three group, the first age group ranged from (0.5-6) year which involve 73 patients about (73%) and it's the most group affected , the second group (6>-12) years old which involve 18 patients (18%) and the third one from (12>-18) years old have 9 patients (9%)

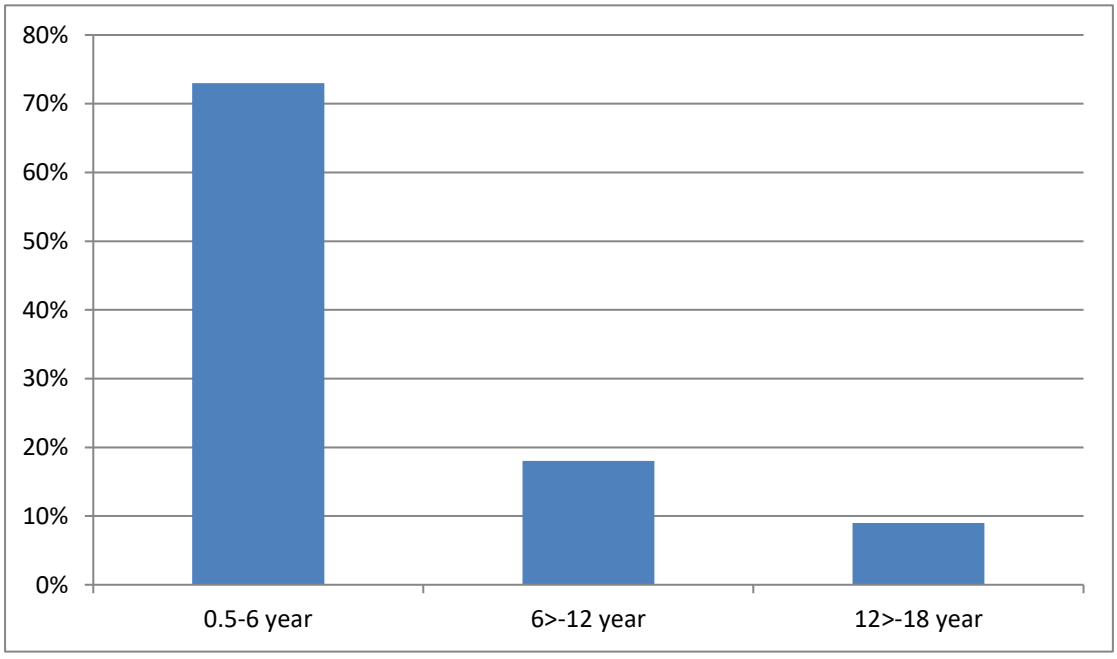
The mean of age was 5.2 years old , (( as shown table (2) & figure (2)).

Table (2) :age group distribution.

| Age group (years) | No . | % |
|---|---|---|
| 0.5-6 | 73 | 73% |
| 6>-12 | 18 | 18% |
| 12>-18 | 9 | 9% |

Total No. (100)

Mean age =5.2 years old



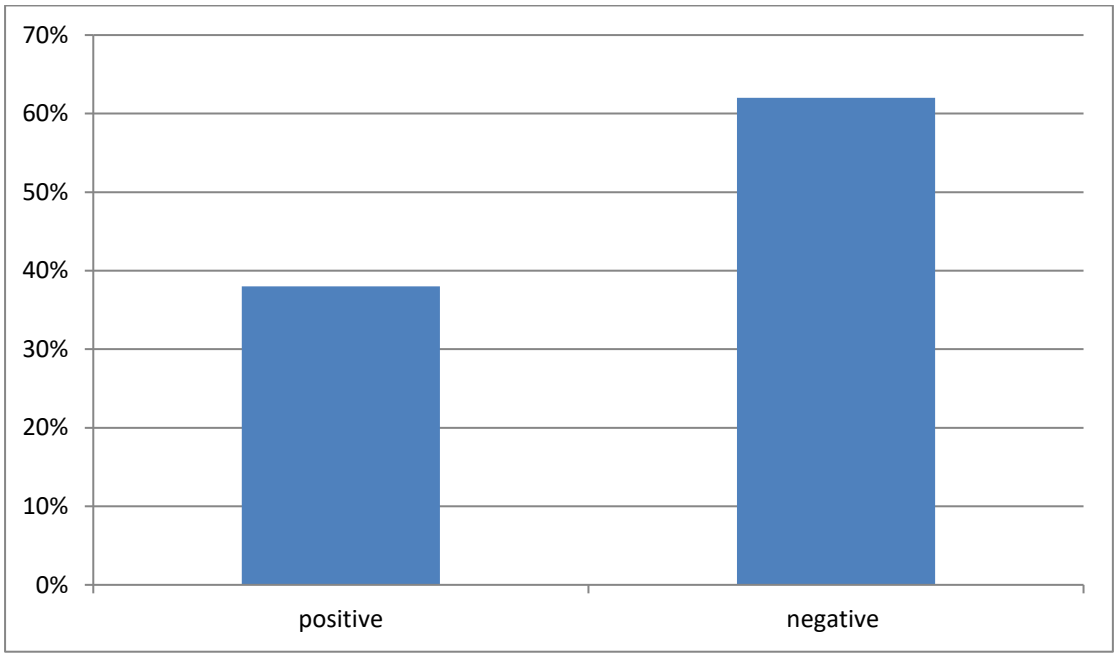

figure(2): shown the age group distribution.

The family history of (100) patients was positive for (38%) patients , and negative for (62%) patients .

((As shown table (3) & figure (3))

Table (3): present of family history .

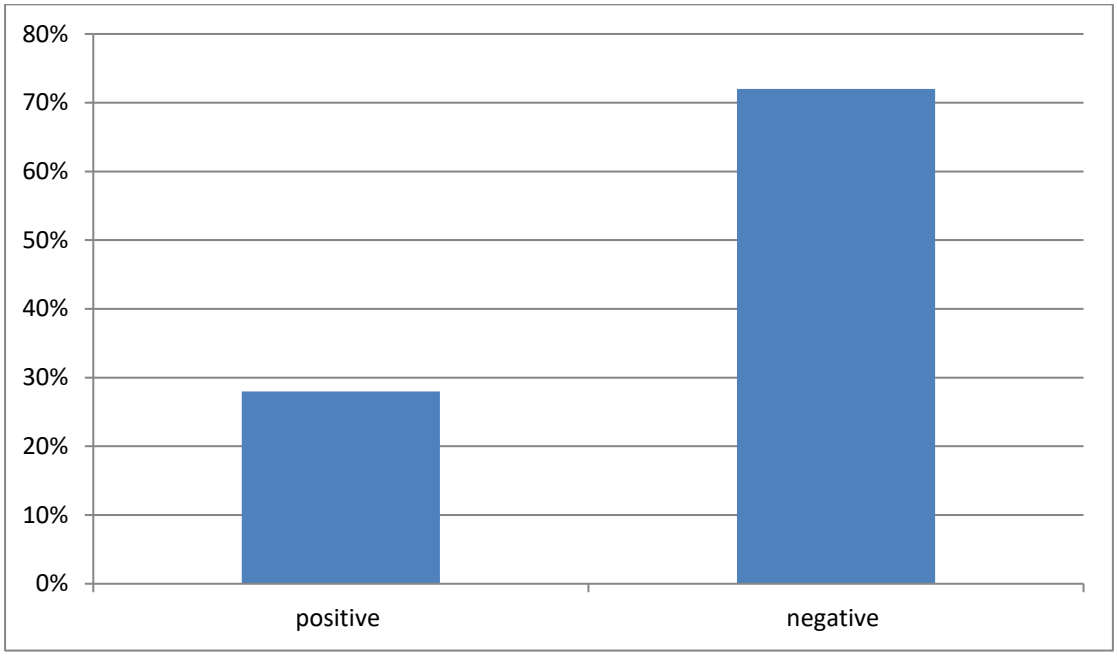
| Family history | NO. | % |
|---|---|---|
| Positive | 38 | 38% |
| Negative | 62 | 62% |




figure(3):show the family history predilection.

The consanguinity was positive for (28) patients (28%) and negative for (72) patients (72%) .

( as shown figure (4)).




figure(4): show the consanguinity percentage.

The last parameter in our study is the developmental millstone which shown that (84%) present with normal developmental millstone ( speaking &walking) and (16%) present with delay either walking or speaking or both,(( as shown table (4)) .

Table (4):developmental milestone .

| Developmental milestone | % |
|---|---|
| Normal | 84% |
| Delay | 16% |

## *Discussion*

In our study we found females and males were almost equally affected which is similar to study by (*Dufier JL* ..et al)[13] , in contrast another study done in Pakistan shown that females are more commonly affected than males by (Chaudhry TA,… et al)***[12]***, and other study by (Alenezi HM,.. et al)***[16]*** , while other study show that males more than females (Kehinde AV,.. et al)[18].

According to age groups divided first group (0.5-6 years) are the most frequantly affected , in contrast to other study shown there was no relation with age by (Alenezi HM,.. et al)***[16]***.

The family history of results was negative for most of cases it may be due to denial of parents , in contras other studies found there is a relation between the family history and the presentation of squint as in (Aurell E,… et al)*[14]*, another study done in Sweden shown family history is risk for developing strabismus among children with parents knowledge of squint by (Abrahamsson M,… et al)*[19]*, also study shown the relation of familial and inheritance of squint (Paul TO, … et al)*[21]*, another extensive twin and family study suggest a significant genetic component to the etiology of strabismus (Michaelides M,.. et al)[22].

consanguinity was negative for most of patients as most patient forget or not consider the consanguinity from the mother side is real one , in contras a study found inheritance has an important role in the etiology of strabismus , Consanguineous marriage is a leading factor (*Bagheri M ,.. et al)* [15] .

also in other study found there was relation with consanguinity between parents by (Alenezi HM ,.. et al) [16].

another study done in Stockholm ,Sweden by ( Ziakas NG,.. et al) [20] , and( Rahman MA .)[23] in which both show there is a relation between squint and consanguinity.

A predictor for developmental milestone delay when baby unable to walk alone by 18 months , and failure to speak recognizable word by 2 years , we find that (16%) of patient have delay in development while the other patient have normal development (84%).

## *Conclusion*

From our study we found that :

**1-** females and males were almost equally affected.

**2-** the most frequently affected age group of children were below 6 years old

**3-** the consanguinity and positive family history were negative for most cases as they denial due to social factors.

**4-** the developmental milestones was normal for 84% of patient which have no important relation.

## *Recommendation*

Since the majority of squint cases were below 6 year so screening of this age group is very important for early detection.

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