BIOMARKERS OF ORTHODONTIC TOOTH MOVEMENT AND PAIN EXPERIENCED DURING FIXED ORTHODONTIC THERAPY IN SALIVA: A SYSTEMATIC REVIEW.

- **Dr Sagar S Bhat, India**

CATEGORY: Under Young Research Scientist – Distinguished Invited Speaker

TRACK 7: Biomarkers for non-invasive diagnostics

Abstract

Background: Biomarkers are by definition objective, quantifiable characteristics of biological processes. The analysis of Saliva/ Salivary fluid may be an accepted way to examine the ongoing biochemical processes associated with bone turnover during orthodontic tooth movement and fixed orthodontic treatment pain. Pain and discomfort are fundamental in human existence during orthodontic treatment. If it is possible to biologically monitor and predict the outcome of orthodontic forces, then the management of appliances could be based on individual tissue responses, and the effectiveness of the treatment could be improved. Assessing pain objectively and the outcome of biomechanical therapy using salivary physiological biomarkers would benefit the clinician for appropriate pain diagnosis and management. Due to lack of standardized collection procedure, even though well accepted by patients, saliva is often neglected as a body fluid of diagnostic and prognostic value.

Methodology: A literature search was carried out in major databases such as PubMed, Medline, Cochrane library, Web of Science, Google Scholar, Scopus and EMBASE for relevant studies. Publication in English between 2000 to 2018 which estimated Saliva markers as indicators of orthodontic tooth movement will be included.

Results: The list of biomarkers available to date was compiled and will be presented in presentation and table format. Each biomarker will be discussed separately based on the available and collected evidences.

Conclusion: Several sensitive salivary biomarkers are available to detect the biomechanical changes occurring during orthodontic tooth movement and pain occurring during fixed orthodontic therapy. Further focussed research might help to analyse the sensitivity and reliability of these biomarkers or cytokines, which in turn can lead to the development of chairside tests to assess the pain experienced by patients during orthodontic therapy and finally the outcome of the fixed orthodontic therapy.

Keywords: Biomarkers, Fixed mechanotherapy, Saliva, Orthodontic Treatment, Orthodontic Pain.

Brief Curriculum Vitae(CV)/ Resume:

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Indian Dental Association (IDA) Student Membership Number: 194037
Indian Orthodontic Society (IOS) Student Membership Number: SLM9654



Academic Qualification:

-Xth standard(2009-2010) –Acharya Pathasala Public School, N R Colony, Bengaluru - passed with distinction with 87.42% CISCE Board, New Delhi

- II PUC(2011-2012) - Sri Bhagawan Mahaveer Jain College, V V puram, Bengaluru - Passed with First Class with 71.5% Karnataka Pre- University Board, Bengaluru, Karnataka

- I BDS (Bachelor of Dental Surgery) – Merit Seat got through Karnataka

Common Entrance Test (C.E.T) 2012 at
The Oxford Dental College, Hospital,
Hosur Road, Bommanahalli, Bengaluru – 62

- I MDS (Master of Dental Surgery) - Merit Seat got through National Examination cum Entrance Test (N.E.E.T) 2018 at

-I BDS – passed out with First Class with 71.5%
-II BDS –.passed out with First Class with 71%.
S D M College of Dental Sciences and Hospital,
Sattur, Dharwad -09, Karnataka, India.

- III BDS - passed out with First Class with 69%..
- IV BDS – passed out with First Class with 69.5%.

Total Aggregate : 70%
Recent Achievements:

- Was presented with the **CERTIFICATE OF AWARD** under "**HONOURABLE MENTION**" category for my best performance in **CRISIS COMMITTEE** at **ASIA YOUTH INTERNATIONAL MODEL UNITED NATION - 2018 (AYIMUN - 2018)** which was held from 3rd – 6th November, 2018 at Prince Palace Hotel, **Bangkok, Thailand**. This is my FIRST INTERNATIONAL AWARD abroad at a prestigious **UNITED NATION ORGANIZATION (UNO)** INTERNATIONAL PLATFORM.

- Awarded as WINNER of "**IARDO Awards for Outstanding Contribution in Dental Sciences - 2018" at International Award Conference on Multidisciplinary Research and Latest Innovation presented by International Association of Research and Developed Organization (IARDO) for All round Excellence in the field of Dentistry. This was** awarded on 28th, October, 2018, at The International Center Goa, Dona Paula, Goa, India.

- Selected as an **INTERNATIONAL DELEGATE and SPEAKER** among 18235 applicants around the World to represent our college and country in **ASIA YOUTH INTERNATIONAL MODEL UNITED NATIONS – 2018 (AYIMUNS – 2018)**, which was held from 3rd – 6th November, 2018 at Bangkok, Thailand. Representing our college and country in debating and meeting sessions and allotted to represent under **CRISIS COMMITTEE**, one of the prestigious councils of **United Nations Organization (UNO).**

-Awarded as WINNER of "**Charaka Award" at International Exemplary Research and Performance Awards 2018** awarded on Febrauary 26th, 2018 at PHD Chambers of Commerce, New Delhi, India.

- Awarded as WINNER of **Pierre Fauchard Academy International Senior Student Award – 2017 in Recognition of All – Round Excellence in Dentistry by Pierre Fauchard Academy, India Section-** awarded on December 16th, 2017 at Hotel Ocean Pearl, Mangaluru, Dakshina Kannada
District, Karnataka**.**

- Won FAMDENT **EXCELLENCE IN DENTISTRY AWARD – 2017** (National Award) under **Student of the Year** Category, held at The Colonial Hall, The Club, West Andheri, Mumbai on 16th December, 2017.

- Awarded as **"BEST OUTGOING STUDENT" for the year 2017** from The Oxford Dental College, Hospital, Bengaluru, Karnataka, India.

- Awarded as a WINNER of **Excellency Award – 2017 in Recognition of All – Round Excellence and Outstanding Performance in Dentistry** by Bank Of India, Bengaluru Zone, on 112th Foundation Day Celebration on 7th September 2017.

-Won **INDIA DENTAL AWARD – 2017** (National Award) under **Best Dental Student of the Year Category**, held at The Taj, Kempegowda International Airport, Bengaluru on 7th May, 2017.

-Officially designated as **Research Fellow** in the **Department of Research** and in **Craniofacial Surgery Department** at **Mazumdar Shaw Medical Centre, (Narayana Health) NH City, Bengaluru.**

-Achieved "**Profile of the Month Award**" from **Indian Dental Association(IDA)** for the Month of **January 2017**in **Recognition of All – Round Excellence in Dentistry.**

-Won **FAMDENT EXCELLENCE IN DENTISTRY AWARD – 2016** (National Award) under **Indian Dental Talent of the Year** Category, held at The Colonial Hall, The Club, West Andheri, Mumbai on 17th December, 2016.

-Won **IACDE NATIONAL YOUNG ACHIEVER AWARD – 2016** under Undergraduate (UG) Category for **ALL ROUND EXCELLENCE**, held during **IACDE AWARDS NIGHT**, 31st IACDE and 24th IES National Conference, Science City, Kolkata on 11th November, 2016.

- Was selected under **top best 25 abstracts** all over India to represent The Oxford Dental College to present a table clinic in **the 20th DENTSPLY IDA Student Clinician Research Program 2016**, held on 18th February, 2016 at New Delhi. Presented a **Table top presentation** on topic – **TOXIN FREE DENTISTRY.**

- Selected as an official and permanent member of THE INTERNATIONAL ASSOCIATION OF STUDENT CLINICIANS - AMERICAN DENTAL ASSOCIATION, under the sponsorship of **DENTSPLY INTERNATIONAL**.

- Achieved "**Profile of the Year Award**" from **Indian Dental Association(IDA)** for the Year **2014** in **Recognition of All – Round Excellence in Dentistry.**

-Achieved "**Profile of the Month Award**" from **Indian Dental Association(IDA)** for the Month of **August 2014** in **Recognition of All – Round Excellence in Dentistry.**

Conferences Attended and presented Scientific Paper/Poster:

- Achieved **First Place** in **Scientific Paper Presentation** for the topic – "Toxicology--The Blind Spot…!!!!" at **68th Indian Dental Conference - 2015, Manphos Convention Centre, Bengaluru** from **13th – 15thFebruary 2015** and was awarded with **18 CDE points,** approved by **Indian Dental Association(IDA). .**

- Won Second Place in **Scientific Paper Presentation** for the topic – " Changing Lifestyle for the cause of illness….???? " at **2nd Inter State and 42nd Karnataka State Dental Conference 2014** held at Sahyadri Institute, **Mangalore** from **27th – 30th November 2014,** and was awarded with **15 CDE points,** approved by **Karnataka State Dental Council (KSDC).**

-Awarded **2nd place for Dental Debate at 102nd FDI Annual World Dental Congress - 2014, held at New Delhi, Greater Noida(UP)**from 11- 14th September 2014 and **Best scientific Paper award at National UG Convention- 2014 conducted by Indian Academy of Oral medicine and Radiology(IAOMR)** in Bengaluru on September 20th 2014, and was awarded with **38 CDE points, approved by FDI and IDA.**
-Achieved **Best Scientific Paper Award** for the topic : " Lobular Capillary Hemangioma : A Diagnostic Dilemma – A Rare Case Report" at **National UG Convention 2014** conducted by **Indian Academy of Oral Medicine and Radiology(IAOMR)** at The Oxford **"Perio-Prabhat – 2014"** held at Oxford dental college on 8th& 9th August, 2014.

-Achieved **First Prize and Best Poster Award** On the topic " HIV Vaccine" in Poster presentation at **Karnataka State Dental Conference(KSDC – 2013)** , Held at **Madik** from 22nd – 24th November, 2013, and was awarded with **15 CDE points,** approved by **Karnata State Dental Council (KSDC).**
Dental College, Bengaluru, Karnataka on 20th September, 2014.

- Achieved **Second Place** for **Scientific Paper presentation** on topic – " Effectiveness of Anti Tobacco Government Advertisements on youth and Impact of tobacco use on Periodontium" at Periodontics **National Conference** –

- Participated as Delegate and Presented Scientific Paper Presentation for the topic – " Elephantiasis Gingivae – a Rare Case Report " at **43rd Karnataka State Dental Conference 2015** held at Hosted By IDA Puttur Branch B C Road, **Mangalore** from **18h – 20th December, 2015** and was awarded with**15 CDE CREDIT POINTS** approved by **Karnataka State Dental Council (KSDC).**

- Participated as Delegate and Presented Scientific Paper Presentation for the topic – "**Enigma surrounding the Pulpal Cancer – An exploration……!!!!** "at **National UG Convention 2016** conducted by **Indian Academy of Oral Medicine and Radiology(IAOMR),** held on **16th October, 2016,** hosted by Department of Oral Medicine and Radiology, KMCT Dental College and Government Dental College, Calicut, Kerala.

- Participated as Delegate and Presented Scientific **Paper Presentation** at **1st Student Conference of Research in Education 2017 (SCoRE 2017)** held at Dr TMA Pai International Convention Center, Mangalore, Hosted By Manipal University Student Research Forum, **Manipal College of Dental Sciences, Mangalore** on **4th Febrauary, 2017** and was awarded with **12 CDE CREDIT POINTS** approved by **Karnataka State Dental Council (KSDC).**

Participated as Delegate and Presented Scientific Paper Presentation for the topic – " To treat Peri-Implantitis : A Prosthodontist's Insight….!!!! " at **3rd Inter State and 44th Karnataka State Dental Conference 2016** held at Hosted By IDA Dharwad Branch, **Dharwad** from **9h – 11th December, 2016** and was awarded with **18 CDE CREDIT POINTS** approved by **Karnataka State Dental Council (KSDC).**

-Participated and presented abstract as **author** for the **"All India Poster Competition"** at the **World Dental Show, Mumbai, 16 – 18 October, 2015**. **Abstract Title :** When Tooth Talks To Brain.

-" **Oral Potentially Malignant Disorders"** -- A **retrospective interview** on one to one basis on 102 people on use of Tobacco products" WAS CONDUCTED during **JULY - August, 2013** and was presented at **YOUTH AGAINST CANCER , INTERNATIONAL SYMPOSIUM** ,held at Sindhi
College, Hebbal, Bengaluru.

Ongoing Research:

- Currently, **research proposal** on topic: **"Effect of Vitamin D on periodontal status in Vitamin D deficiency patients undergoing periodontal treatment in Indian Population: an Observational study at a Tertiary Dental Care Hospital"** has been accepted at The Oxford Dental College, Bengaluru. **This proposal got The Oxford Dental College, Hospital – Institutional Ethics Committee Approval on 16th October, 2015** to conduct the study. This is **an ongoing research**
now. Observational Study completed is going on. Application for Research Grant has been submitted. Interventional Study to be started soon.

- Currently, **research proposal** on topic: **"Comparative evaluation of periapical healing following conventional endodontic therapy and laser assisted disinfection: An Experimental Study at a Tertiary Dental Care Hospital"** has been accepted at The Oxford Dental College, Bengaluru. **This proposal got The Oxford Dental College, Hospital – Institutional Ethical Committee Approval on 16th October, 2015** to conduct the study. This is **an ongoing research** now. Application for
Research Grant has been submitted. Interventional Study to be started soon.

-Presently conducting a **Questionnaire based study (Research)** on the topic - Knowledge **among dental care givers about oral health and nutrition, and importance of nutrition in health and disease -** in and around Bengaluru which has been approved by Ethical Committee of TODC. **Validity and Reliability Tests done and got approval** for **questionnaire** from Department of Nutrition of **Sri Jayadeva Institute of Cardiovascular Sciences and Research**, **Bengaluru** and from Department of Periodontics and Department of Conservative & Endodontics , **The Oxford Dental College, Bengaluru.**

-Currently, **research proposal** on topic: **"Nutritional Profile in Cancer Patients using Karada Scanner: An Observational Study and co-relation of Nutritional Status of Cancer Patients with Cancer Related Fatigue (CRF)"** has been accepted at Mazumdar Shaw Medical Centre, (Narayana Health) NH City, Bengaluru. **This proposal got Mazumdar Shaw Medical Center NH Hospitals Ethical Committee Approval on 9th October,2015** to conduct the study. This is **an ongoing research** now. Observational Study completed successfully**. Interventional Study started.**

- - I am **certified** and **registered Donor** with the **BMCDT – Infosys Bone Marrow Registry** as of from **8th May 2015**. (**Reg No: 21M15001169**).

Workshops Attended:

- Participated as a **Delegate** in **Pre – Conference Hands on –Workshop** held at **Manipal College of Dental Sciences, Mangalore** on **3rd February, 2017 on "Forensic Odontology"** as a part of **1st Student Conference of Research in Education 2017 (SCoRE 2017),** Hosted By Manipal University Student Research Forum, **Manipal College of Dental Sciences, Mangalore 2017 and** was awarded with **2 CDE CREDIT POINTS** approved by **Karnataka State Dental Council (KSDC).**

- Participated as a **Delegate** in **Pre – Conference Hands on –Workshop** held at **Manipal College of Dental Sciences, Mangalore** on **3rd February, 2017 on "Steps to publish Research Paper"** as a part of **1st Student Conference of Research in Education 2017 (SCoRE 2017),** Hosted By Manipal University Student Research Forum, **Manipal College of Dental Sciences, Mangalore 2017 and** was awarded with **2 CDE CREDIT POINTS** approved by **Karnataka State Dental Council (KSDC).**

- Participated as a **Delegate** in **Hands on – Implant Workshop** held at The Oxford Dental College & Hospital, Bengaluru on **13th April, 2016** on **"Multi-Design Approach to optimize Implant based rehabilitation"** with **6 CDE CREDIT POINTS** approved by **Karnataka State Dental Council (KSDC) by Dr. Anand Krishnamurthy.**

- Attended the **Hands-On Workshop on Basics on Oral Implantology** using **Nobel Biocare and Nobel Active Implant Kits** held on **8th and 9th of June 2015** at The Oxford Dental College, Hospital and Research Center, Bengaluru conducted by **The**

Alumni Association, **The Oxford Dental College, Hospital and Research Center, Bengaluru – AN INTENSIVE TRAINING PROGRAMME ON BASICS OF ORAL IMPLANTOLOGY.**

- Participated as a **Delegate** in **Workshop programme** held at The Oxford Dental College & Hospital, Bengaluru on **17th May, 2016** on **"Live Surgical Workshop on Orthognathic Surgery"** with **6 CDE CREDIT POINTS** approved by **Karnataka State Dental Council (KSDC).**

- Participated as a **Delegate** in **Workshop** held at The Oxford Dental College & Hospital, Bengaluru on **" IMPLEMENTING ACTIVITIES FOR CESSATION OF**

CDE Programmes attended and participated:

TOBACCO" on **22nd and 23rd September, 2016 in association with Department of Public Health Dentistry, TODC and National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru and Tobacco Cessation Centre, Bengaluru.**

- Participated as a **Delegate** in **CDE programme** held at Shelton Hotel, Bengaluru 12th **April, 2015** on **"Medical Emergencies in Dentistry"** with **3 CDE CREDIT POINTS** approved by **Karnataka State Dental Council (KSDC) conducted by Institute of Dental Education and Esthetics (IDEA).**

- Participated as a **Delegate** in **CDE programme** held at The Oxford Dental College & Hospital, Bengaluru on **6th January, 2016** on **"Composite Revolutions – Lets Change with Change"** with **3 CDE CREDIT POINTS** approved by **Karnataka State Dental Council (KSDC) conducted by Espertise Interactive Learning (3M ESPE).**

- Participated as a **Delegate** in **CDE programme** held at The Oxford Dental College & Hospital, Bengaluru on **13th April, 2016** on **"Multi-Design Approach to optimize Implant based rehabilitation"** with **3 CDE CREDIT POINTS** approved by **Karnataka State Dental Council (KSDC) by Dr. Anand Krishnamurthy.**

- Participated as a **Delegate** in **CDE programme and Panel Discussion** held at The Oxford Dental College & Hospital, Bengaluru on **" PLAIN PACKAGING, PLAIN TALK – TOBACCO CONTROL MEASURES IN THE STATE"** on **31st May, 2016 in association with Department of Public Health Dentistry, TODC and Consortium of Tobacco Free Karnataka and IAPHD, Karnataka State Chapter.**

- Participated as a **Delegate** in **CDE programme** held at The Oxford Dental College & Hospital, Bengaluru on **20th November 2015** on **"Oral Cancer Diagnosis and Management"** with **3 CDE CREDIT POINTS** approved by **Karnataka State Dental Council (KSDC).**

Online Courses from Certified Forgien Universities:

- COMPLETED **EMORY UNIVERSITY**'S ONLINE OFFERING OF The Addicted Brain and received Statement of Accomplishment and Verified Certificate.

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- COMPLETED **NORTHWESTERN UNIVERSITY**'S ONLINE OFFERING OF Career 911: Your Future Job in Medicine and Healthcare and received Statement of Accomplishment.

- COMPLETED **UNIVERSITY OF WASHINGTON'S** ONLINE OFFERING OF Computational Neuroscience and received Statement of Accomplishment.

- COMPLETED **UNIVERSITY OF MICHIGAN** 'S ONLINE OFFERING OF Sleep: Neurobiology, Medicine, and Society and received Statement of Accomplishment.

- COMPLETED **UNIVERSITY OF EDINBURGH** 'S ONLINE OFFERING OF The Clinical Psychology of Children and Young People and received Statement of Accomplishment.

- Completed **Online Courses** Conducted by **Academy of Dental Excellence, Ealing, London, UK** and achieved **Certificate of Completion** on courses:

1. ***Dental Anaesthesiology with Prof Malamed, CPD / CE Credits: 1.0 hour(s).***
2. ***Full Arch Rubber Dam Isolation.***
3. ***Tandem Bow in Class 3 Treatment, CPD / CE Credits: 1.0 hour(s).***
4. ***Smile Design, CPD / CE Credits: 1.0 hour(s).***
5. ***Anterior Direct Composites, CPD / CE Credits: 2.0 hour(s).***
6. ***Direct Composite Restorations, CPD / CE Credits: 4.0 hour(s).***
7. ***Taking Intra and Extra-Oral Ortho Records, CPD / CE Credits: 0.5 hour(s).***
8. ***Oral Drugs for Adult Anxiolysis, FAGD / MAGD Credits: 1.0 hour(s).***
9. ***Clinical Application of Biodentine, CPD / CE Credits: 1.5 hour(s).***
10. ***Oral Myology Treatment of Open Bites, CPD / CE Credits: 0.5 hour(s).***

PUBLICATIONS:

1. Bhat S S, Rao S G (2018) 'Incidence/co morbidity of ischemic heart diseases (IHD)/
myocardial infarct (mi)/cardiovascular disorders in smoking cancer patients and vice versa – a review', International Journal of Current Advanced Research, 07(10), . 14747-14751.

2. BHAT SS, BHADRANNA A, PRASAD SR, RAO SG, PAI A. Are the Media Enabled Anti-tobacco Campaigns Effective? A Pilot Study. Journal of Clinical & Diagnostic Research. 2018 Nov 1;12(11).

3. Bhat S S, Rao S G, Toxicology: The blind spot., Asian Pac. J. Health Sci., 2018; 5(3):225-232

4. BHAT SS, PRASAD SR, RAO SG, PAI A..,"Enigma Surrounding Pulpal Cancer - A Re-Exploration". Acta Scientific Dental Science 2.9 (2018): 69-72.

5. - BHADRANNA A, BHAT SS, C SHYAMANAND, "Public awareness of oral potentially malignant disorders (oral precancer) in Bengaluru, India: A pilot Study", Journal of The Oxford Dental College, Volume 4, Issue 1, January – June 2013, page 1-2 , Original Research Category.

6. Bhat S S, Rao S G, "Exceeding the Dose, even the life-giving potion turns poisonous", IDA Times, March 2015, Issue 3, Volume XI, page 20-21.

7. Bhat S S, Rao S G, "Do Medical and Dental Care Givers know about the Importance of Nutrition in Health and Disease?", Dental Expression, Volume 2, Issue 1, June 2015, page 26-32.

8. Bhat S S, Rao S G, "The Food that we eat but don't understand.....!!!!!", Karnataka State Dental Journal (KSDJ), Volume 33, Issue 1, January- March 2015, page 26-30.

PUBLICATIONS (In Tabular Format):

SL. NO	JOURNAL INFORMATION AND TOPIC	JOURNAL NAME	AUTHORS

1	-	Bhat S S, Rao S G (2018) 'Incidence/co morbidity of ischemic heart diseases (IHD)/myocardial infarct (mi)/cardiovascular disorders in smoking cancer patients and vice versa – a review', International Journal of Current Advanced Research, 07(10), pp. 14747-14751.	**International Journal of Current Advanced Research**	Dr Sagar S Bhat Dr Srinivasan G
2	-	BHAT SS, BHADRANNA A, PRASAD SR, RAO SG, PAI A. Are the Media Enabled Anti-tobacco Campaigns Effective? A Pilot Study. Journal of Clinical & Diagnostic Research. 2018 Nov 1;12(11).	**Journal of Clinical & Diagnostic Research.**	Dr Sagar S Bhat Dr Abhishek Bhadranna Dr Srinivasan G Dr SheshaPrasad R Dr Anuradha Pai
3		- Sagar S Bhat, Srinivasa Gopala Rao, Toxicology: The blind spot., Asian Pac. J. Health Sci., 2018; 5(3):225-232	**Asian Pacific Journal of Health Sciences**	Dr Sagar S Bhat Dr Srinivasan G
4	-	Sagar S Bhat, SheshaPrasad R, Srinivasan G, Anuradha Pai.,"Enigma Surrounding Pulpal Cancer - A Re-Exploration". Acta Scientific Dental Science 2.9 (2018): 69-72.	**Acta Scientific Dental Sciences Journal**	Dr. Sagar S Bhat, Dr. SheshaPrasad R, Dr Srinivasan G, Dr. Anuradha Pai.
5		-Abhishek Bhadranna, Sagar S Bhat, C Shyamanand, "Public awareness of oral potentially malignant disorders (oral precancer) in Bengaluru, India: A pilot Study", Journal of The Oxford Dental College, Volume 4, Issue 1, January -	**Journal of The Oxford Dental College**	Dr.Abhishek Bhadranna, Dr. Sagar S Bhat, Dr. C Shyamanand

	June 2013, page 1-2 , Original Research Category		
6	-Sagar S Bhat, Srinivasan G, "Exceeding the Dose, even the life-giving potion turns poisonous", IDA Times, March 2015, Issue 3, Volume XI, page 20-21.	**IDA Times** - An Official IDA Publication March 2015 Issue.	Dr. Sagar S Bhat, Dr. Srinivasan G
7	-Sagar S Bhat, Srinivasan G, "Do Medical and Dental Care Givers know about the Importance of Nutrition in Health and Disease?", Dental Expression, Volume 2, Issue 1, June 2015, page 26-32.	**Dental Expression,** An Official Publication of IDA South West Delhi Branch, June 2015 issue.	Dr Sagar S Bhat, Dr. Srinivasan G
8	-Sagar S Bhat, Srinivasan G, "The Food that we eat but don't understand.....!!!!!", Karnataka State Dental Journal (KSDJ), Volume 33, Issue 1, January- March 2015, page 26-30.	**Karnataka State Dental Journal (KSDJ),** An Official Publication of IDA Karnataka State Branch, January-March 2015.	Dr. Sagar S Bhat, Dr. Srinivasan G