10th Evolving Practice Of Ophthalmology Middle East Conference

EPOMEC

EXPANDING VISION

Retrospective Study on Rapid Glaucoma Screening in a Polyclinic Setup:

ASSESSMENT OF A LARGE COHORT IN A SHORT DURATION

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Introduction

Glaucoma - foremost cause of irreversible blindness worldwide. [1,2]

Progression - prevented or stabilized
when identified early and managed appropriately. [2]

Glaucoma screening can help in detection of the disease early [3]

MC methods[4]

FDT- C-20-1

Ophthalmoscopy

Disc Photography

HFA

OCT

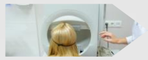
Tonometry

Oculokinetic Perimetry

HRT

But no single test fully meets the criteria of an ideal method.[4]

Challenges



Lack of equipment such as perimeter and tomography in most of the **outpatient clinics**

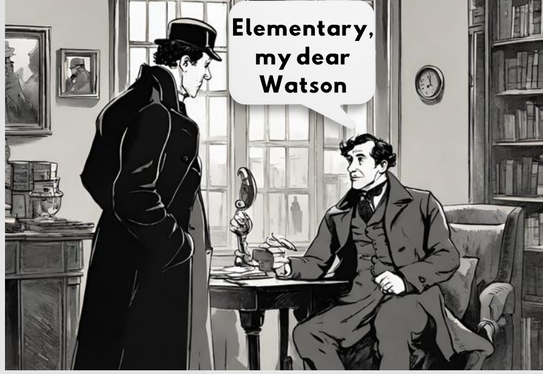
Limited insurance approval for glaucoma screening.

Cost and duration of screenings (mydriasis, field analysis).

Lack of structured screening protocols.

To address these challenges, **a screening method,** alternative to no action, can be adopted to decrease the disease burden

My Research



Retrospective Study - Free Glaucoma Screening

World Glaucoma Week at Apollo Clinic, Dubai

Adapted rapid screening method

Due to high patient turnout in a short timeframe.

Aimed to swiftly and accurately identify

- Disc suspects
- Ocular hypertensives
- Angle closure cases

Methodology

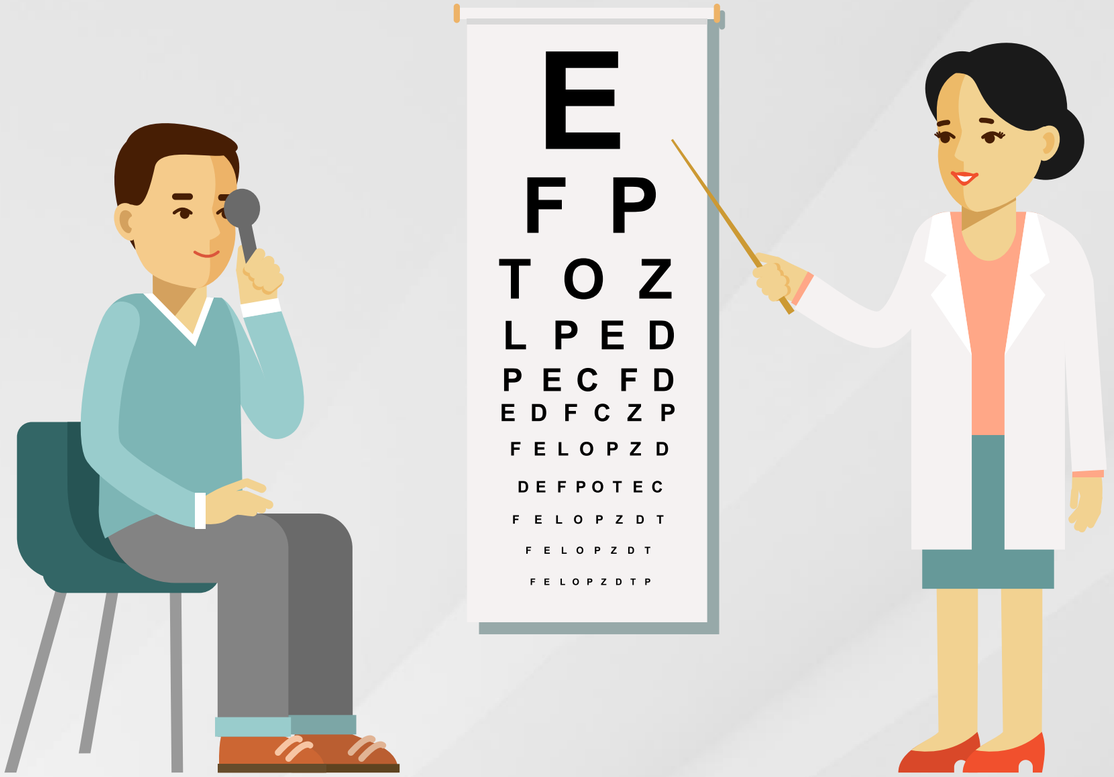
Approval obtained from the Dubai Scientific Research Ethics Committee (DSREC)

Sample

- Total screened – 793 patients
- Excluded –
  - Under 18
  - Infections
  - Previous diagnosis of glaucoma
- **Final Sample – 761 patients**

Screening Protocol

1. Visual Acuity
2. NCT
3. Slit-Lamp
4. Optic disc



Assessment using Snellen's chart with a pinhole

Screening Protocol

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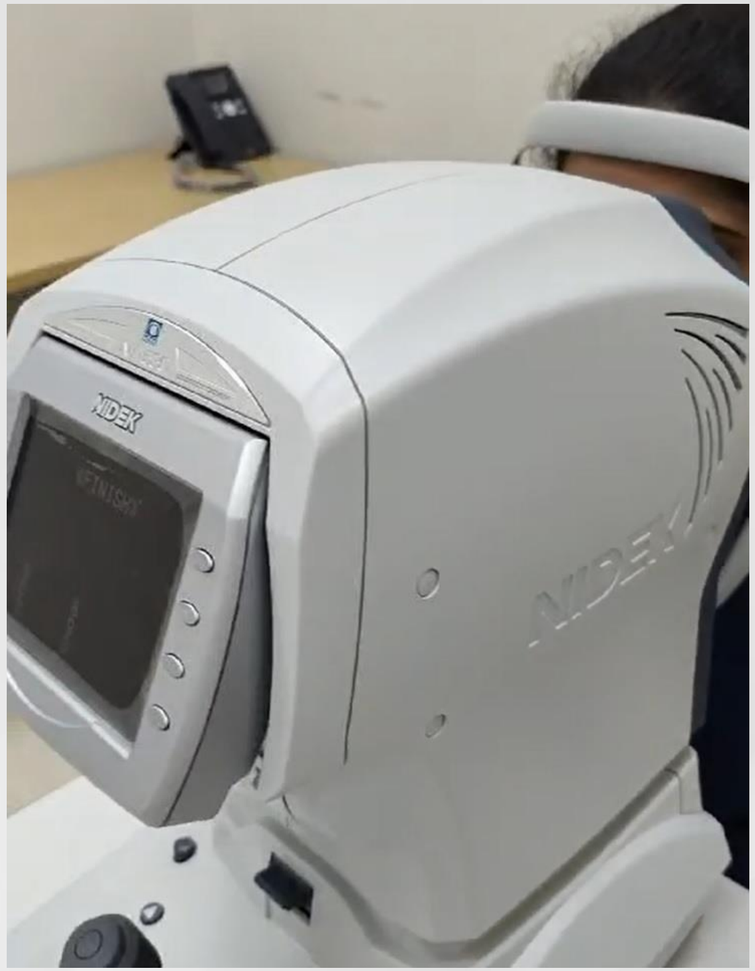


Non-contact tonometry with the Nidek NT 530

NCT

Non-contact tonometry

- It compares favorably with the Goldmann applanation tonometer and serves as a reliable screening tool (Kadu et al., 2018).[5]

- Research indicates that non-ophthalmologists can perform NCT reliably (Niessen et al., 1997; Shields, 1980).[6,7]

Screening Protocol

1. Visual Acuity

2. NCT

3 Slit-Lamp

4. Optic disc

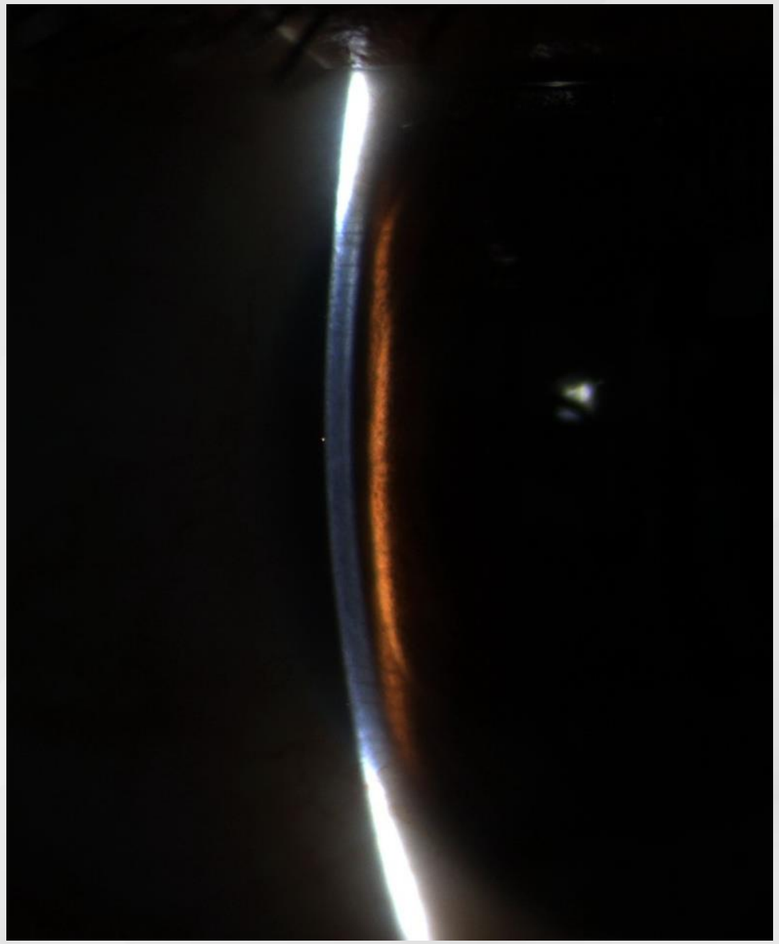
Slit-lamp examination with the Keeler KSL-H. Primarily VH technique

Van Hericks grading

LIMBAL ANTERIOR CHAMBER DEPTH

- Valuable tool, especially in cases of limited access to the most recent technologies (Jindal et al., 2020; Riva et al., 2020). [8,9]

- Provides reasonably accurate angle closure risk assessment and good inter-user reliability. (Friedman et al., 2008)[10]



Screening Protocol

1. Visual Acuity
2. NCT
3. Slit-Lamp

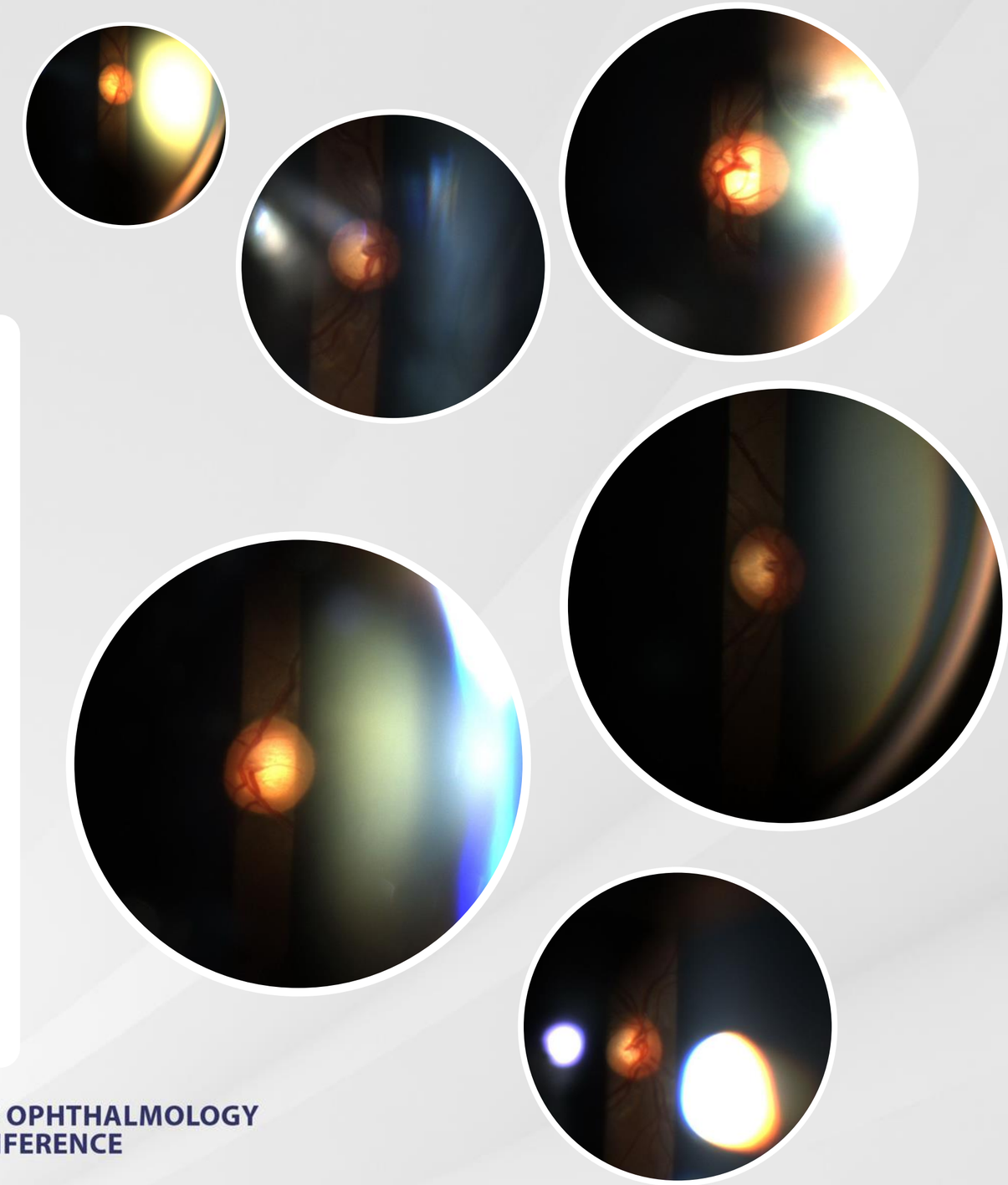
4 Optic disc

Non-mydriatic optic disc evaluation using a 90 D lens

Non- mydriatic Ophthalmoscopy

- If a satisfactory optic disc view can be achieved without dilation, non-mydriatic optic disc evaluation is adequate (O'Brien et al., 2005).[11]

- Moreover, ophthalmoscopy and disc photography have been shown to be superior diagnostic imaging techniques for glaucoma (Spaeth & Reddy, 2014).[12]



Criteria

Disc suspect

- CDR of 0.7 or above
- CDR difference of 0.2 between the eyes
- Any CDR where the vertical cup - larger than the horizontal
- CDR of 0.6 with a disparity of 0.1 between the two eyes

Ocular Hypertension

- IOP >21mmHg, without disc suspect indicators

Shallow AC

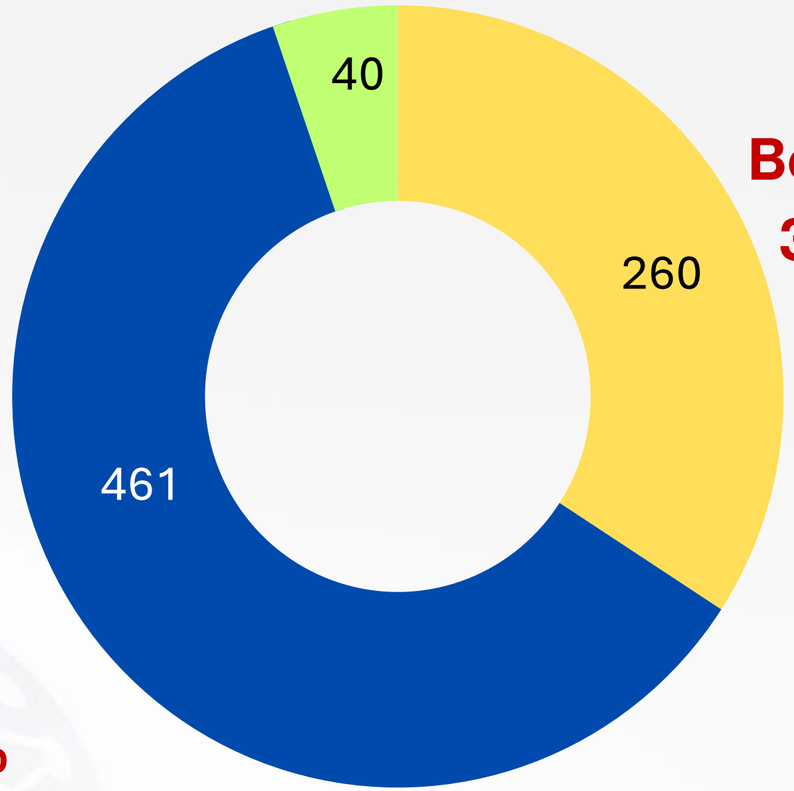
- Van Herrick's grading of 2 or worse

Results

Age

n-761

Above 60
5.3%



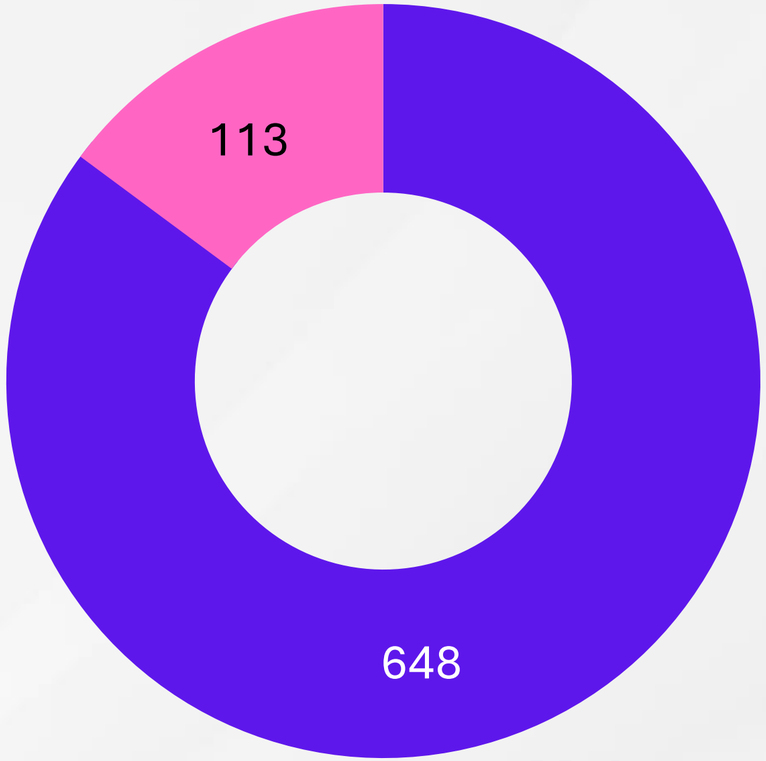
Below 40
34.2%

40-60
60.6%

Gender

n-761

Females
14.9%



Males
85.2%

Health History

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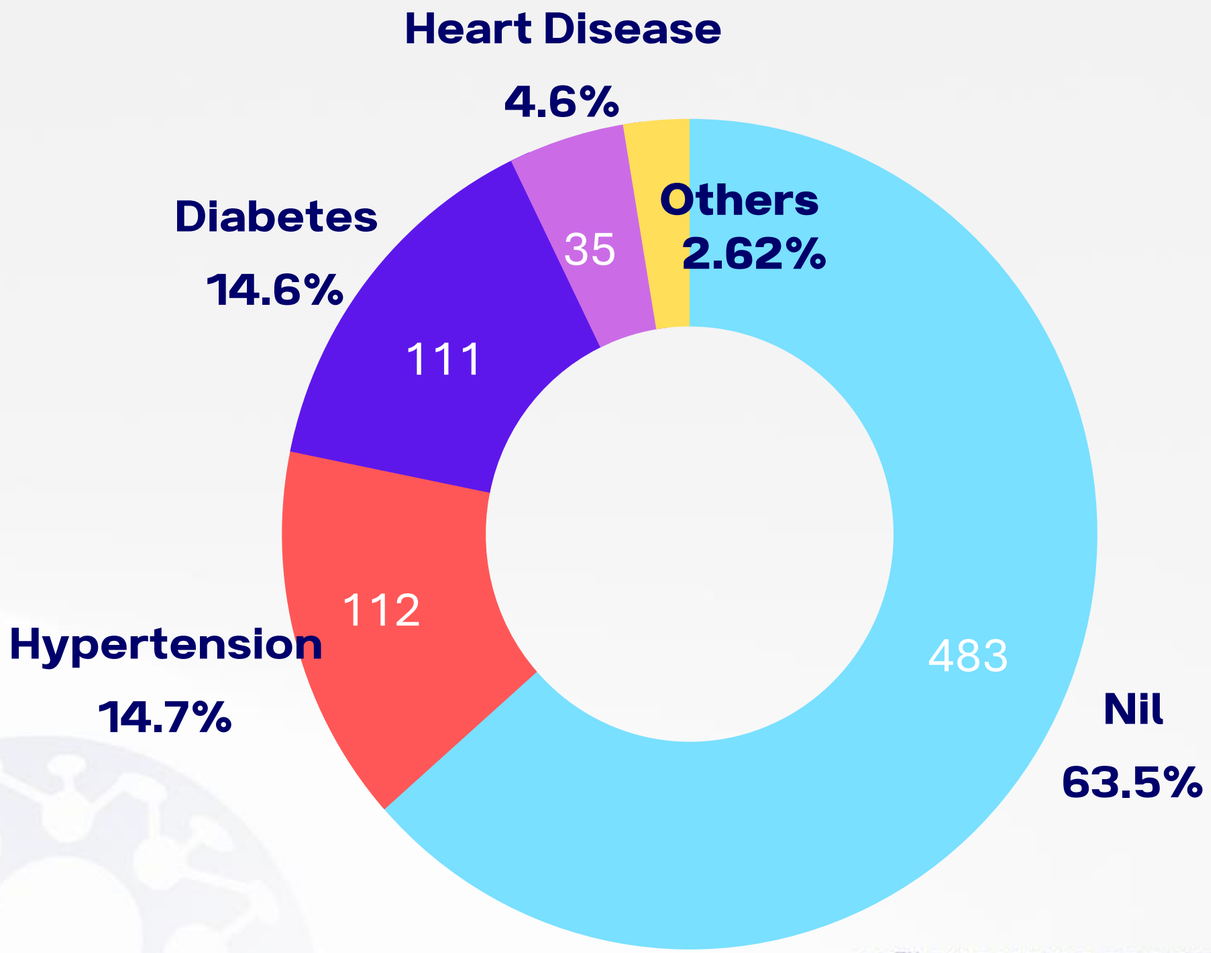

Family History of Glaucoma

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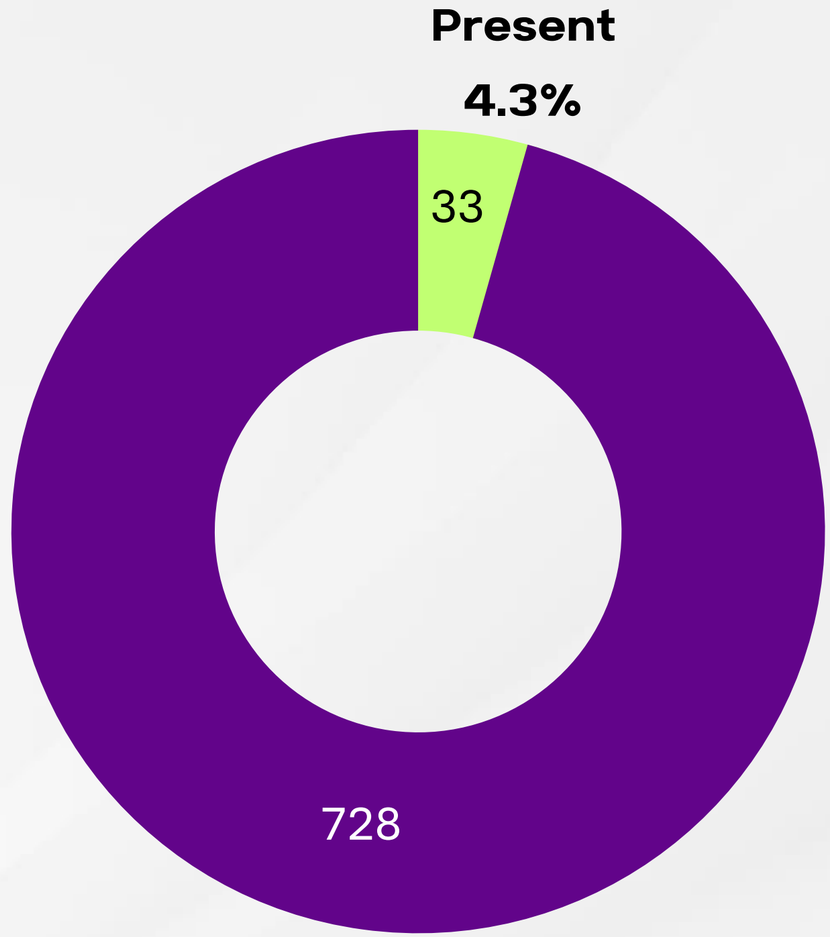
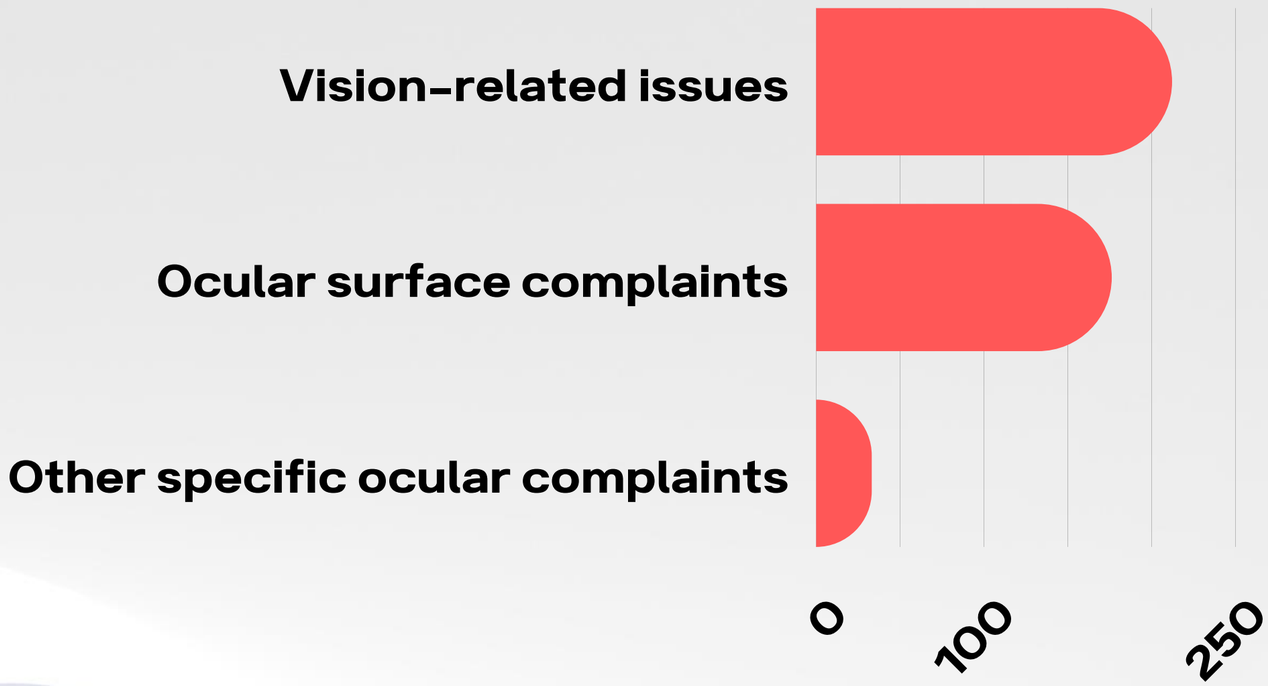


Ocular Complaints

n-724



27.86% (212 patients)

vision-related issues, MC- Refraction

23.13% (176 patients)

ocular surface complaints, MC-dry eye

4.34% (33 patients)

Other specific ocular complaints

Mean

Visual Acuity:
(LogMAR)

OD : 0.05 ± 0.18 (n=761)

OS : 0.04 ± 0.15 (n=761)

Intraocular Pressure (IOP):
(mmHg)

OD : 14.36 ± 2.97 (n=761)

OS : 14.28 ± 3.1 (n=761)

Cup-to-Disc Ratio (CDR):

OD : 0.412 ± 0.126 (n=756)

OS : 0.414 ± 0.128 (n=757)

Screening Results

Glaucoma Screening (147)

- Disc Suspects: 115 (15.11%)
- Ocular Hypertensives: 15 (1.97%)
- Shallow Anterior Chamber: 17 (2.23%)

Other ocular conditions

Dry Eyes: 123

Diabetic Retinopathy (DR) Changes: 23
(20.72% of diabetics)

↓

Diabetic Macular Edema (DME): 5

Early cataract- 31
Cataract: 19

Additional Conditions: CSCR, Coloboma, Macular Scar, CRVO with Macular Edema, Optic Atrophy, Corneal Scar, Myelinated Nerve Fiber, Chalazion, TON, Pterygium

Risk Factors

Disc Suspect

- >60 years (p-0.025)
- Hypertension (p-004)
- Heart disease (p-0.023)
- Family history of glaucoma (p-0.013)
- IOP above 21mmhg (p-0.007)

Ocular Hypertension

- Diabetes (p-0.005)

Follow-up

19 CASES

147 patients ➤ 19 patients

Comprehensive Glaucoma evaluation

9	Primary Open-Angle Glaucoma (POAG)
4	Normal-Tension Glaucoma (NTG)
2	Physiological Cupping
1	Ocular Hypertensive
1	Primary Angle Closure
1	Steroid-Induced Glaucoma
1	Posner-Schlossmann Syndrome

Limitations

The primary limitation -low follow up rate after the free screening

MC reasons

- Cost associated with subsequent investigations.
- Insurance constraints for follow-up visits.
- Tendency to seek evaluations in their home countries
- Defer them to a future date.

Although limited follow-up rates could impact confirming this screening method's efficiency, it is a valuable tool for early glaucoma detection when utilized by a trained ophthalmologist.

Benefits

EARLY DETECTION

Potential for significant early glaucoma detection, thus **reducing the burden of advanced cases** and blindness.

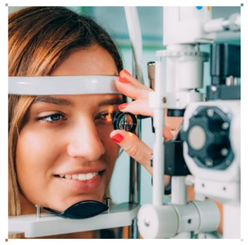
SPEEDY POPULATION ANALYSIS

Can screen a large population in a short time.

BENEFITS FOR HEALTHCARE

Cost-saving implications and improved healthcare efficiency.

Glaucoma Screening Integration



INTEGRATION INTO EVERYDAY PRACTICE:

- Integrate into passive screening regardless of risk factors.

RESOURCE-EFFICIENT SCREENING PROGRAMS:

- Integrate into screening programs with limited resources and time

Conclusion

STUDY INSIGHTS:

The study sheds light on rapid glaucoma screening outcomes, within the context of Dubai's polyclinic setup

KEY FINDINGS:

Risk factors include age (6o+), hypertension, heart disease, diabetes, family history, and elevated IOP.

RAPID SCREENING:

Early detection within a limited timeframe.

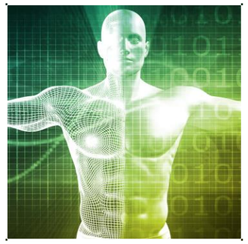
FUTURE PROSPECTS:

Integrating these methods into everyday practice can enhance early detection, potentially reducing overall glaucoma prevalence.

Future Directions

OVERCOMING LIMITATIONS:

- Enhancing follow-up and addressing insurance and cost-related challenges.



ADVANCEMENTS IN RESEARCH:

- Pursuing more effective glaucoma screening methods.
- Refining and validating these approaches.

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