

**EPIDEMIOLOGICAL ANALYSIS OF  
THE REFERRALS TO THE CYPRUS  
BREAST CANCER GENETICS CLINIC**



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# THE CYPRUS CANCER GENETICS CLINIC

- Established in 2004
- Offers genetic counselling to families who are considering genetic testing for hereditary /familial breast cancer
- Referrals are mainly by physicians, though there have been some self referrals
- Patients seen retrospectively from the epidemiology study carried out previously

# Referral criteria

## *Single Case in the family of:*

- Breast cancer diagnosed at an age less than 40

or

- Bilateral breast cancer

or

- Male breast cancer

or

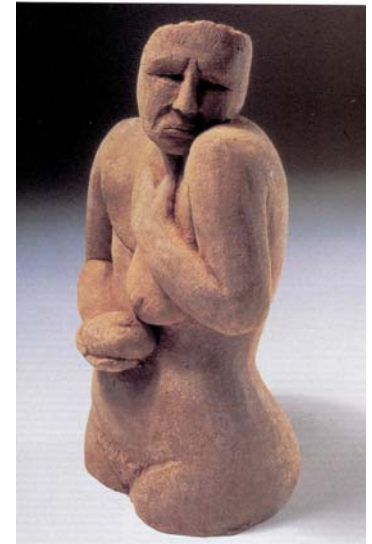
- Both breast and Ovarian cancer

## *Alternatively:*

- Have first degree relatives across more than one generation that have been diagnosed with early onset breast and/or ovarian cancer

or

- Three or more first degree relatives with breast and or ovarian cancer



# Genetic Counseling-definition

Genetic counselling is the process of helping people understand and adapt to the medical, psychological and familial implications of genetic contributions to disease.

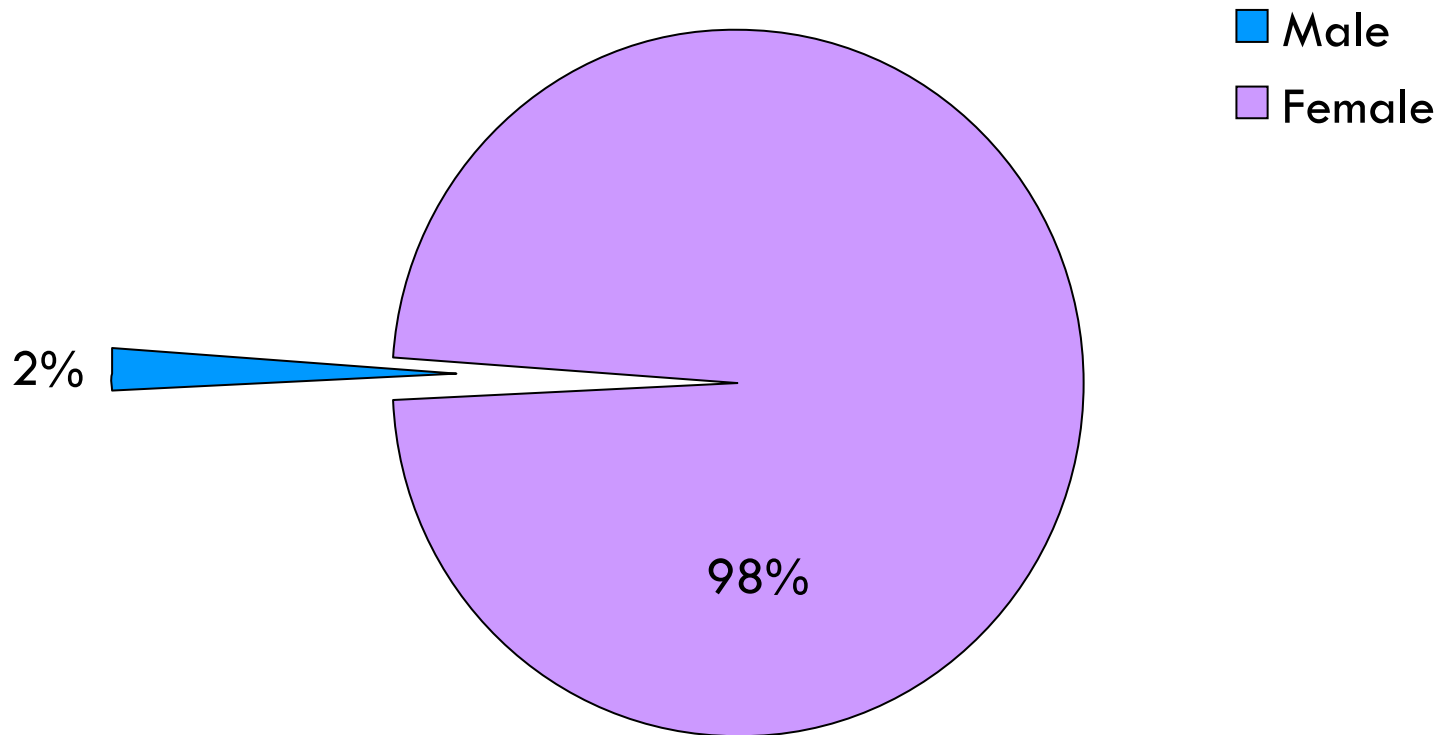
This process integrates the following:

- Interpretation of family and medical histories to assess the chance of disease occurrence or recurrence.
- Education about inheritance, testing, management, prevention, resources and research.
- Counselling to promote informed choices and adaptation to the risk or condition.

# The genetic counseling process

- History-relevant information gathering-biopsies available
- Risk assessment
- Information-education provision
- Psychological assessment and counseling
- Help with decision making
- On-going support of the patient/client

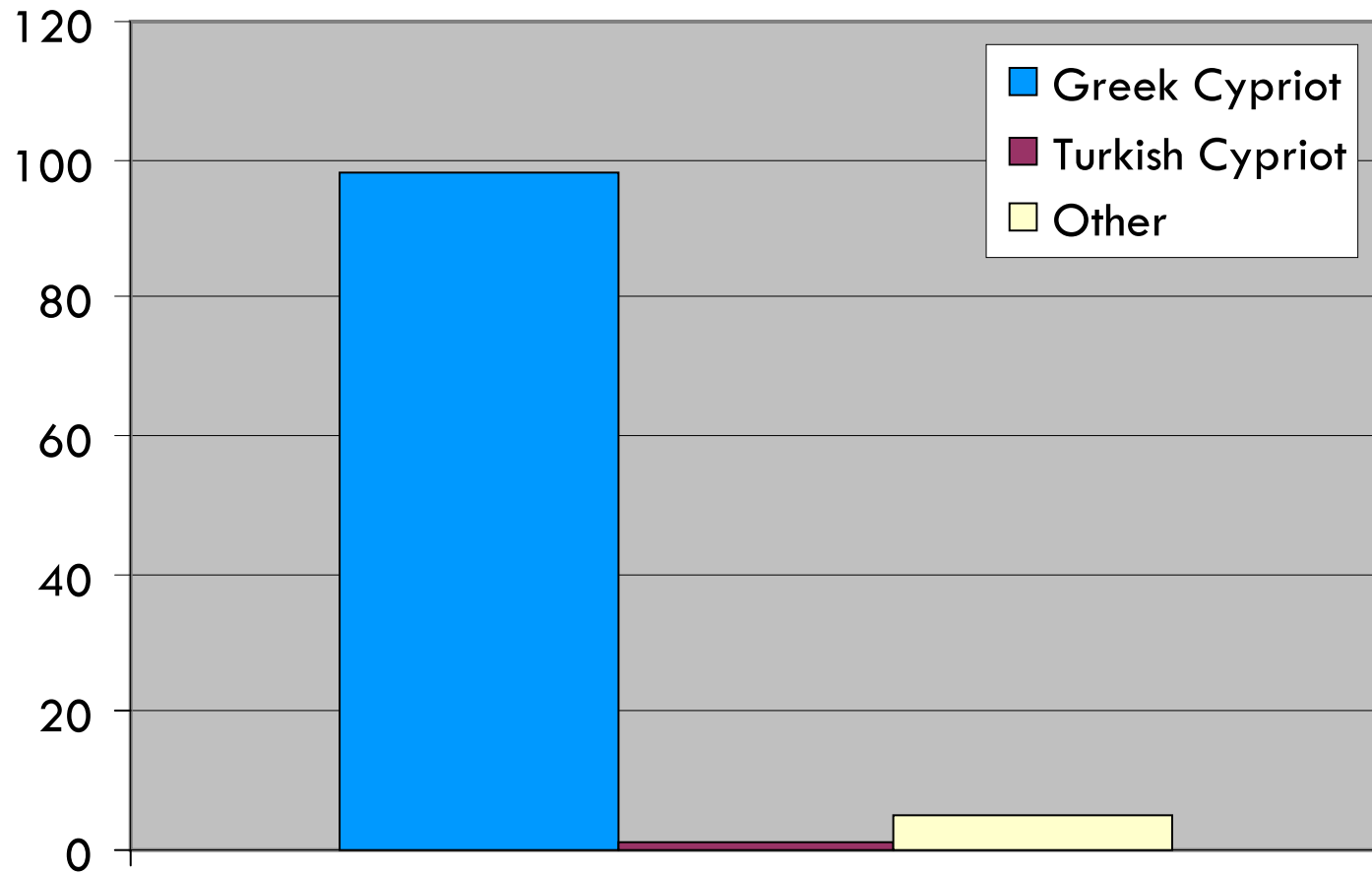
### Male / Female Patients



# Male to Female ratio

- Breast cancer has a frequency of 1 in 10 in females whereas in males it is seen in only 1 per 1000. Therefore the male to female ratio is as expected.

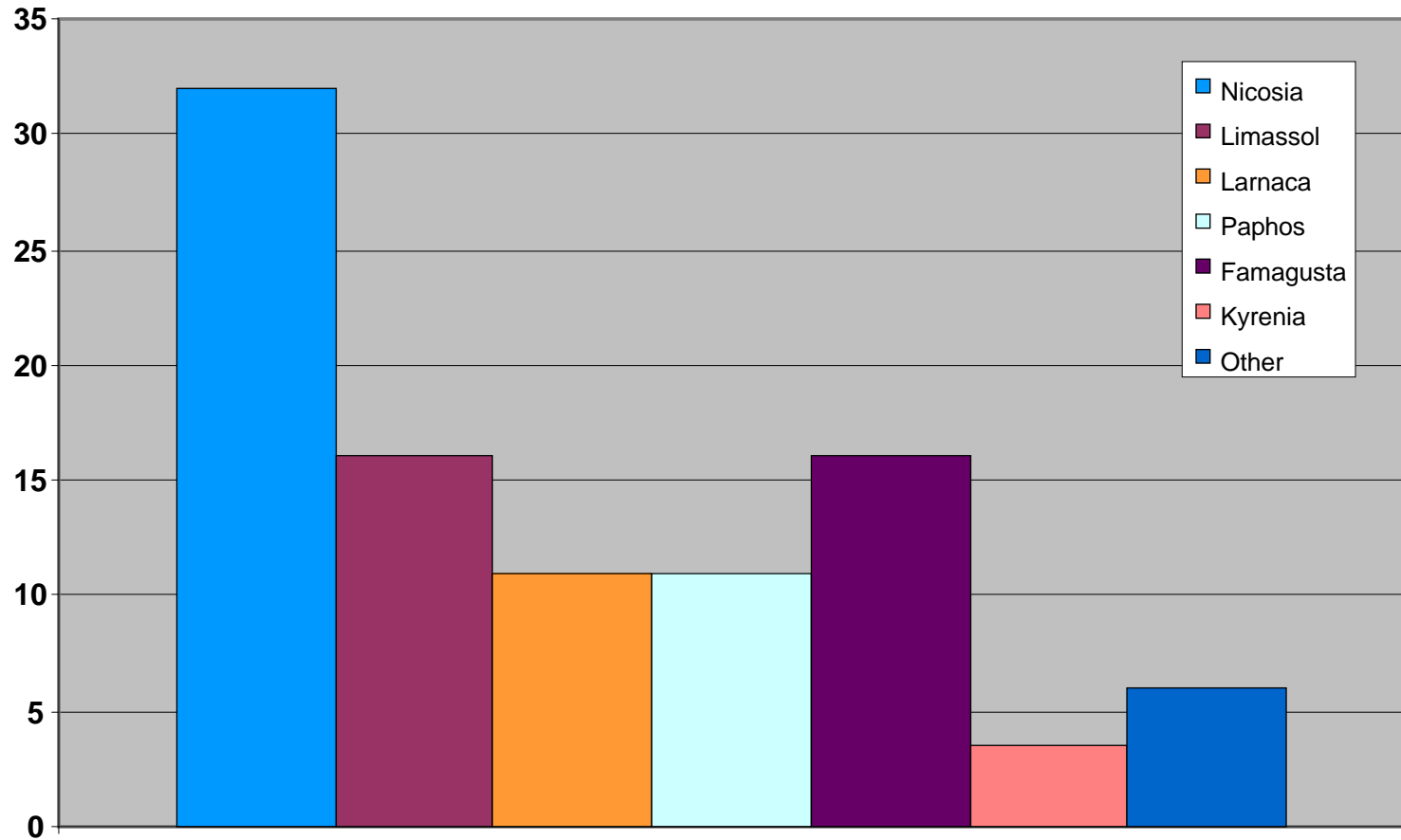
# Ethnicity



# Ethnicity of patients

- The greatest majority of patients are of Greek Cypriot origin. A small percentage (1%) are of Turkish Cypriot origin and approximately 2% are of other ethnic background
- The small number of Turkish Cypriot patients is probably due to the fact that only in recent years have they started to use our services

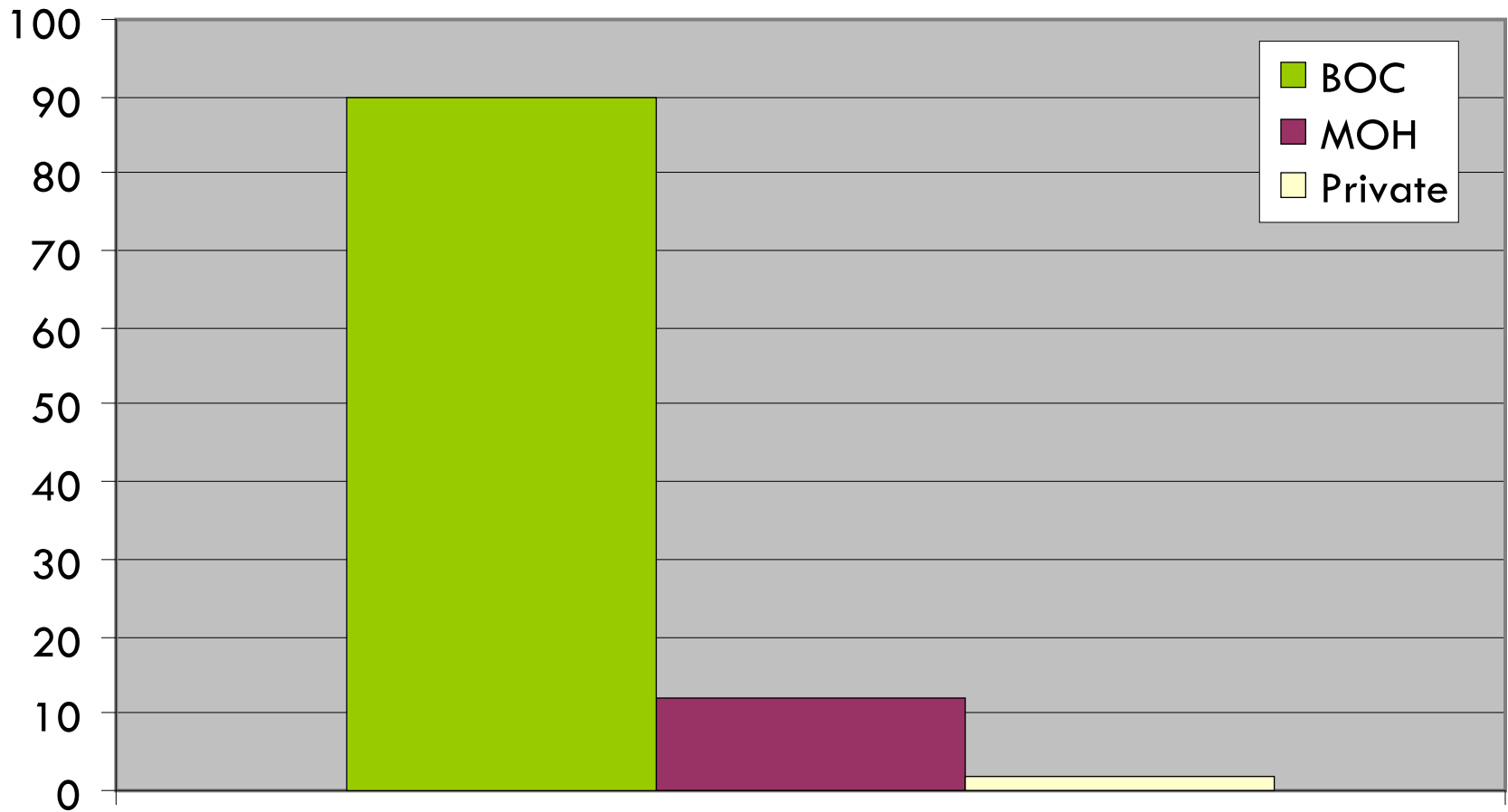
# Place of Birth



# Place of Birth

- No particular trend noticeable.
- The percentage per district is relative to the size of the district.

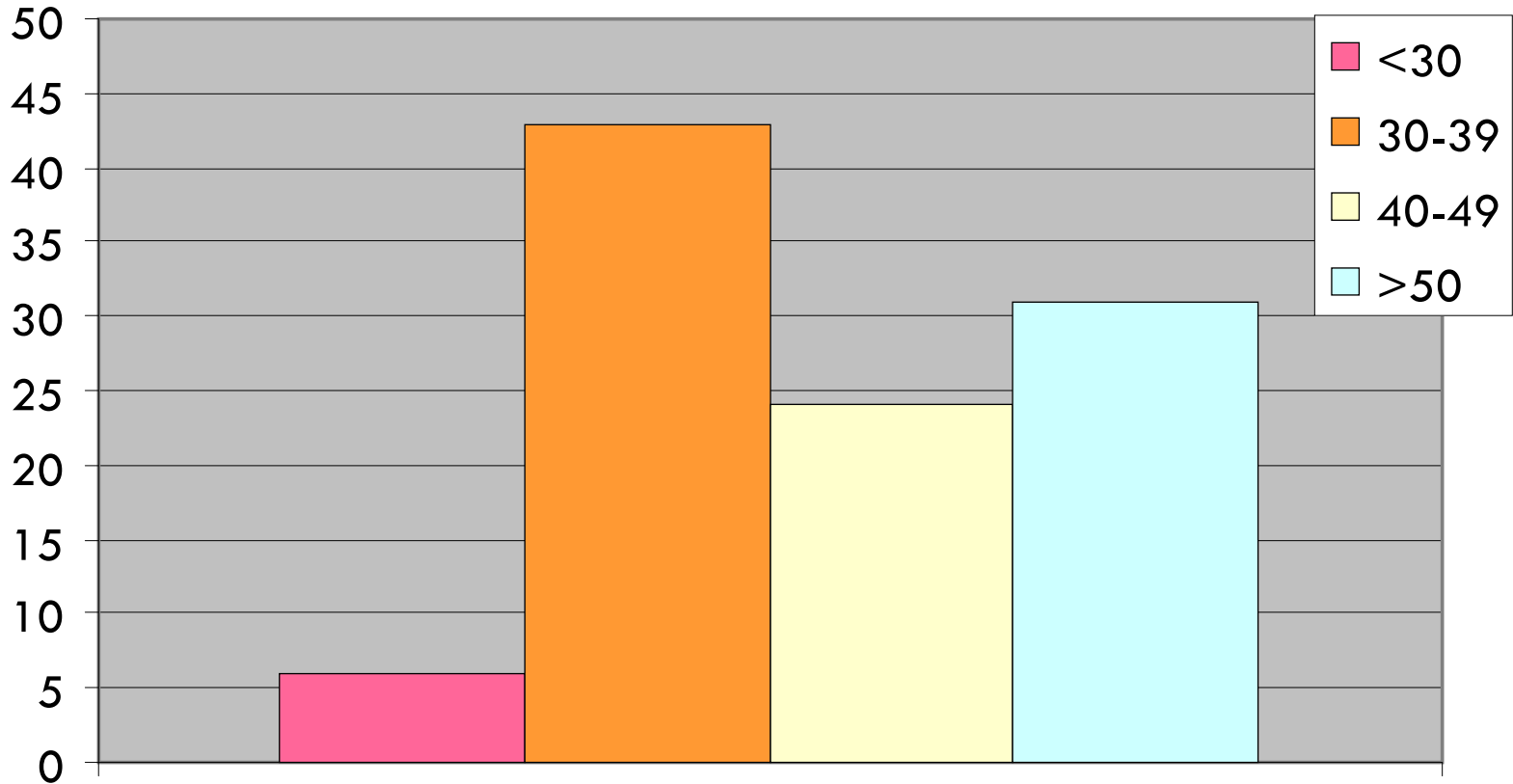
# Referrals



# Distribution of Referrals

- Most referrals are from the Bank of Cyprus Oncology centre
- A smaller number referred from physicians in the public sector. These are not only oncologists, but also gynecologists and geneticist
- Fewer from private sector, again from doctors from different specialties

# Age at Diagnosis



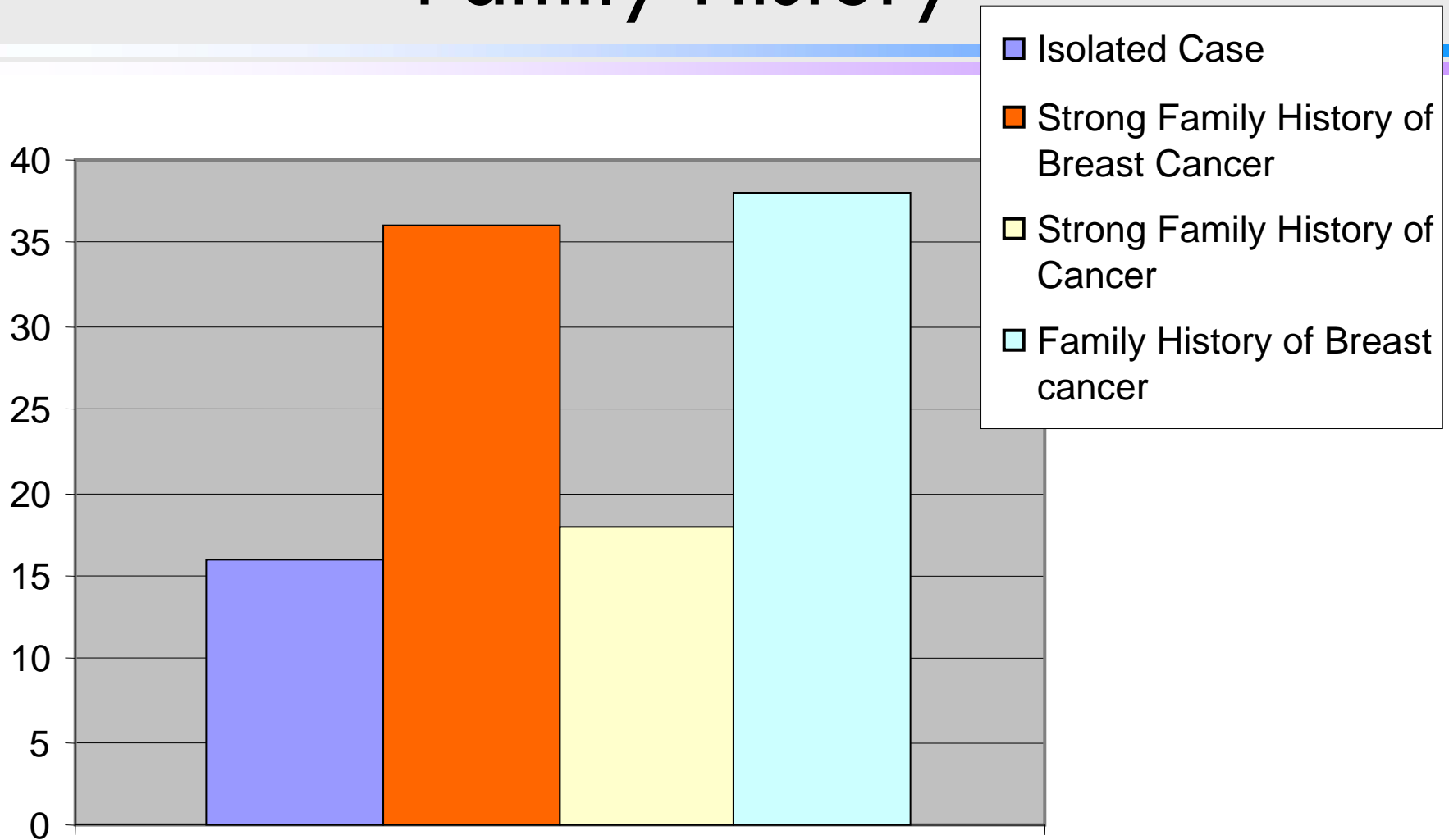
# Distribution of patients based on age of diagnosis

- 5.7% patients <30
- 41.3% patients 30-39
- 23% patients 40-49
- 29.8% patients >50

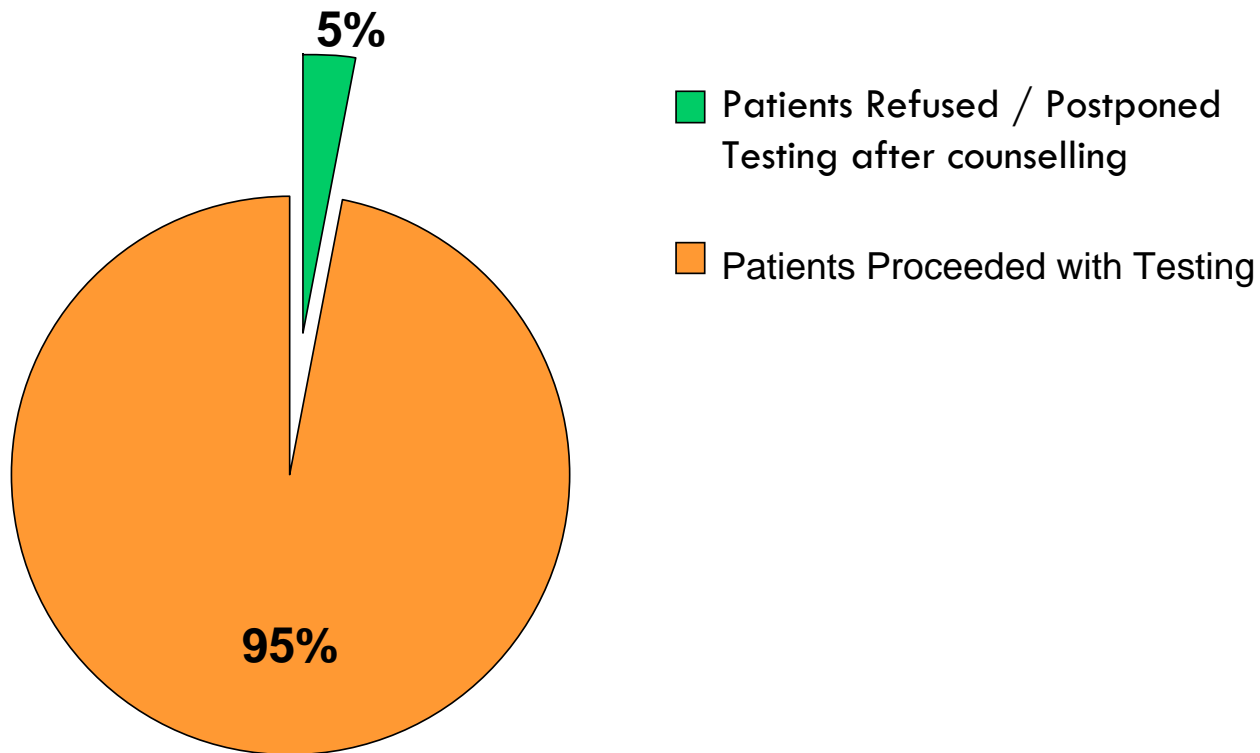
# Distribution of patients based on age of diagnosis

- The majority of isolated cases were in the first two categories
- Most of the individuals in the last category had first degree relatives who were diagnosed early and were deceased.

# Family History



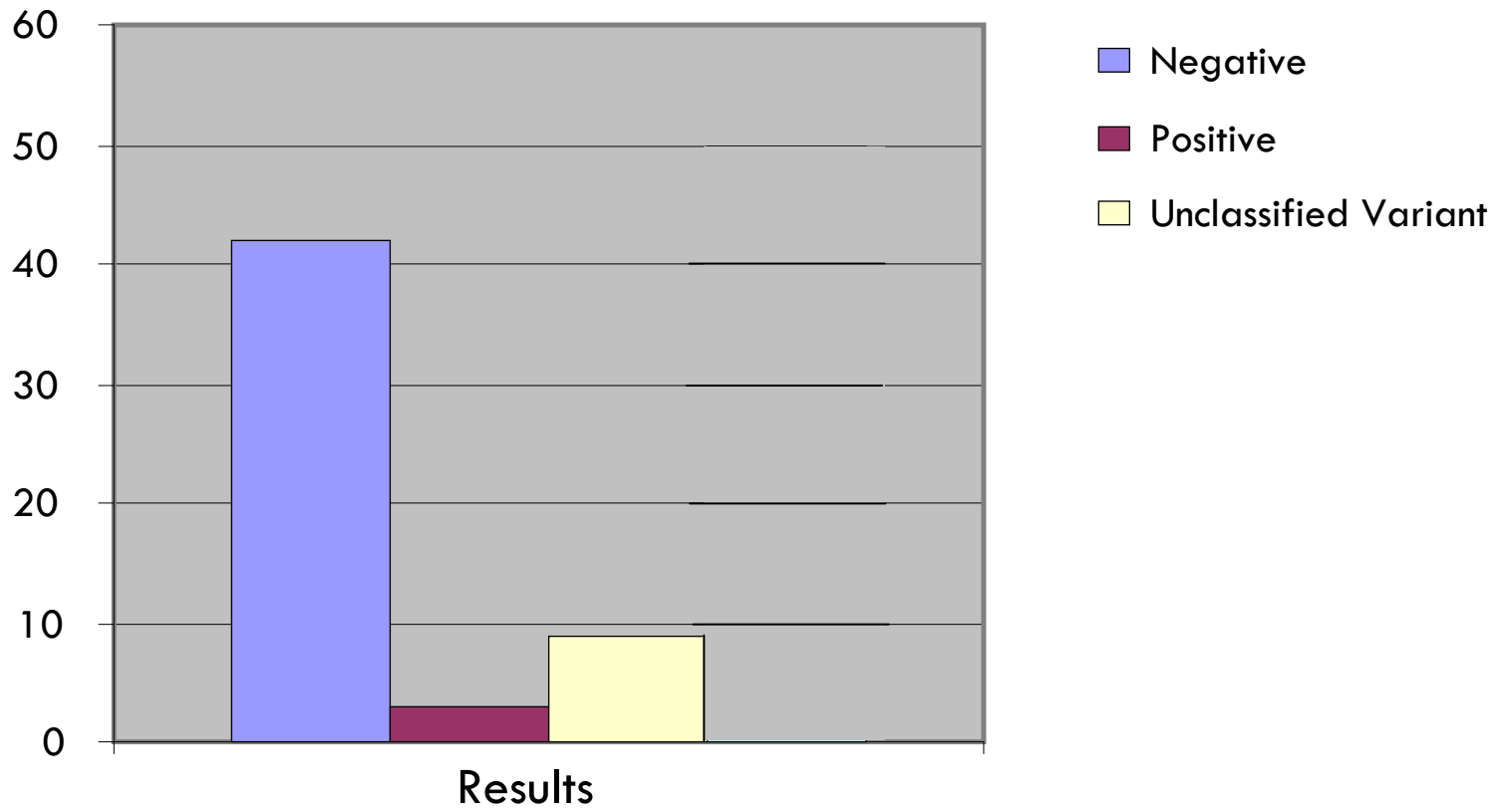
# Pre-Counselling outcome



# Following Pre-Test GC

- 5% patients
  - Refused or postponed testing
  - Of these patients about one half returned for testing following supportive counselling
- 95%
  - Decided to go ahead with testing

# Results



# Negative Result

- The majority of patients were found to be negative.
  - This in most cases was expected.
  - A small percentage of these negative results had a family history suggesting a probability to be positive.
  - A further small number had a family history that was indicative of other cancer genes.

# Positive Result

- The percentage of positive results was again as we would have anticipated.
  - Some had a lower probability of being positive than some of the negatives.
  - Families had difficulties in informing other members, particularly their children, even those in adulthood.

# Unclassified Variants

- The incidents of unclassified variants is no higher than in the bibliography.
  - Higher compliance in informing other family members in order to clarify results.

# Cancer Genetic Counselling

- From the mid 1990's to the mid 2000's, genetic counselling expanded to include discussion of genetic testing for cancer risk, as more genes associated with inherited cancer risk were discovered
- Cancer genetic counselling often involves a multidisciplinary team of health professionals

# Cancer Genetic Counselling

- The process of counselling may require a number of visits to address medical, genetic testing, and psychological issues. Even when cancer risk counselling is initiated by an individual, inherited cancer risk has implications for the entire family.
- Because genetic risk affects biological relatives, contact with these relatives is often essential to collect accurate family and medical histories. Cancer genetic counselling may involve several family members, some of whom will have had cancer and others who have not.

# Our Counselling Approach

- A minimum of two sessions per individual prior to testing.
- Two health professionals in each session. Either a non-MD genetic counsellor or a medical geneticist as well as the molecular geneticist responsible for the testing.
- Results are given by the same individuals with the possibility of the addition of a medical geneticist when the need arises.
- Follow up appointments as required by each case.

# Concluding Comments

- As a whole very little deviation from anticipated percentages
- A slight discrepancy between family history and results
- Poor compliance in positive result sharing, especially to younger family members.
- The presence of two health professionals in each sessions was very important
- The need for follow up is highlighted as it appears the patients in Cyprus have difficulties in sharing this kind of information with their children.

# Thank you

- THE PATIENTS
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