

## Ambli Dodda Bharamappa First Grade College.

(Affiliated to VSK University Ballari)

Accredited with 'B' Grade by NAAC.

Harapanahalli-583131, Vijayanagara District, Karnataka

Website: www.adbcollege.org

e mail: adbprince@gmail.com



### DVV Clarification for 3.3.2

#### DVV Findings:

HEI needs to confirm that the faculty/author is its full time faculty during the publication/participation of the book/conference duly signed and stamped by the head of HEI.

#### HEI Response:

In response to the clarification provided by the DVV, HEI would like to confirm that

1. Sri.K. Manjanna, Associate Professor, HOD of Electronics and
2. Sri.Nawaz Basha.C, Director of Physical Education.

Participated at conferences while working as a full-time Faculty.

  
Principal

A.D.B.First Grade College  
Harapanahalli-583131



# **INTERNATIONAL CONFERENCE ON RECENT TRENDS IN ELECTRONICS AND INSTRUMENTATION**

**(ICRTEI-2019)**

**29<sup>th</sup> & 30<sup>th</sup> AUGUST 2019**

**Department of Electronics and Instrumentation**

**School of Physical Science**

**Bharathiar University, Coimbatore - 641046**

**Tamil Nadu, India**

## **Conference Proceedings**

**Co-Sponsored by**

**Defence Research and Development Organisation (DRDO), Govt. of India**





**CONFERENCE PROCEEDINGS**

**INTERNATIONAL CONFERENCE ON**

**RECENT TRENDS IN**

**ELECTRONICS AND INSTRUMENTATION**

**(ICRTEI - 2019)**

29<sup>th</sup> and 30<sup>th</sup> August 2019

Organized by

**DEPARTMENT OF**

**ELECTRONICS AND INSTRUMENTATION**

School of Physical Science  
Bharathiar University  
Coimbatore - 641 046  
Tamil Nadu, India



**BLUE HILL PUBLISHERS**  
Coimbatore - 641 113, Tamil Nadu, India.  
Web: [www.bluehillpublisher.com](http://www.bluehillpublisher.com)

**Title:** Conference Proceedings of "International Conference on Recent Trends in Electronics and Instrumentation (ICRTEI - 2019)"

**Language:** English

**Year:** 2019

**ISBN Number:** 978-81-939936-7-5

The copyright shall be vested with Department of Electronics and Instrumentation, Bharathiar University.

All rights reserved. No part of this publication which is material protected by this copyright notice may be reproduced or transmitted or utilized or stored in any form or by means now known or hereinafter invented, electronic, digital or mechanical, including photocopying, scanning, recording or by any information storage or retrieval system, without prior written permission from the Department of Electronics and Instrumentation, Bharathiar University.

Information obtained in this book has been published by Blue hill publisher and has been obtained by its author from source believed to be reliable are correct to the best of their knowledge. However, the Department of Electronics and Instrumentation, Bharathiar University, Publisher and its authors shall in no event be liable for any error, omissions or damages arising out of use of this information and specifically disclaim any implied warranties or merchantability or fitness for any particular use.

**Published By :** Blue Hill Publishers, Coimbatore

**Editor** : Dr. S. Muruganand

**Co-Editors** : Dr. R. Maheswaran

Dr. N. Manikandan

Mrs. S. Sathya

Mr. K. Karuppasamy

Mr. P.V. Paramaguru

**Editorial Board Members:** Dr. J. Vijayakumar

Dr. Azha. Periasamy

Dr. Sujith Raman

Dr. S. Rathinavel

Dr. K.G. Padmasine

**Designers** : Mrs. D. Devilalitha

Mr. R. Suriyaprakash

## TWO ELEMENT RING COUPLED RECTANGULAR MICROSTRIP ANTENNA

K.Manjanna<sup>1</sup>, P.V.Hunagund<sup>2</sup>, Vani R.M<sup>3</sup>

<sup>1,2</sup>Department of Applied Electronics, Gulbarga University, Kalaburgi-585106 Karnataka, India

<sup>3</sup> University Science Instrumentation Centre, Gulbarga University, Kalaburgi-585106 Karnataka, India

---

**Abstract:** In this paper, a rectangular microstrip patch array antenna is designed using IE3D software. The prototype consists of a two identical rectangular microstrip antenna elements and printed on 1.6mm thicker FR-4 substrate with an overall dimension of 115.6X62.7mm<sup>2</sup>. To improve the antenna parameters proposed array antenna elements are etched with ring coupled rectangular slot along with inverted U shaped slot, horizontal shaped slot, H shaped slot, and S shaped slot. The proposed array antenna resonates at 4.96GHz with bandwidth of 158.4MHz along with minimum return loss of -22.52dB respectively. The simulated parameters are found in good agreement and well suited for wireless applications.

**Keywords:** Micro strip antenna, Bandwidth, Return loss, IE3D.

---

### INTRODUCTION

An antenna is a device used to transform an RF signal travelling on a conductor, into an electromagnetic guided in free space, and vice-versa (i.e. in either transmitting or receiving mode of operation). In its most basic form, a microstrip patch antenna (MSA) consists of a radiating patch on one side of a dielectric substrate which has a ground plane on the other side. The patch is generally made of conducting material such as copper or gold. A rectangular patch is used as the main radiator. The dielectric constant of the substrate should be low in order to enhance the fringing fields which are responsible for most of the radiations from the patch. The shapes of the patch are rectangular, triangular, square, circular, elliptical, hexagonal etc.[1]

It was first proposed by G.A Deschamps in 1953. The proposed concept of micro strip antennas to transmit radio frequency signals could not gain much ground till late 1970s. Further researches by Robert E Munson worked on a new class of antenna using micro strips to form the feed networks and radiators in 1974. It was limited to small bandwidths phased arrays. This work was further improved by S.A Long and M.D Walton in 1979. In 1984, Y. Suzuki and T. Chiba performed a computer simulation for a random structured micro strip antenna. In between a lot of researches were performed for various shapes and wide band frequencies for MSAs. In 2001, Chattopadhyay et al improved the characteristics if a micro strip antenna with variable air gap and varying aspect ratio [2]. The invention of radiation from micro strip resonators has brought an extensive revolution application of micro strip antennas for aerospace vehicles and satellites. Their light weights and miniature size are appreciable features besides low cost, planner configuration and compatibility. An antenna on space shuttle/missiles generates electro-acoustic waves in addition to RF waves during its voyage through the atmosphere.

This paper is organized as follows; the 2nd section presents the design of conventional rectangular microstrip array antenna and proposed rectangular microstrip array antenna. The results and explanations are then presented in the 3rd section, followed by conclusion in the 4th section.

### RECTANGULAR MICROSTRIP ANTENNA DESING

The simulated conventional rectangular microstrip array antenna (CRMAA) is illustrated in Fig.1. The antennas are printed on FR-4 substrate with loss tangent 0.02 and thickness 1.6mm respectively. Two identical rectangular microstrip antenna elements are extended with separation of  $\lambda/4$  (where  $\lambda$  is the free space wavelength) is maintained to avoid poor diversity. Corporate microstrip line feed port is used. The total stretch of the rectangular microstrip array antenna is  $115.6 \times 62.7 \times 1.6 \text{mm}^3$  and dimensions of the antenna are shown in Table-1 respectively.

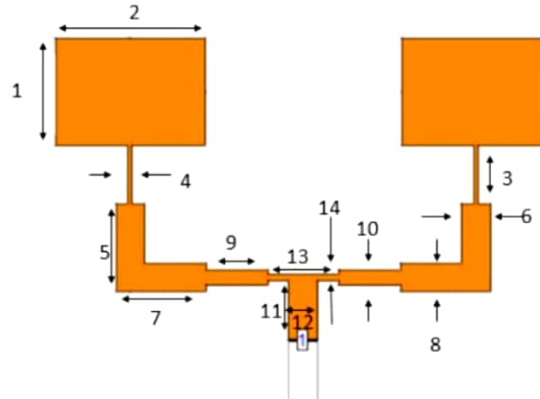


Fig 1: Geometry of CRMAA

Table 1: Dimensions of CRMAA

Parameters	1	2	3	4	5	6	7
Dimensions (mm)	15.73	11.76	6.47	0.47	6.52	3.05	3.05
Parameters	8	9	10	11	12	13	14
Dimensions (mm)	3.05	6.54	1.62	6.52	3.05	6.56	7.0

The study is continued to further improvement of antenna parameters, radiating patch elements are etched with ring coupled rectangular slot and inverted U shaped slot. The dimensions of the ring coupled rectangular slot are  $(L1, W1, G1) = (7\text{mm}, 7\text{mm}, 0.9\text{mm})$ , and inverted U shaped slot are  $(L2, W2, G2) = (4\text{mm}, 5\text{mm}, 0.9\text{mm})$  respectively. It is named as proposed rectangular microstrip array antenna-1 (PRMAA-1). Fig.2 shows the geometry of PRMAA-1.

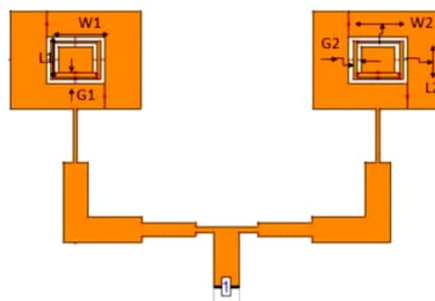


Fig 2: Geometry of PRMAA-1

Then further study is continued to improvement of antenna parameters, radiating patch elements are etched with ring coupled rectangular slot and horizontal slot. The dimensions of the ring coupled rectangular slot are  $(L1, W1, G1) = (7mm, 7mm, 0.9mm)$ , and horizontal slot are  $(L3, W3, G3) = (7mm, 0.5mm, 0.9mm)$  respectively. It is named as proposed rectangular microstrip array antenna-2 (PRMAA-2). Fig.3 shows the geometry of PRMAA-2.

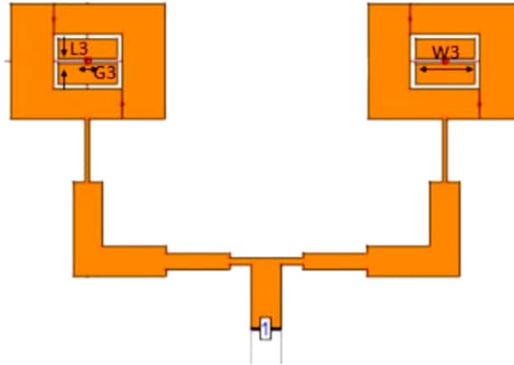


Fig 3: Geometry of PRMAA-2

Further continued parametric study is to improvement of antenna parameters, radiating patch elements are etched with ring coupled rectangular slot and H shaped slot. The dimensions of the ring coupled rectangular slot are  $(L1, W1, G1) = (7mm, 7mm, 0.9mm)$ , and H shaped slot are  $(L4, L5, W4, W5) = (4.5mm, 0.5mm, 3.75mm, 0.75mm)$  respectively. It is named as proposed rectangular microstrip array antenna-3 (PRMAA-3). Fig.4 shows the geometry of PRMAA-3.

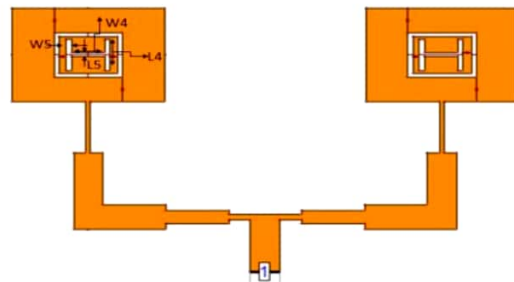


Fig 4: Geometry of PRMAA-3

Further continued parametric study is to improvement of antenna parameters, radiating patch elements are etched with ring coupled rectangular slot and S shaped slot. The dimensions of the ring coupled rectangular slot are  $(L1, W1, G1) = (7mm, 7mm, 0.9mm)$ , and S shaped slot are  $(L6, L7, W6) = (2mm, 0.45mm, 4mm)$  respectively. It is named as proposed rectangular microstrip array antenna-4 (PRMAA-4). Fig.5 shows the geometry of PRMAA-4.

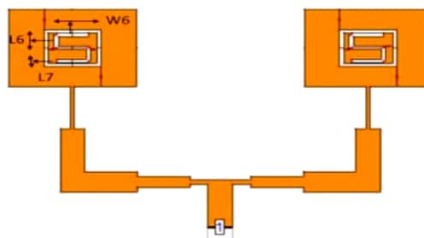
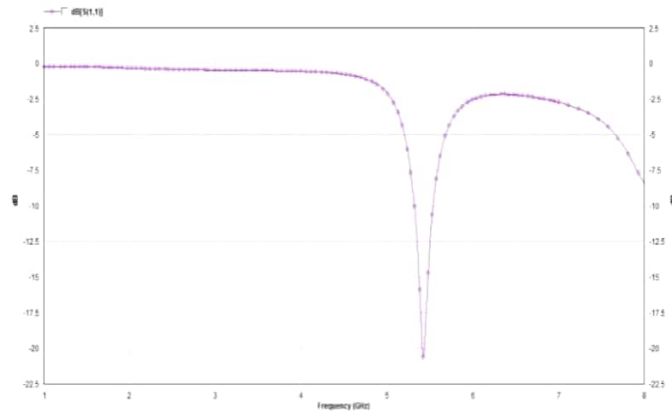


Fig 5: Geometry of PRMAA-4

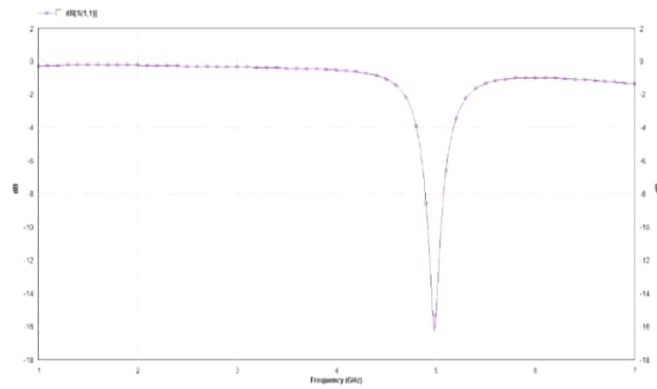
## RESULTS AND DISCUSSIONS

Fig.6 shows the return loss characteristics of CRMAA. The antenna resonates at 5.95 GHz. The return loss obtained at the resonating frequency is equal to -20.2dB and bandwidth equal to 145 MHz is obtained.



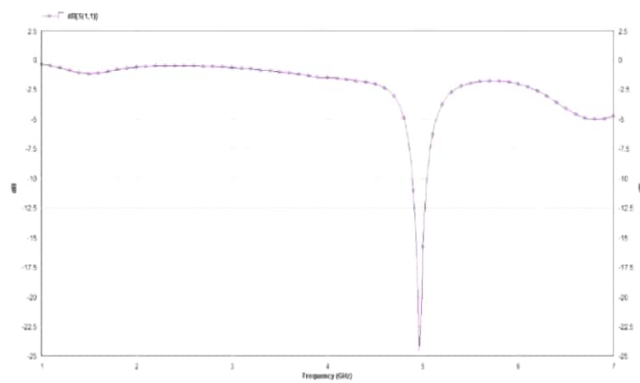
**Fig 6:** Return Loss characteristics of CRMAA

Fig.7 shows the return loss characteristics of PRMAA-1. The antenna resonates at 4.96 GHz. The return loss obtained at the resonating frequency is equal to -23.97dB and bandwidth equal to 150.71 MHz is obtained.



**Fig 7:** Return Loss characteristics of PRMAA-1

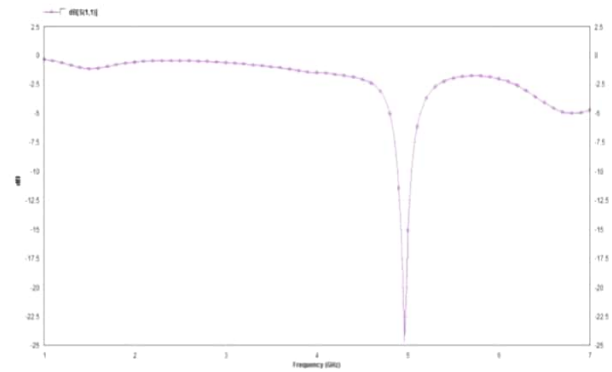
Fig.8 shows the return loss characteristics of PRMAA-2. The antenna resonates at 4.96 GHz. The return loss obtained at the resonating frequency is equal to -24.56dB and bandwidth equal to 150.81 MHz is obtained.



**Fig -8:** Return Loss characteristics of PRMAA-2

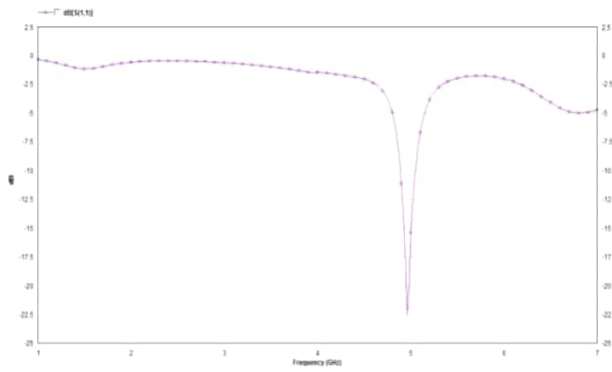


Fig.9 shows the return loss characteristics of PRMAA-3. The antenna resonates at 4.96 GHz. The return loss obtained at the resonating frequency is equal to -24.62dB and bandwidth equal to 152.02 MHz is obtained.



**Fig -9:** Return Loss characteristics of PRMAA-3

Fig.10 shows the return loss characteristics of PRMAA-4. The antenna resonates at 4.96 GHz. The return loss obtained at the resonating frequency is equal to -22.52dB and bandwidth equal to 158.4 MHz is obtained.



**Fig -10:** Return Loss characteristics of PRMAA-4

In this work PRMAA-4 supports highest bandwidth of 158.4MHz with return loss of -22.52dB compared to conventional antenna. All the results of the CRMAA and PRMAA-1, PRMAA-2, PRMAA-3, PRMAA-4 are summarized in Table 2.

**Table 2:** Summarized results of the CRMAA and PRMAA-1, PRMAA-2, PRMAA-3, PRMAA-4

Parameters	CRM AA	PRMA A-1	PRMA A-2	PRMA A-3	PRMA A-4
Resonating Frequency (GHz)	5.95	4.96	4.96	4.96	4.96
Return Loss (dB)	-20.2	-23.97	-24.56	-24.62	-22.52
Bandwidth (MHz)	145	150.71	150.81	152.02	158.4

## CONCLUSION

In this work the highest bandwidth obtained is 158.4MHz by using ring coupled rectangular slot along with S shaped slot named as PRMAA-4, as compared to CRMAA, PRMAA-1, PRMAA-2 and PRMAA-3. The proposed PRMAA-4 is lightweight, low profile, planar configuration, low fabrication cost and ability to be integrated with other microwave circuits. This antenna gives an improved system performance in terms of bandwidth and return loss. These features make PRMAA-4 ideal for wireless communication applications.

## REFERENCES

- [1]. Robert. J, "Microstrip Array Technology", *IEEE Transactions on Antenna and Propagation*, vol. AP-29, No.1, 1981.
- [2]. David. M. Pozar, "Microstrip Antennas and Arrays on chiral substrates", *IEEE Transactions on Antenna and Propagation*, vol. AP-40, No.10, 1992.
- [3]. A. Balanis, "Theory of Antennas", *IEEE Transactions on Antenna and Propagation*, vol. AP-41, No.9, 1993.
- [4]. Constantine A Balanis "Antenna Theory: Analysis and Design", 3rdEdition, 2005 John Wiley and sons, Inc. Hoboken, New Jerray.
- [5]. Kraus John D, Marhefka Ronald J, khans and Ahmed S, 2006. Antennas and wave propagation, TMH Education private limited India.
- [6]. Anuj Mehta International Journal of Scientific and Technology Research Volume 4, Issue 03, March 2015.
- [7]. Shera Prabjyot Singh, Ashish Singh, Deepak Upadhyay, Sunilkumar Pal, Mahesh Munde "Design and Fabrication of Micro strip patch Antenna at 2.4 GHz for WLAR Application using HFSS". IOSR Journal of Electronics and communication Engineering (IOSR – JECE) e-ISSN:2278-2834, P-ISSN:2278-8735, special Issue-AETM'16.
- [8]. Ansoft Corporation, HFSS users guide, version 10 and 12. Ansoft Corporation, pittsburg, 20.,
- [9]. Nandini ammanagi, Rahul Khadilkar, Akash Harwani, Disha Budhlani, Disha Dembla, Comparison of the performance of Microstrip Antenna at 2.4 GHz using Different Substrate Materials International Journal of Engineering and Advanced Technology (IJEAT) ISSN 2249-8958, Volume-3, Issue-4, April-2014.

# IJIPAR

## INTERNATIONAL JOURNAL OF INNOVATIVE PRACTICE AND APPLIED RESEARCH

A Peer Reviewed, Refereed Scholarly Quarterly Research Journal

Volume - 12 | Special Issue No - 2 | June - 2022 | Impact Factor - 5.2

ISSN No : 2349 - 8978

*Special Issue on*

**“SWASTHA BHARAT IN INDIA : PROBLEM – PROSPECTS AND WAY  
FORWARD”**

*Special Issue Editor*

**Dr. KIRAN G.N**

*Assistant Professor, Department of Studies in Physical Education & Sports Science,  
KSAWU, Vijayapura*

Published by

**HALDIA INSTITUTE OF MANAGEMENT**

**ICARE Complex, Hatiberia, Haldia,**

**Purba Medinipur,**

**West Bengal - 721657, India**

Published by

**HALDIA INSTITUTE OF MANAGEMENT**

**ICARE Complex, Hatiberia, Haldia,**

**Purba Medinipur,**

**West Bengal - 721657, India**



### **Managing Editorial Board**

**Dr. Lakshman Chandra Seth**, *Chairman, ICARE, Haldia, West Bengal.*

**Dr. Amiya Bhaumik**, *Vice Chancellor, Lincoln University College, Malaysia*

**Dr. Desti Kannaiah**, *James Cook University, Singapore*

**Dr. Hathairat Ketmaneechairat**, *King Mongkut's University, Thailand*

**Dr. Jeffrey Lawrence D' Silva**, *Universiti Putra Malaysia, Malaysia*

**Dr. Jismon Jacob**, *Managing Director, Absol Solutions, Germany*

**Dr. Montri Kunphoommarl**, *Naresuan University, Thailand*

### **Special Issue Co-Editors**

**Prof. D.M. Jyoti**, *Dean, Faculty of Education, KSAWU, Vijayapura*

**Dr. Rajkumar P. Malipatil**, *Chairman, DOSPESS, KSAWU, Vijayapura*

**Dr. Hoovanna Sakpal**, *Associate Professor, KSAWU, Vijayapura*

**Dr. Srinivas**, *Associate Professor, KSAWU, Vijayapura*

**Dr. Jyothi A. Upadhye**, *Associate Professor, KSAWU, Vijayapura*

**Dr. Hanumanthayya Pujar**, *Assistant Professor, KSAWU, Vijayapura*

**Smt. Ashwini K.N**, *Assistant Professor, KSAWU, Vijayapura*

### **Peer Review Committee members**

**Dr. Abhijan Dutta**, *NIT, Durgapur*

**Dr. Bagachi.K.K**, *North Bengal University, Darjeeling. West Bengal*

**Dr. Bandyopadhyay.M.N**, *Director HIT, Haldia & Ex-Director, NIT Calicut, Kerala*

**Dr. Bandyopadhyay.S.N**, *Director HIM, Haldia, West Bengal*

**Dr. Banerjee.S.K**, *Lincoln University College, Malaysia*

**Dr. Premakumara.G.S**, *Dept. of Economics, University of Mysore, PG Centre, Mandya*

**Dr. Komaraiah.J.B**, *Banaras Hindu University, Varanasi, Uttar Pradesh*

**Dr. Lakshminarasaiah**, *Rayalaseema University, Kurnool, Andhra Pradesh*

**Dr. Mallaiah .L.C**, *Babasaheb Bhimrao Ambedkar, Central University, Lucknow*

**Online Link : <http://jesdrf.com/journals/issue2.pdf>**

**© 2022, Selection, Editors, Committee Members & Authors**

All rights reserved. No part of this Journal may be reproduced or transmitted in any form or by any means of electronic or mechanical including photocopy, recoding or any information stored in a retrieval system, without the prior written permission of the publisher.

The responsibility for the facts or opinions expressed in the Journal is entirely of the authors. Neither the publisher, committee members nor the editors are responsible for the same.



## CONTENTS

Sl. No.	Articles	Name of the Author	Page Nos.
1	Emerging Technology in Promoting Physical Activity and Health: Challenges and Opportunities	Dr. Jose Mathew	1
2	Pandu - Nutritional Anemia in Children	Dr. Annapurna Patil & Dr. Vijayalaxmi Mallannavar	10
3	Quality Physical Education: A Sustainable Approach to Combat Non-Communicable Diseases	Dr. Santosh M. Dandyagol & Dr.Jyoti .A. Upadhye	14
4	Sustainable Development and its Impact on Aatmanirbhar Bharat in India	Dr. Suresaha.K.P	17
5	Emotional Maturity and Internet Addiction	Basavaraj Kumasi & Ravindra Gouda S M	21
6	A Comparative Study between Core Stability and Trunk Extension to Avoid Lower Back Pain among Rifle Shooters	Mahesh G	25
7	Modern Technological Advancements in the Contemporary Period to Increase Sports Performance	Namburi Ramya	29
8	Mechanical, Materials and Electrical Engineering Applications to Sporting Scenarios	Sathish .B.P	32
9	Coverage of Women Sports News – A Comparative study of Kannada and English Newspapers	Sushma Pawar & Dr. Tahmeena Nigar Sultana	36
10	Impact of IPL on increasing subscription of Live streaming platforms: A Case Study of Bangalore City	Philomina & Dr. Tahmeena Nigar Sultana	44
11	A Study on the Indian Armed Forces and their heroics in the Sporting Arena	Uday Kumar M	55
12	A Study on Aerodynamics of Sporting Scenarios	Manjanna B P, Dr. A. Anbanandan & Dr. N.D.Virupaksha	61
13	Effect of Yogic Practices on Physical Variable of School Students	Dr. Anjanabai Sharanappa	68
14	Sports Opportunities for People with disabilities	Anitha S.M	71

15	Women Management Positions in the Sport Industry in Global Era: Problem and Prospects	Dr. C.M.Mathapati	76
16	Assessment of Somatic Status of Hostel Girls (21-24 Yrs) of Karnataka State Akkamahadevi Women's University, Vijayapura	Savita Hulamani & Nataraj Durgannavar	83
17	An Overview of Sports Nutrition and Its Importance	Dr. Anjan kumar B J	87
18	A Study on Biophysical Investigation of Sports Performance	Dr. Harish P M, Dr. N.V.Hemanth & Manjanna B P	94
19	A study on Sports for Individuals with a Physical Disability	Dr. Subramani. N	99
20	Benefits of Yoga on Sports Performance	Dr. Chandrashekar C	105
21	Comparison of Physical Fitness Components between Urban and Rural Female Students	Dr.Kasturi Rajaput & Geeta Rajaput	109
22	Effect of Plyometrics Training on Self-Confidence of Volleyball Players	Dr. Mahadevi Wali	112
23	Influence of Plyometric Training Programme on Leg Explosive Power among Inter-Collegiate Level Men Basketball Players	Dr.Sadashiva Kotyal	115
24	A Comparative study of the Aggression between Individual and Team Game Inter-Collegiate Women Players of Karnataka State Akkamahadevi Women's University	Dr. Srinivasa	118
25	A Study on Market Survey, Acceptance and Consumption Level of Brown Rice (Oryza sativa l) in Vijayapura District	Gangubai Abbihal & Savita Hulamani	126
26	A Study of Achievement Motivation and Anxiety among Kabaddi Players	Dr. Hanumanthayya Pujari	130
27	Physical Fitness and Playing Ability of Hockey Players	Jagadeeshaiah.I.C & Dr.A.Palanisamy	134
28	The Effect of Yogic Exercises and Aerobic Exercises on Psychological Variables of Secondary School Children	Jayamma & Dr. K.P. Martin	137
29	Effect of Yoga on Selected Physical Fitness Component of Football Players	Dr. Jyoti. Awati (PDF)	141
30	A Study of Kabaddi Playing Ability of Aggression Variable among State Level Women Kabaddi Players	Jyoti Savalagi & Dr. Jyoti. A. Upadhye	144

31	Implications of Meditation and Pranayama on Female Athletes Physiological Variables	Dr.Kiran G.N	147
32	A Comparative of Physical Fitness among Athletes and Non-Athletes	Mahadevi.S.Injangerei	151
33	Effect of Yogic Training on Selected Speed among Football Player	Dr.Mahananda Sharanappa .H & Dr.Jyoti .A. Upadhye	153
34	Assessment and Evaluation of Nutritional Requirements To Improve Performance Among Young Athletes	Anandavelu.T.M & Dr. Prasanna.B.K	156
35	Role of Sports Programs of Kannada 24x7 News Channels in Promoting Sports Activities among Youth: a study of Udupi City	Sandeep & Prof. J.M.Chandunavar	1622
36	Effect of Bramary Pranayama Practice on systolic and Diastolic Blood Pressure of Sports Persons	Sreedhara Yadava .G.V & Dr. Shreenivas Harikanth	171
37	Polymeric training and its Benefits	Nagaraja.D & Virupaksha.N.D	176
38	Impact of Selected Anathropometric Variables on Skill Performance of Runners	Nagaveni.T.H & N. Chandrappa	178
39	Nutritional Status of Tuberculosis Patients: A Cross Sectional Study in Vjayapura District of Karnataka	Nataraj A Durgannavar & Savita Hulamani	181
40	Coping Strategies of Sports Persons	Nawaz Basha .C & Virupaksha .N.D	186

# COPING STRATEGIES OF SPORTS PERSONS

NAWAZ BASHA .C\* & VIRUPAKSHA .N.D\*

## Introduction:-

Many times during a game, athletes of all levels and from all sports must not only fight physical exhaustion, but also psychological pressure and bad sentiments. Stress is an unavoidable aspect of life for everyone. It can be brought on by both positive and negative circumstances, and there are numerous strategies to deal with it. In this paper, we'll look at the ins and outs of coping, as well as what coping tactics look like and how to rely on others to make coping efforts more effective. Coping refers to the athlete's conscious and effortful cognitions and activities that he or she employs to deal with the perceived demands of a circumstance. Sport and exercise psychologists are interested in coping because athletes are continuously under pressure to succeed. Coping skills in athletes are essential predictors of performance; these skills should be taught, exercised, and improved because they have a direct impact on athletes' personal and professional lives. When it comes to performance athletes' mental health, they may encounter issues relating to their own skills and performance that overlap with everyday issues. Athlete performance is influenced by a variety of factors, in addition to physical, technical, and tactical training. A strong mentality and stress resilience can frequently distinguish between equal opponents. An important part of sports performance is the capacity to perform well under severe stress.

**Coping:** - Coping is a major component in the transaction stress process; It defined as an "individual's ability to cope with his/her environmental stimuli and personal responses". The ability to cope with stress-related reactions depends on the individual. Coping has been also defined as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person". In sports, athletes frequently deal to alleviate undesirable nervousness or performance worries.

"The ability to perform successfully under pressure is a crucial aspect of sport performance." (Mesagno, 2010). A major problem for elite athletes is to deal with the feeling of 'choking' under pressure. What causes stress varies from athlete to athlete, since it is governed by one's perception of a situation's expectations, as well as their ability to handle associated obstacles and challenges. When an athlete believes they lack the "required" tools to adequately cope with a problem, unpleasant sentiments may occur. Coping skills kick in at this point and can be quite beneficial in stress management. It's important to keep in mind that not every athlete will find the same situation unpleasant. Two athletes can have comparable experiences but react to stress in totally different ways. This is because what matters most are the athlete's perceptions of available resources/abilities and the threat level of the situation. This will certainly vary from sports person to sports person.

## Coping strategies of Sports persons (Athletes):-

Coping strategies are being used as a way of eliminating an athlete's level of stress and arousal before a game (Morgan, 2010). Coping refers to conscious and effortful cognitive and behavioral efforts to deal with the perceived demands of a situation. Every athlete uses coping mechanisms, but some athletes aren't aware of when or how they use them. This is

---

\* Research Scholar, Dept, of Physical Education, Kuvempu University, Jnana sahyadri, Shankaraghatta, Karnataka

\* Director, Dept, of Physical education, Kuvempu University, Jnana sahyadri, Shankaraghatta, Karnataka



Because, unlike coping methods, coping actions are frequently automatic; the individual does not always make a conscious decision about how they address situations. They are more than likely to engage in unconscious and instinctual acts in order to escape stress or relieve unpleasant emotions. As a result, these activities might be beneficial or harmful. Negative coping strategies, on the other hand, are generally maladaptive and include avoidance, risk taking, and aggressive or damaging acts in sports.

The fundamental difference is that a coping technique usually entails a more deliberate and direct approach to difficulties. While confronted with a stressful or unpleasant scenario, or when striving to change one's behavior in such a situation, it could be a single action, a sequence of actions, or even a thinking process.

Coping strategies used are self-talk, mental imagery or visualization, pattern breaking or breaking bad, positive reframing, regularly practice self-soothing techniques, practice good sleep hygiene, maintain a balanced diet, and give yourself regular breaks.

1. **Self-talk:** Hardy et al. (2011) defined self-talk as “a dialogue we have with ourselves, sometimes spoken, sometimes engaged in internally.” Self-talk is often used to motivate and enhance confidence levels in athletes prior to or during a sporting situation (Hall, 2009). Self-talk is the process of which an individual may guide him/herself to accomplish a goal. Whether or not the goals are specific or broad, all goals are important to keep in realistic, attainable, measurable and specific. It is the internal discussion you have with yourself. Your subconscious mind influences it, and it reveals your thoughts, beliefs, questions, and ideas.
2. **Mental imagery or Visualization:** - Imagery is a form of cognitive restructuring. The idea is that athletes “re-interpret previous negative experiences by seeing the ‘silver lining’ in the cloud.” (Shaw, 2005). Mental imagery, often known as visualization or mental rehearsal, is a widely used approach. Athletes utilize this strategy to become comfortable with their competitive surroundings, a tough pattern of play, or even to visualize the course route multiple times. Mental imagery, in particular, can be utilized to eliminate negative ideas, allowing you to tunnel and focus just on positive prospects. Some athletes become overly concerned with their anxiety or nervousness, maybe focusing only on a potential blunder or the worst-case scenario for their performance. This is frequently something that cannot be adjusted, such as their opponent's strength or the track's condition. Instead, athletes should try to focus on ways to enhance and/or maintain their current strong performance abilities, thereby shifting their negative mindset to a more positive facilitative one.
3. **Pattern breaking or Breaking bad:** - When an athlete's mental state becomes bad owing to uncontrolled mental imagery, 'pattern breaking' routines are utilized. A 'pattern breaker' is a statement or phrase that an athlete can say to themselves or that their coach or significant other can say to them out loud. Whatever works best for you is the greatest option. There is no such thing as the "correct" word, but this example is one of my favorites for drawing your attention away from unpleasant ideas. Consider your sport's role model and what they would do if they were in your position. Instead of considering their 'superior' abilities, consider how they would react if they were in your place.
4. **Positive reframing:** - Positive reframing involves thinking about a negative or challenging situation in a more positive way. This could involve thinking about a benefit or upside to a negative situation that you had not considered. Alternatively, it can involve identifying a lesson to be learned from a difficult situation. Finding something to be grateful about in a challenging situation is a type of positive reappraisal. For example, after a break-up you could think about the opportunities to meet new people, the things you learned from the relationship, and the gratitude you feel for the time you spent with the person.

5. Regularly practice self-soothing techniques:-Consider your five senses to gain insight into how you can provide comfort for yourself. What has proven to be effective for you. The extensive list of possible techniques to self-soothe includes listening to music, taking a bath, watching a movie, getting a massage, relaxing, and yoga. Make an attempt to include these tactics into your everyday routine because they will assist you in dealing with stress and preventing further stress.
6. Practice good sleep hygiene: - One of the easiest strategies to set you up for better sleep is to pay attention to sleep hygiene. Strong sleep hygiene entails a sleeping environment as well as daily routines that promote regular, uninterrupted sleep. Having a consistent sleep schedule, a comfortable and distraction-free bedroom, a soothing pre-bed ritual, and developing healthy behaviors during the day can all help you achieve optimal sleep hygiene.
7. Maintain a balanced diet:-Many people find that when their minds are full of anxieties and pressures, they fall into the habit of "mindless eating" (eating whatever is available at the time, the vending machine phenomenon or wanting carbs and sweets for a momentary but unsustainable surge of energy). Maintaining a balanced diet of foods that give a more consistent supply of energy (rather than a sugar spike) can be a fantastic first line of defense against stress's negative effects. It will also assist you in maintaining a connection to your long-term objectives.
8. Give yourself regular breaks:-Allow your thoughts to relax and rearrange. Taking breaks, contrary to many people's first reactions when they're stressed, makes you more productive, energetic, and more ready to face the problems ahead of you.

#### CONCLUSION:-

Coping is a complex topic that involves athletes' stressor assessments, objectives and values, emotions, beliefs, and identity, as well as their resources and ability to deal with the demands of sport. Because of the complexity of the coping process, various antecedents and consequences must be considered. Athletes' coping skills evolve through time and can be enhanced through interventions and training, making this a critical area for improving athletes' performance and overall experience in sport.

#### References:

- Shaw, D. Gorely, T. & Corban, R., 2005. Sport and exercise psychology.
- Hall, C., Munroe-Chandler, K., Cumming, J. & Law, B., 2009. Imagery use and observational learning use and their relationship to sport confidence. *Journal of sport sciences*, 4(27), pp. 327-337.
- Tod, D. Hardy, J. & Oliver, E., 2011. Effects of self talk: A systematic review. *Journal of Sport and Exercise Psychology*, Volume 33, pp. 666-687.
- Morgan, D. & Birrer, G., 2010. Psychological skills training as a way to enhance an athletes performance in high intensity sports. *Scandanavian journal of science & medicine in sports*, Volume 20, pp. 78-87.
- Mesagno, C. Mullane-Grant, T., 2010. A comparison of different Pre-performance routines as possible choking interventions. *Journal of applied sport psychology*, Volume 22, pp. 343- 360.
- Emotion-focused coping. (n.d.). In APA Dictionary of Psychology online. Retrieved from <https://dictionary.apa.org/emotion-focused-coping>.
- Problem-focused coping. (n.d.). In APA Dictionary of Psychology online. Retrieved from <https://dictionary.apa.org/problem-focused-coping>.