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Abstract:
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Modern Career Concepts: A Review
H.M. Nishanthi

Abstract: The main focus of this article is to explore and critically evaluate the concept practice career orientation (PCO) along with other modern career concepts in focus. Through the literature survey it is found that there are diverse novel career management concepts such as practice, boundaryless, post-corporate, kaleidoscope career and the academic career model which are based on the behaviours of the modern career oriented professionals

Intermediate Communication and Aging
Ioana Cristina Bratescu Muscalu

Abstract: Time spent in front of a computer may constitute a risk for the smoothness of the emotional contact and for the mental flow, especially for the senior-age category of population. In this study, we hypothesized that increases in age, respectively a multitude of worries related to the health condition, in association to a time spent in front of a computer higher than two hours per day, will determine a decrease in the feeling of success. We collected data via Internet and on paper-based format, through a back-translated measure. The examination of the hypotheses of study was in a multi-cultural sample of N = 261 participants, almost equally-sized by gender, having calculated cumulative...
frequency equal to 5.9 for the age of 35, 60, 63, 64 years old. The results obtained from conducting TWO-WAY ANOVA proved entire support of the hypotheses of this study. We discuss the limitations and the implications of these results for the development and maintenance of a healthy life-expectancy within various populations.

Assessment of Larvicidal Activity of Hyptis suaveolens and Balanites aegyptiaca Leaves and Root Extracts against Mosquito Species
A. A. Bobbo, M.S. Pukuma, M.A.Qadeer

Abstract: The Continuous use of synthetic insecticides and its toxicity problem together with the growing incidence of insect resistance has called the need for novel insecticide. Plant extracts may be alternative sources that constitute a rich source of bioactive compounds that are biodegradable and environmentally friendly. Therefore, the present research is aimed at assessing the larvicidal activity of Hyptis suaveolens and Balanites aegyptiaca acetone leaf and root extracts against mosquitoes larvae. World Health Organisation protocol was adopted for the larvicidal bioassay.

Hydrologic and sediment parameters affecting the distribution of the Venerid clam, Paphia malabarica in two estuaries
Ampilli, M and Shiny Sreedhar, K

Abstract: An estuary is a unique area prefer exhibiting environmental and biological gradients. The estuarine species prefer an optimum niche along this gradient. The environmental parameters have relative influence on species diversity, biomass and population density of macrobenthos. We analysed the density and distribution of the edible clam, Paphia malabarica in the two tropical estuaries (Ashtamudi estuary, a deep lake and Kayamkulam estuary, a shallow lake in the south-west coast of India) in relation to the varying environmental factors for two years. The observations clearly indicated the existence of significant relationship between the biological and environmental variables. The density and distribution of the clam illustrated spatio-temporal variations in relation to the changing hydrologic and sediment parameters. Peak clam density values were obtained in the premonsoon followed by postmonsoon and least in the monsoon. The lower reaches were denser than the upper reaches of the estuary. The results of the study revealed that the density and distribution of the clam Paphia malabarica in the two estuaries were predominantly influenced by the environmental parameters such as salinity, organic carbon, sediment pH and sand fraction of sediment. The density and distribution of the clam was found decreasing in a decreasing gradient of these factors.

Retinal Nerve Fiber Layer Thickness and Optic Nerve Head Parameters in Open Angle Glaucoma With Diabetes Mellitus Type 2
Masitha Dewi Sari, Soraya Fasya, Aslim D Sihatang

Abstract: Background: Glaucoma is the second leading caused of blindness in the world. Diabetes Mellitus is an independent risk factor in open angle glaucoma. Among those who have suffered DM will have impact on vascular autoregulation disturbance that small vessel involvement may cause the retina and optic nerve become more susceptible to pressure related damage.
A Comparison of Chebyshev polynomials and Legendre polynomials in order to solving Fredholm integral equations
Iman Malmir

Abstract: In this research we use the numerical solution method that is based on Chebyshev polynomials and Legendre polynomials, to solve non-singular integral equation, it is known as Fredholm integral equation of the second kind. We use these expansions because of their convergence and recurrence properties. Also both of them can be represented as trigonometric function on [1, -1]. First, we expand the unknown function in the integral equation based on the related formulas, then develop kernel of integral equation. To find these, we should try to find a function which can be represented as the solution of linear differential equations. Then substitution into the integral equation, we find the coefficients of the function. At the end of research the method will be illustrated by the mean of an example.

Energy Stress of Metal Oxide Surge Arrester in GIS Substation Due to Shielding Failure
M. S. El-Bages, M. A. Abd-Allah, T. Elyan and Amira .G .Navar

Abstract: High voltage metal oxide surge arresters (MOSA) are stressed by overvoltages generated in a power system. The selection of standard methods for the energy absorption capability of high voltage MOSA is based on the discharge energy estimation. This paper discusses the energy stresses of metal oxide surge arrester due to shielding failure. The energy stresses are calculated for arresters located inside 220/66/11 kV Wadi-Hoff gas insulated substation in the Egyptian network. A lightning stroke with different magnitudes is applied at different points along the line connected between Wadi-Hoff substation and Tebbin-power stations and the energy stress in each case is discussed. The effects of incoming and outgoing feeders types on FTO magnitudes and energy stresses are presented and discussed.

Analysis of Secondary School Furniture’s based on Ergonomic Considerations
Rizwan M. Farooqui, Dr. R.B. Shahu

Abstract: School furniture is an essential element in the education process. Children remain seated at school for a considerable amount of time. Student’s sitting posture is influenced by the activities performed in the classroom. Most of the furniture in school does not follow ideal sitting posture. Improper classroom furniture’s affect performance at school and contribute to the appearance of musculoskeletal problems among students. Due to this proper ergonomic design of school furniture is very important. In this paper, the existing compatibility of school furniture’s is being studied to the anthropometric requirements of students.

Influence of Farm yard Manures and Saw Dust Mixture on the Growth and Yield of Okra (Abelmoschus esculentus (L.) Moench)

Abstract: A ten (10) weeks polyethylene sack experiment was conducted at
National Biotechnology Development Agency, South West BIODEC Zonal Centre Owode Yewa South, Ogun state, Nigeria between November 2014 and January 2015 to evaluate the effect of chicken (layer) manure (CLM), cow dungs (CD) and saw dust (SD) mixture on the growth and yield of okra (Abelmoscus esculentus) in a Completely Randomized Design (CRD) replicated three times. The experiment consisted of three treatments including the control, viz; T1 (50g CLM + 30g (CD) +20g (SD), T2 (30g (CLM) + 50g (CD) +20g (SD) and T3 (no application as control). Parameters measured included plant height, number of leaves, number of fruits, weight of pod, number of branches, stem girt per plant. Data collected were subjected to a one-way analysis of variance. F-protected Fisher's Least Significant Difference was used to separate the significant mean at Spercent level of confidence. From the results obtained, there was a significant (P<0.05) difference in the treatment effect on the number of leaves but no significant (P>0.05) difference was computed in all other parameters measured. Application of 30g (CLM) + 50g (CD) +20g (SD) mixture resulted in the highest okra growth and yield parameters among the treatment mixtures and could be demonstrated and disseminated by change agents for adoption by farmers in the study area to improve their okra yields.

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**TEF Epilachna, Chnootriba Similis, Thunberg; (Coleopteran:Coccinellidae) Recently Discovered Insect Pest of Maize (Zea Mays) in Arusha Region, Northern Tanzania**

Maneno Chidege, Anna Baltazari, Secilia Mrosso and Ragaswamy Muniappan

**Abstract:** Proper identification of a pest (being it an invasive or native in an area) is a cornerstone to sustainable pest management. Of recent (July to December 2015) we identified a phytophagus species of coccinellidae feeding on lower epidermis and the mesophyll cells in maize leaves, leaving the upper epidermis and the veins intact. In the survey, three maize fields of approximately an acre were selected based on the presence of the insect pest; In a cross-section pattern 100 plants were examined for the presence of the pest and signs of plant damages by the insect pest. Data on insects counts (larva, pupa and adult) were recorded right in the field, plant damages were scored as a percent of damaged against undamaged plants. 50 Adults were collected to TPRI- Insect collection reference centre for identification. Data on insect counts and damage scores were analyzed using Genstat software. The identification results showed that, the pest was Tef Epilachna or Tef Ladybird Beetle, Chnootriba similis,Thunberg; (Coleopteran:Coccinellidae), formally Epilachna similis, Thunberg; (Coleopteran:Coccinellidae). The mean percent plant damages in all the three fields were scored to field I = 37%, field II = 41% and field III = 34%. The highest mean insect counts obtained in every 100 plants were larva=512, pupa= 308 and adult= 702. This information therefore serves as a first record of the presence of the pest in the area against maize (Zea mays. l).

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**Genomic Studies in Bacteria, Mitochondria and Chloroplast in Relation with Endo-Symbiotic Theory**

Waseemuddin MD

**Abstract:** Symbiogenesis, or endosymbiotic theory, is an evolutionary theory that explains the origin of eukaryotic cells from prokaryotes. It states that several key organelles of eukaryotes originated as a symbiosis between separate single-celled organisms. According to this theory, mitochondria, plastids (for example chloroplasts), and possibly other organelles representing formerly free-living bacteria (prokaryotes) were taken inside another cell as an endosymbiont around 1.5 billion years ago. According to Endo-symbiotic theory, mitochondrion and chloroplast has originated from bacteria. But if we compare the genomes of bacteria, chloroplast and mitochondrion there is a difference in the protein synthesizing machineries of all the three structures indicating that
they have origination is some thing different from endo-symbiotic theory.

PT Perusahaan Gas Negara (Persero) Tbk Strategic Development
Facing Natural Gas Business Competition in Indonesia
Ardi Viryawan, Made Astawan, Kirbrandoko

Abstract: The objectives of this research are to identify influencing factors of PGN business, to formulate alternative strategies in developing business, and to recommend the priority strategies that could be applied on PGN business development in facing competition in natural gas business in Indonesia. This research used descriptive method with case study and descriptive analysis, internal-external analysis, IE matrix analysis, and SWOT and QSPM analysis. Data collecting technique used purposive sampling. From the result, strategy priority that could be done was to develop regulation management and to increase cooperation with stakeholder; to increase competitive and reliable supply through independent gas domination; to run competent, synergic business with international perspective; to improve human resources capability, technology, innovation, and information technology focusing on the future; to improve the business domination based solution of energy in all chain of natural gas values; and to build reliable and sustainable infrastructure.

Distribution, Growth and Aboveground Biomass of Teak (Tectona grandis L.) Plantation in Mullaitivu District of Sri Lanka
Satheesan, T, Sivanathawerl, T, Sivachandran, S and Phuspakumara, D.K.N.G

Abstract: Teak plantation was established in Northern Province of Sri Lanka since 1960's and it is widely used for the purpose as timber in Sri Lanka. Among the districts of the Northern region, Mullaitivu is a potential district for teak plantation. However, no scientific studies were done regarding teak plantation and its distribution pattern in Northern region. Therefore, a study was carried out to assess the distribution patterns, growth conditions and aboveground biomass in Mullaitivu district during the period of February to May, 2015. Plant height, diameter (dbh), crown height and canopy diameter were measured from selected teak plants in four locations such as Mulliyawalai, Mankulam, Karripatamuripu and Theravil. The measurements were taken with square plot of the size 15m x 15m and findings from the Mulliyawalai and Theravil sites had same aged plantation of 22 years, highest average height and dbh value had observed in Theravil site as 19.80±0.28 m and 20.10±0.24 cm, respectively. The highest aboveground biomass of 410.37t/ha and tree volume of 579.58m3/ha was found in Mulliyawalai. Among the four locations, the highest average aboveground biomass (1,301.49t/ha) and tree volume (2,043.77m3/ha) were observed in Karripatamuripu plantation. From this study Theravil site was selected as the best site for the plantations of teak.

EVALUATE RELATIONSHIP BETWEEN INSULIN RESISTANCE AND SERUM LIPOPROTEIN RATIO IN POLYCYSTIC OVARIAN SYNDROME
Dr. SUDHA AMBIGER

Abstract: Polycystic ovarian syndrome is most common endocrine disease and metabolic disorder in adolescence and reproductive women. In PCOS women insulin resistance thought to be the uniting pathogenic factor in the development of glucose intolerance, obesity, lipid abnormalities, HTN and coronary artery disease. This study is under taken to measure insulin resistance in PCOS and to see the relationship of insulin resistance with serum lipoprotein ratio. Case
control study was done taking 60 women PCOS and 60 age matched healthy women as controls. In all the subjects, concentrations of fasting plasma glucose, serum TG, serum TC and HDL were estimated using enzymatic methods in semi-autoanalyser. Fasting serum insulin and was measured by CLIA using Lumax-CLIA microplate reader. HOMA IR, serum LDL concentration, serum TC:HDL ratio, serum TG:HDL ratio and serum LDL:HDL ratio were calculated from estimated parameters. The mean concentrations of all the parameters were significantly increased in women with polycystic ovarian syndrome when compared with healthy women except serum HDL concentration, which was significantly decreased. Insulin resistance was significantly positively correlated with serum lipid profile and serum lipoprotein ratio except with serum HDL, which was significantly negatively correlated.

**Experimental investigation of Mineral Admixtures in Pervious Concrete: A Review**

Prof. DR K.B. Parikh, M.A. Shaikh, Adil A. Haji

**Abstract:** This review paper includes literature reviews related to pervious concrete and effects of mineral admixtures (Fly ash and silica fume) on properties of concrete. Various research papers, articles and thesis have been referred to understand various aspects of the pervious concrete, viz., basic behaviour, advantages, limitations, effects & mechanical properties. Various research papers published till date on different aspects of pervious concrete.

**Investigation and Performance Analysis of Network Congestion Reduction based on FLC Controller**

Ammar Al Mhdawi, MS. Eng.

**Abstract:** Qos has became one of the most important factors that governs the quality of network traffic. In this study, routers are deployed with data controllers to tackle the traffic congestion. The core router queue will be tested and monitored to decide if any action need to be taken to regulate the source data sending rate. This study does not depend on measuring the main parameters such as bandwidth, delay and packet loss, but it is focused on the max-min fairness and low queuing delay and the comparison between them.

**Implementation of Wind Turbine Using Matlab/Simulink and Labview**

K. Sree Varshini, Dr. R. Arul Mozhiyal

**Abstract:** This paper deals with the implementation of wind turbine driven by Doubly Fed Induction Generator (DFIG) using Matlab/Simulink and Labview. Here, Matlab/simulink readily deals with the Second Order Sliding Mode (SOSM) controller with DFIG wind turbine. SOSM control is used in order to obtain finite reaching time. Maximum power can be obtained by directly tracking the torque obtained. By SOSM controller, Maximum power extraction can be done with reduced mechanical stresses. In conventional methods due to failure in accuracies optimal power extraction is not done. This can be overcome by using SOSM control which will allow tracking DFIG torque directly for extracting maximum power. Turbine tip speed ratio is considered in doing so. The stator of the machine is directly connected to the power grid while the rotor is controlled by an inverter. Labview here is used for graphical representation of the desired output. Labview programs are integrated with DFIG wind turbine in order to acquire, analyze and displaying the data. In this paper, implementation of a DFIG based wind turbine is done and it is integrated with Labview. The results
Retinal Nerve Fiber Layer Thickness and Optic Nerve Head Parameters in Open Angle Glaucoma With Diabetes Mellitus Type 2

Masitha Dewi Sari, Soraya Fasya, Aslim D Sihotang

Department of Ophthalmology, University Of North Sumatra

Abstract- Background: Glaucoma is the second leading cause of blindness in the world. Diabetes Mellitus is an independent risk factor in open angle glaucoma. Among those who have suffered DM will have impact on vascular autoregulation disturbance that small vessel involvement may cause the retina and optic nerve become more susceptible to pressure related damage

Aim: To identify the Retinal Nerve Fiber Layer (RNFL) thickness and optic nerve head parameters in open angle glaucoma patients with diabetic mellitus type 2 in Adam Malik Hospital.

Methods: A prospective, analytical observational with cross sectional methods was conducted at the Adam Malik Hospital from September 2014 to Mei 2014 after approved by the Ethics Committee for Health Research University of North Sumatera School of Medicine. Thirty four open angle glaucoma patient with diabetes mellitus type 2 and thirty four patients primary open angle glaucomas as a control with age-matched subjects underwent a complete ophthalmological examination and imaging with Cirrus HD-OCT for the evaluation RNFL and optic nerve head.

Result: Superior RNFL was statically significant thinner in diabetic group (P=0.019) compared to the control group. There was no significant difference in temporal-nasal-inferior and average RNFL and there was no significant differences in parameters of optic nerve head.

Conclusion: The existence of diabetes should be seriously considered in evaluating the result of RNFL and optic nerve head by imaging.

Index Terms- Open Angle Glaucoma, Diabetes Mellitus, RNFL

I. INTRODUCTION

Diabetic is a complex disease resulting from the inability of the body to produce insulin, a hormone that takes sugar out of the blood and into cells where it can be used for energy. Diabetes most common in adult-onset diabetes. Adult-onset diabetes typically strikes those who are over 40, a family history of diabetes and certain ethnic groups. In Indonesia, there were 9 million cases of diabetes in 2008.

Glaucoma refers to a group of diseases that have common a characteristic progressive optic neuropathy with associated with visual function loss and higher of intraocular pressure as a risk factor. Open Angle Glaucoma (OAG) is characterized as a chronic, slowly progressive, optic neuropathy with characteristic patterns of optic nerve damage and visual field loss. Elevated IOP, advanced age, positive family history, myopia and Diabetes mellitus have contribute to the risk of developing this disease.

Several large epidemiological studies have reported positive associations between diabetes and open angle glaucoma. Glaucoma occurs more often in patients with diabetes (5%) than in the general population (2%). There are clear biologically plausible mechanisms supporting an association between diabetes and OAG. Microvascular damage from diabetes could impair blood flow to anterior optic nerve, resulting in optic nerve damage and diabetes also impairs the autoregulation of posterior ciliary circulation, which may exacerbate glaucomatous optic neuropathy. Finally, individuals with diabetes may be vulnerable to elevated intraocular pressure with more severe visual field loss.

Evaluation of the retinal nerve fiber layer (RNFL), as a means of assessing optic nerve health, has been a well-established clinical and investigational tool. Recent studies have supported the finding that diabetes mellitus was associated with thinning of RNFL. The aim of our study was to determine that diabetes mellitus type 2 was associated with thinning of RNFL. Patients with the disease were compared to primary open angle glaucoma with no DM as a control subjects of the same aged and sex. RNFL thickness and optic nerve head enlargement was measured by Cirrus Ocular Tomography (Cirrus HD-OCT).

II. SUBJECTS AND METHODS

Subjects

This was a prospective, noninvasive, cross sectional study comprising 34 open angle glaucoma with diabetes mellitus type 2 patient participants. These patients were selected among diabetics patients with one of criteria the random serum glucose level >200 mg/dL fasting glucose level >110 mg/dL and an HbA1C measurement >6% in the last 6 months. Selection criteria included the presence of type 2 diabetes mellitus for less than 8 years without retinopathy. The control group consisted of 34 subjects of POAG as the same age range and sex as the open angle glaucoma with diabetic patients. All control subjects had no history of diabetes and had undergone at least one blood exam showing normal serum glucose level (<110 mg/dL) and an HbA1C measurement <6% in the last 6 months.

Ethical approval was obtained from University Sumatera Utara ethics committee. The aims and objectives of our study were explained to all participants in accordance to the
Declaration of Helsinki. A written consent was obtained from all patients by the researchers.

The participant included in open angle glaucoma with Diabetes Mellitus type 2 and POAG as a control with glaucomatous appearance of optic disc on direct ophthalmoscope, glaucomatous visual field defect on SAP confirmed on two consecutive VF test and had a history of elevated IOP.

Patients medical history was recorded, visual acuity was measured with the best possible correction, and IOP was measured with the use of a Goldmann applanation tonometry, visual field test with Octopus 301 Perimetry. All participants underwent gonioscopy (Carl Zeiss Meditec AG, Jena, Germany).

Inclusion criteria: We included all patients who fulfilled the following criteria: age older than 40 years old, patients diagnosed as primary open angle glaucoma (POAG), open angles, good quality scans obtained in peripapillary RNFL thickness and optic nerve head evaluation by Cirrus HD-OCT and visual field with reliable SAP.

Exclusion criteria: Criteria for the exclusion of a patient from the study were best corrected visual acuity on the Snellen Chart worse than 6/60, any ocular conditions including corneal disease and diabetic retinopathy.

All patients had their RNFL measured by Cirrus HD-OCT (Carl Zeiss, Meditec, Dublin, CA). Cirrus HD-OCT (Carl Zeiss Meditec) improves on time-domain systems, allowing performance of up to 27,000 axial scans per second. Cirrus HD-OCT imaging, the Macular Cube 200 x 200 Combo protocol was used. The protocol consists of two perpendicular line scans centered at the fovea followed by a cube scan also centered at the fovea. The line scans were 6 mm in the transverse direction, had a 2 mm axial depth, and was composed of 200 x 200 axial scans. The Cirrus RNFL map represents a 0x6 mm cube of A-scan data centered over the optic nerve in which a 3.4 mm diameter circle RNFL data is extracted to create what is referred. It to as the TSNIIT map (temporal, superior, nasal, inferior) is displayed as a false color scale with the thickness values by quadrants and clock hours, and the RNFL peaks give a sense of the anatomic distribution of nerve fiber axons represented by the superior and inferior bundles that emanate from optic nerve. SD OCT had a sensitivity of 83% and a specificity of 89%. Cirrus HD-OCT also automatically outlines the optic nerve head, optic cup, and disc borders similar to mental estimations by clinicians, but then also calculates more objective measurements such as optic disc area and neuroretinal rim area in addition to the classic clinician subjective average. And vertical cup to disc ratio. This allows the 3.4 mm RNFL circle to always be centered in the same spot within the cube. ONH parameters have also been found to have excellent ability to discriminate between normal eyes and eyes with even mild glaucoma. The parameters found to have the greatest diagnostic capability are vertical rim thickness, rim area, and vertical cup to disc ratio. These ONH parameters were found to be as good as RNFL thickness parameters in diagnosing glaucoma [17].

Standart automated perimetry

SAP was performed with Normal strategy on OCTOPUS 301 (Haag-Streit, InterzeagInternational AG, Schlieren, Switzerland). A reliable VF defect was defined as one with less than 33% fixation loss and less than 20% positive and negative catch trial. Glaucomatous VF defect was defined as MD > 2.0 dB (equivalent to being triggered at the 5% level on the Humphrey Field Analyzer) or both in at least two reliable examinations. Statistical Analysis

The collected data write in the research publication and keep in the computer. The collected data kept in computer analysed by using the statistical software. To compare quantitative variables between the two groups, one way Anova test was used. Statistical analyses were performed with SPSS 19.0 and the level significance was = 0.05 in all statistical test.

### III. RESULTS

The demographic parameters from 34 patients open angle glaucoma with diabetes mellitus and 34 patients control are presented in Table 1.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Open Angle Glaucoma with DM type 2 x ± SD</th>
<th>Primary open Angle Glaucoma x ±SD</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>15(52,90)</td>
<td>11(32,40)</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>16(47,10)</td>
<td>23 (67,60)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>47.00±8,1 6</td>
<td>50,97±9,5 8</td>
<td>0.36 9</td>
</tr>
<tr>
<td>IOP</td>
<td>19,25±8,9 2</td>
<td>18,74±9,1 3</td>
<td>0.86 1</td>
</tr>
<tr>
<td>BCVA</td>
<td>0.05±0,010</td>
<td>0,07±0,10</td>
<td>0.41 0</td>
</tr>
<tr>
<td>MD (dB)</td>
<td>4,05±1,07</td>
<td>3,65±0,87</td>
<td>0.87 5</td>
</tr>
</tbody>
</table>

Based the clinical characteristic there was no significant differences between the two groups (p>0.05).

<table>
<thead>
<tr>
<th>Table 2. RNFL Thickness Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>RNFL parameter</td>
</tr>
<tr>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Average</td>
</tr>
<tr>
<td>- Mean SD</td>
</tr>
<tr>
<td>Inferior</td>
</tr>
<tr>
<td>- Mean SD</td>
</tr>
<tr>
<td>Superior</td>
</tr>
<tr>
<td>- Mean SD</td>
</tr>
<tr>
<td>Nasal</td>
</tr>
<tr>
<td>- Mean SD</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Temporal</th>
<th>21,20</th>
<th>17,40</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean SD</td>
<td>47,74±6</td>
<td>56,79±6</td>
<td>0,98</td>
</tr>
<tr>
<td></td>
<td>18,15</td>
<td>8,65</td>
<td>5</td>
</tr>
</tbody>
</table>

From the table, all 5 RNFL parameters were significantly thinner in the open angle glaucoma with DM type 2 compared with POAG group, but only in the superior average statistically significant difference (p<0.05).

### Table 3. ONH parameter

<table>
<thead>
<tr>
<th>ONH parameter</th>
<th>Open Angle Glaucoma with DM type 2</th>
<th>Primary open Angle Glaucoma</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDR</td>
<td>0,72 ± 0,14</td>
<td>0,68 ± 0,15</td>
<td>0,61</td>
</tr>
<tr>
<td>CD Vertical</td>
<td>0,73 ± 0,16</td>
<td>0,69 ± 0,13</td>
<td>0,54</td>
</tr>
<tr>
<td>CD Horizontal</td>
<td>0,70 ± 0,21</td>
<td>0,65 ± 0,19</td>
<td>0,57</td>
</tr>
</tbody>
</table>

From the table, all 3 optic nerve head parameters had enlargement but statistically no significant difference (p>0.05).

### IV. DISCUSSION

Glaucoma is the second leading cause of blindness after cataract in the world. Glaucoma refers to a group of diseases with optic neuropathy and decreased of visual field and higher intraocular pressure and diabetes mellitus as a risk factor. Diabetic is a complex disease resulting from the inability of the body to produce insulin, a hormone that takes sugar out of the blood and into cells where it can be used for energy. Diabetes mellitus may also alter the function of nonvascular cells. Experimental studies in diabetic rats showed evidence of retinal ganglion cell loss or damage. In humans, both histological and immunohistochemical studies provided evidence of loss of retinal ganglion cells.

Qualitative photographic evaluation of RNFL in diabetic patients showed evidence of thinning. The defect was associated with advanced age and higher levels of retinopathy. Therefore the objective determination of RNFL thickness is essential. Determination of RNFL defects using OCT confirmed that the thinning is associated with the presence of diabetes mellitus. In our study, we observed thinning of RNFL and ONH by using Cirrus HD-OCT.

Furthermore, we demonstrated that there was a statistically significant reduction in superior average in open angle glaucoma with DM type 2. Diabetes mellitus is characterized by obstruction and disruption of the basic membrane of small blood vessels. It has been hypothesized that superficial capillary vessels responsible for the perfusion of the nerve fibers and optic nerve head become ischemic. This may explain why there are early disruptions in vision, such as reduction in contrast sensitivity, impaired evoked visual dynamics and deterioration of visual fields in diabetic patients before vascular lesions are detected.

In previous studies from Sugimoto, thinning of RNFL was found more prominent in the superior area, and it is suitable with our study that found the thinning RNFL in superior area.

From the optic nerve head assessment, there was not statistically significant difference in Cup/Disc Ratio Vertical, Horizontal, and Cup Disc Ratio between the two groups. Alexander Fredrich found the optic nerve morphology with stereophotography there was no statistically significant difference in open angle glaucoma with DM compared to without DM.

In conclusion, we found there was significant thinner of superior average RNFL in open angle glaucoma with DM type 2. Therefore, RNFL thickness in diabetic patients may prove a valuable tool in the assessment and routine monitoring and its associated visual deficits. Nonetheless, it is still premature to advocate the routine measurement of RNFL thickness as a means of detecting early changes in diabetics. Well design, good quality prospective longitudinal clinical trials on larger populations are therefore needed.

### DISCLOSURE

Patients have been approved prior to the study conducted. Costs borne by researchers.

### REFERENCES


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