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Challenges Of Work From Home During Covid-19: IT Sector

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Abstract

At this time, the whole world is experiencing the drastic impact of covid-19. There is nothing certain about how long the effect of this pandemic will end. Proper work from home is come enforced after the covid-19 pandemic. Now a day's work from home concept is new for most of the employees in all sectors, but after this pandemic, work from home is the only option left for all the organization. As all employees are doing their job from home, and taking experience of work from home, this study attempts to find out the challenges of work from home that employees are experiencing due to covid-19. This study conducted on IT Sector employees. The major purpose of this study is to highlight the challenges and experience of employees and what is the employee's opinion about work from home. This study found few challenges these are Internet Connectivity, too many distraction at home and no proper communication with co-worker. This study also found that employees point of view about willingness toward work from home is totally based on employee's satisfaction.

Keywords: *Covid-19 Pandemic, Work from Home, Challenges, Experience of employees*

Introduction

The idea of workplace is moving from thought of the physical location to a perspective. Physical area of a working spot has been generally losing its significance because of rapid extension of information technology. Current working life adapted the arrangement of work from home. It is also known as remote work and telecommuting. Work from home is described as a demonstration of completing work undertakings essentially at home.

With the absence of physically monitoring, employees have more cautious in how, and what situations and when they complete a assigned work. This additionally builds flexibility among the employees over execution of task. Work from home empower more self rule in work, which is likely associated with more efficiency and productivity. A significant drawback of work from home is that diminished control by colleagues or the subordinates. The work avoidance is the outcome when somebody's work inadequately monitored. Work from home will be useful when there is an issue to go to office and work should proceed.

Covid-19 changed each and everything overnight. The epidemic of corona virus and lockdown led to essential economic disturbance around the whole world. Millions of employees of all various sectors are asked self quarantine. Lockdown and social distancing become mandatory for all of us. Till now there is no cure to prevent from this virus, so the only option is left to maintain social distancing and focus on health. All the companies and industries around the whole world have no other alternative left than work from home so all of the sectors have been pushed to do their work from home. After the covid-19 pandemic, the motive of work from home framework changed drastically before this pandemic people usually took unfinished task at home so that beside the work they also spend some time with their family. With the help of work from home system, many companies keep their business continues.

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In this modern technical world, work from home is nothing new but after this pandemic it becomes quite common in a daily routine. Many company and organization already practicing work from home before the outburst of covid-19. The advancement in information technology has made it exceptionally simple to complete the assign tasks outside of the working place as a result of good internet availability just as reasonable value. This made remote working easier just as attainable to perform tasks and likely diminished the costs of providing these such arrangements. Work from home provide to employees greater chance to concentrate on their work. The normal face interaction with the co- workers significantly less, when working endlessly from office.

During this lockdown the main challenge for employees who are doing work from home is same performance in term of productivity and quality when they worked from their respective offices. The majority of the IT companies included work from home for their leave strategy of employees so as to increase the efficiency and productivity.

Objective Of The Study

- To know the point of view of employees toward work from home
- To identify the challenges which employees are facing during work from home

Review Of Literature

Mirchandani, (2000) revealed that the impact of stress is giving adverse effect because they are experiencing stress and not giving proper time to their families. Some employee's have opinion that when they did their work in offices then they easily managed balance between work and family.

Crosbie and Moore, (2004) concluded that work from home is a very useful initiative to balance their working life that promotes the improvement the conditions of work life balance. With the help of observations and interviews it is found that work from home system improve the employee's capability to handle their work and family.

Amabile and Kramer, (2013) found that work from home is quite comfortable and it helps employees to balance their life and also differentiate their job work and routine work. This study found that work from home helps to improve employee's productivity, save time for family, finish work on time.

Beauregard, (2013) revealed that employees performance depend upon their good work life balance. So it found that work from home employees miss an emotional support and informal integration from their office employees and subordinate.

Go, R., (2016) found many dark side of work from home, it create massive gap in communication between subordinates and superior. During the webinars, a hug cultural difference experiencing by the employees so employees usually don't like work from home that's much. This study highlight disadvantage of work from home such as cultural differences, communication difficulties, less reliability and retention, difficult to maintain accountability, issues with payment, low of productivity, security concern.

Richardson and writer (2017) concluded that work from home is the outcome of the advanced technology which is the outcome of internet usage and web conferencing, mailing which help to make work easier. This study found positive and negative sides of the work from home. Employees start their work from their convenience this is the biggest positive side of the work from home. Delay in work and late work submission are the negative side of the work from home.

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Riyanto *et al*., (2019) revealed that work form is a practice to deal with work life balance including flexible working hours, more family time, and proper childcare and financial aid.

Song and Gao, (2019) found that due to covid-19, government officially announced the lockdown so there is not possible to do work in office so that's employees are experiencing to do their work at home. Now employees are noticing that it is taking long period of time. Employees are facing the significant environmental changes because there is huge difference between office and home environment. So the comparison between to do work in office and home, working from home will be more unpleasant so usually people don't like that much to do their work from home.

Putro, Riyanto, (2020) concluded that because of this pandemic, companies allowed their employees work from home because there is no surety that how much time takes this global pandemic. The motive of this study to analyze the impact of stress level of employees those are working from their home and show. With the help of online discussion and interview this study found that work from system is more stressful that work in office. Employees shared their problems that's they are facing due to work from home such as home duty, children study, cooking, high workload and work task overload etc .

Djalante *et al.,* (2020) revealed that most of the employees have desire to do work at least once in a week. Few employees shared their point of view that if they get the opportunity to do their work from home so they can get better flexibility and easily avoid face to face contact with their superior, more time with family and less stress. After the covid-19 work from home became very common and took place in every employee's life.

Scott, (2020) concluded that mostly people set a proper goal to do their work at home and balance their life and beside this some employees who experience many issues while they work from home and employees are facing high stress problems. Too many distractions, difficulties to set proper schedule, lack of structure and focus are considered the reason of stress while work from home.

Abidah *et al.,* (2020) revealed that before this pandemic employee have housemaid for help the housework now they are managing their office work and housework and apart from this they are helping in their children online educations and help in their assignments. Employees responded that they are not able to give proper time to their children and balance their office work and house work properly.

Shareena and Shahid, (2020) revealed the experience of employees during work from home as compared to work from office. This study identified that willingness to do work from home is totally depend upon some conditions such as peaceful environment, comfortable space for work, pressure of children at home, internet connectivity etc. mostly employees responded that they don't even like to work from home..

Mohammad , (2020) concluded that when we talk about work life balance then it considered some facts like job, career, life style health, family, friends and home maintenance. In this time, mostly employees doing working from home due to crises of ncovid-19 lockdown period so the issue of work life balance arise. The common views of employees regarding work from home are that work from home very convenience and relaxed. Flexible working hours, quality family time, stay away from the co- worker disturbance and office gossips are the main reasons that they prefer to do work at home . Researcher identified some guidelines which help to balance their work in home properly such as adopt self care practices in morning, set a dedicate place for work at home, follow daily schedule and set small and urgent task first, set your priorities clear, be mindful and focused, turn off computer after work etc .

Routley, (2020) revealed that, this is a fact that everyone value freedom of their choices. Most of the employees would like to work from their home of their whole life. There are some positive sides of WFH such as flexible schedule, working from any location, time with family etc. there are some challenges

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which are also facing by the employees these are collaborating and communication, loneliness, different time zone from team, distraction at home, reliable Wi-Fi. This study also found that some obstacles to implementing a remote work such as non flexible working culture, data security, privacy, technology requirement, lack of awareness about remote learning etc. most of the time managers and higher authorities main concern is no to reduce productivity and focus of employees .

Brown, (2020) there are consider few challenges of work from home like lack of in- person collaboration with colleagues, more interruption, take care of work and children together, high workload, technology despondency. This study always identified some advantages of work from home such as reduce commuting time, more time to balance work and family both, quality time with family, increased productivity, flexible hours etc.

Deorah, (2020) revealed that most of the time work from home creates difference between the personal and professional lives. Due to this pandemic work from home comes en forced. This article highlight some benefits of WFH like employees are to get infected and maintain social distancing properly, management ensure employees for digital tools and helping to finish task on time . Mostly organizations are afraid to reopen their offices because of the risk of corona virus. This study analyzed organization and individuals both should need to come together and give best efforts to improve productivity and performance for the beneficial of the both parties.

Research Methodology

Sample Size

In this study, the sample size is 70. This study totally depends on the responses of 70 employees those are working from their home during covid-19 pandemic. The research area is IT Sector.

Data Collection

Primary and Secondary data collection method used in this research. With the help of online survey and telephonic interview primary data collected and through journals, articles, web sites secondary data collected. Data collection has been done thorough online survey to IT companies HCL and TCS.

Statistical Tools and Techniques

In this research, to analyze the statistical tools and techniques percentage and Chi Square Test applied and with the help of SPSS Software this test perform.

Data Analysis And Findings

Demographical Representation of the Data

Gender			Age			Marital Status		
No. of Responses		**%**	No. of Responses		%	No of Responses		%
Male	42	60%	20 to 25 Age	18	25.7%	Single	30	42.8%
Female	28	40%	25 to 30 Age	28	40%	Married	40	57.1%
			30 to 35 Age	16	22.8%			
			35 to 40 Age	8	11.4%			

In this study, 60 % of male employees and 40 % of female employee's responses included.

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In Age factor, employees age categories in 4 groups. 25.7% employees are from 20 to 25 years age group. 40% employees are from 25 to 30 years age group. 22.8% of employees belonging to the age group of 30 to 40 years. 11.4% employees belong to 35 to 40 years age group.
This study revealed that 42.8% (n = 30) employees are single and 57% (n = 40) employees are married.
In this study, Overall 70 employees of IT Sector responded in which 38 employees are from HCL and 32 employees responded from TCS Company.

74.2% (n = 52) employees responded that this is the first experience of the work from home and 25.7% (n = 18) responded that they have already experience work from home.

48 % employees (n = 34) responded that they are agree and willing to work from their home. 15% (n = 11) employees strongly agree but 22 % (n = 16) employees disagree to work from home and 12% (n = 9) employees strongly disagree.

It is found that 65 % (n = 46) employees have dedicated workplace where they can work at home but 34% (n = 24) employees responded that they do not have a dedicated workplace.

7 % (n = 5) employees responded that they always found that they are not able to balance their work life and 14% (n = 10) responded often they are not able to balance their work life. 50 % (n = 35) employees responded that sometimes they feel that they are not able to balance their work life. 17 % (n = 12) employees responded rarely they feel that and 11% (n = 8) employees responded never.

It is found that 44 % (n = 31) employees responded that sometimes they feel that they are unable to spend enough time with their family.

Results Of Data Analysis And Hypothesis Testing

H1: Point of View of employees about willingness toward work from home is dependent on employee's satisfaction.
Chi square test applied to test the hypothesis. With the help of chi square test it is find out that employees point of view of employees about willingness to work from home is dependent on employee's satisfaction.

How satisfied are you with your current work from home arrangement? * I am willing to work from home. Cross tabulation

		I am willing to work from home		Total Employees
		Yes	No	
How satisfied are you with your current work from home arrangement?	Very Satisfied	9	4	13
	Satisfied	29	7	36
	Dissatisfied	4	10	14
	Very Dissatisfied	3	4	7
Total		45	25	70

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In this table, it is found that 13 employees very satisfied to work from home and they also are willing to do work from home. Total 36 employees responded that they are satisfied and willingness to work from home. 14 employees show their dissatisfaction and 7 employees responded that they are very dissatisfied. This study found that 45 employees are willing to work from home and 25 employees responded that they do not want to work from home.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.467[a]	3	.004
Likelihood Ratio	13.418	3	.004
Linear-by-Linear Association	6.193	1	.013
N of Valid Cases	70		
a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is 2.50.			

With the help of Chi square test this hypothesis has been tested. From this test, it is found that the p value is 0.004, which is less than 0.05, so there is a significant relationship between these two variables. So null hypothesis rejected, thus we concluded that the point of view of employees about willingness work from home is totally depend upon employees satisfaction.

Identify the Challenges Which Employees are Facing during Work from Home

	Challenges of Work From Home	Employees Response	Percentage	Rank
1	Too many distraction at home	17	24 %	2
2	Communication with co-worker is hard	15	21%	3
3	Keeping a regular schedule	4	6%	5
4	I am sick and healing others who are sick	2	3%	6
5	Internet Connectivity	22	31%	1
6	I don’t have access to the tool or information I need	2	3%	6
7	General anxiety about the impact of covid-19	8	12%	4

It is found from this table that the challenges of work from home that employees are facing during covid-19 period. With the help of this research, it is found that employees most of the employees experience many challenges. In these challenges 31% (n =22) employees responded that they are facing huge internet connectivity problem. Internet connectivity is one of the big challenge during work from home that why it consider it in rank 1. Second big challenge this study found that too many distractions at home. 24% (n = 17) employees responded that there is lots of distraction at home. The third biggest challenge for employees is to communication with their co-worker. 21% (n = 15) employees agree that its hard o communicate with their co- worker. 12% (n = 8) employees responded that they have anxiety about the impact of covid-19. 6% (n = 4) employees agreed that it is hard to keeping a regular scheduler at home. 3% (n = 2) employees responded that they are sick and healing others who are sick and they don’t have access to the tool or information I need. Some other challenges employees shared these are show system , company should give dongle , sitting posture problem, back pain issues, too much work to do, some of

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the time they are spending more than 12 hours a day. these are the challenges that employees experience during work from home.

Conclusion

Work from home is turning into a most popular and convenient nowadays and it also considered easy way to do their job without any barrier, those barriers which are occurring due to this pandemic. Due to lockdown, IT companies moved their work online because that is the condition of demand. When we talk about work from home, everyone wants to do job from their living place because it is quite relaxed to balance their routine life in both ways personal and professional. Those employees who have very hectic schedule in their offices, sometimes they wanted to get to opportunity to do their job from their home, but some company not follow the work from home policy, so that time they did not get any change to do their work from home.

Due to the drastic affect of this epidemic every nation facing the worst circumstances so the lives of the people is under endangerment. A thousand number of corona virus cases increasing per day in India. Everyone is waiting desperately of the vaccine, but there is an uncertainty when the corona vaccine will come. There is only one thing we all are doing to save ourselves from this virus that is social distancing. The more we maintain distance from others the more we safe from the worst effect of corona. So the whole globe maintains social distancing rule and more possibly stay at home because “Stay Home, Stay Safe”.

With the help of this research, we can say that employees of IT sector is satisfied with their work from home system and most of the employees are putting to work from home, but they are also experiencing some challenges. Those challenges affect employees a lot. Most of employee’s responded and shared their situation that they are facing many challenges during work from home. Employees responded that internet connectivity, too many distractions at home and communication with co- worker is hard, are 3 big challenges for employees. The outcome of this present research gives a numerous possible direction of future research. It comprises of differences in the point of views of employees toward work from home system.

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A STUDY ON LOCATION OF NUTRIENT FORAMEN IN TIBIA

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ABSTRACT

The nutrient foramen (NF) of the tibia is located in the proximal third of its diaphysis. With the objective of complementing the information delivered by other authors, we investigated the location, the number of diaphyseal foramina, the distance and position of the foramina in relation to the length of the bone and the proximal epiphysis and the lateromedial diameter and anteroposterior diameter of the bone at the level of NF. For that purpose, we used 50 adult dry tibia of both sexes from the Anatomy department and museum of JVWU. The mean length of the right tibia was 373mm, left tibia 387mm. Location of the NF was found over the soleal line in 5/25 (15.38%) left tibia and 2/25 (12.5%) right tibia, medial to the soleal line in 6/25 (24%) left tibia and 5/25 (20%) right tibia. In all the remaining cases, it was lateral to the soleal line. The NF was located in the upper third of the shaft in 23/25 (92%) left tibia and 22/25 (88%) right tibia, in the middle third 2/25 (8%) left tibia and 3/25 (12%) right tibia. Mean of maximum diameter of NF was 0.6mm in left tibia and 0.7mm in right tibia. Mean of lateromedial diameter at the level of NF was 28mm in left tibia and 26mm in right tibia. Mean of anteroposterior diameter of the shaft at the level of NF was 88mm on the left tibia and 92mm on the right tibia. Mean of the distance between NF and the highest point of intercondylar eminence was 130mm in left tibia and 134mm in right tibia. The FI of the right tibia was 36 and of the left tibia was 33.72. This data could be useful as reference for surgical procedures of the lower limb. **Keywords:** Bones, Diaphysis, Lower limb, Nutrient foramen, Tibia

INTRODUCTION

The nutrient arteries, usually one or two in number, vascularize the long bones. In addition to these arteries, the metaphyseal, epiphyseal and periosteal arteries also provide nourishment to the long bones. During young age, long bones primarily receive about 80% of its blood supply from the nutrient arteries, and in their absence, the vascularisation occurs through the periosteal vessels. These nutrient arteries enter the long bones through the nutrient foramen. The NF, in most of the cases is located away from the growing end derivation of the axiom saying that direction of foramina 'towards the elbow I go and from the knee I flee'. Thorough knowledge about the blood supply of long bones is one of the important factors for success of new techniques in bone transplant and resection in orthopaedics. During transplant techniques, the variants of distribution of nutrient foramina guides the operating surgeons to place the graft without damaging the nutrient arteries. The topography of nutrient foramina may differ in its growing and non-growing end, precise understanding of this becomes essential in certain surgical procedures to conserve the circulation.

MATERIAL AND METHOD

The present study was conducted on 50 adult dry tibia of both sexes, obtained from the Anatomy department and museum of JVWU. Only diaphyseal nutrient foramina were observed in all tibiae. Direction of the nutrient foramen was carefully observed by using a magnifying hand lens and then passing a fine needle (25 gauge) through the foramen to confirm its patency and direction. The following measurements were taken using digital caliper.

1. Length of the tibia

2. Number of nutrient foramina (primary or secondary). The foramina smaller than the size of a 24 hypodermic needle were considered as secondary foramina.

3. Location of nutrient foramen with respect to the soleal line (medial/lateral/over), with respect to the shaft of the tibia (Upper/middle/lower)

4. Direction of nutrient foramen

5. Maximum diameter of nutrient foramen

6. The lateromedial diameter of the shaft at the level of nutrient foramen

7. The anteroposterior diameter of the shaft at the level of nutrient foramen.

8. Distance between the nutrient foramen and the highest point of intercondylar eminence.

9. Foramen index (FI) – By applying Hughes formula, dividing the distance of the foramen from the proximal end (D) by the total length of the bone (L) which was multiplied by hundred. FI=D/Lx100

RESULTS AND OBSERVATION

1. Mean length of the tibia – Of the right tibia was 373 mm, of the left tibia was 387 mm.

2. Number of nutrient foramina– In all tibias only single nutrient foramen was observed.

3. Location of nutrient foramen –

i. With respect to the soleal line (medial/lateral/over) – The nutrient foramen in 5/25 left tibia and 2/25 right tibia was located over the soleal line. In 6/25 left tibia and 5/25 right tibia it was located medial to the soleal line. In all the remaining tibia it was located lateral to the soleal line. In one right tibia the nutrient foramen was located on the interosseus border and in one right tibia it was located on the vertical line.

ii. With respect to the shaft of the tibia (Upper/middle/lower) – 2/25 left tibia and 3/25 right tibia it was situated in the middle 1/3rd of the shaft, in 22/25 left tibia and 20/25 right tibia it was situated in the upper 1/3rd of the shaft.

4. Direction of nutrient foramen – In all the cases (100%), it was directed vertically downwards.

5. Mean of maximum diameter of nutrient foramen – On the left tibia, it was 0.6 mm and on the right tibia it was 0.7 mm.

6. Mean of lateromedial diameter of the shaft at the level of nutrient foramen – On the left tibia it was 28 mm and on the right tibia it was 26 mm.

7. Mean of anteroposterior diameter of the shaft at the level of nutrient foramen – On the left tibia it was 34 mm and on the right tibia it was 34.5 mm.

8. Mean of distance between the nutrient foramen and the highest point of intercondylar eminence – On the left tibia it was 130 mm and on the right tibia it was 134 mm.

9. Foramen index (FI) – The FI of the right tibia was 36 and of the left tibia was 33.72.

Table 1: Location of nutrient foramen in the tibia

	Sample size	**Location of nutrient foramen on shaft**		
		Upper 1/3	**Middle 1/3**	**Lower 1/3**
Right Tibia	25	20	03	02
Left Tibia	25	22	02	01
Total	50	42	05	03

Table2: Direction & relation of Nutrient Foramen (NF) with Soleal line (SL) on tibia

	Direction of NF		**Relation of NF with Soleal line**		
	Downward	**Upward**	**Medial to SL**	**Lateral to SL**	**On SL**
Right Tibia	25	00	5	18	02
Left Tibia	25	00	6	14	05
Total	50	00	11	32	07

Table 3: Distance of nutrient foramen from Junction of Upper 1/3 & Middle 1/3 of shaft

	Sample size	**Mean distance of NF from U/M Junction in mm(Range)**	**Relation of NF with Soleal line**
Right Tibia	25	18 ± 7.4 (5 to 35)	13 ± 3.2 (6 to 19)
Left Tibia	25	18.5 ± 9.2 (1 to 33)	9.1 ± 3.9 (0 to 18)

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Fig.1: Location of nutrient foramen on the soleal line

Fig.2: Nutrient foramen below the soleal line

Fig.3: Morphometrical analysis of Tibia

DISCUSSION

The nutrient artery plays cardinal role in blood supply of a long bone. The nutrient artery to tibia is derived from posterior tibial artery near its origin. It is one of the largest of the nutrients arteries. Rhinelanderet al (1972) have reported that the nutrient artery to the tibia supplies the inner two-thirds of the cortex and is the chief blood supply of cortical bone. A single nutrient foramen on the shaft of the tibia is a common observation of the past studies.

Few researchers have also reported the double diaphysial nutrient foramen on the tibia as a rare occurrence. In the present study, a single nutrient foramen on shaft was a rule in all 50 tibias. All of these nutrient foramina were directed downwards towards the lower end of the tibia. The nutrient foramen was located in upper one third of tibial shaft in 84% of the present study sample. Thus our study shows that the data from Rajasthan region on location of nutrient foramen of tibia is in concurrence with many previous studies done in the different parts of the world.

CONCLUSION

We believe that the present study has provided relevant information about the nutrient foramen of lower long bones. As techniques such as microvascular bone transfer are becoming more popular, information relating to the anatomical description of these foramina is vital to preserve the circulation of affected bony structures. In bone grafts, the nutrient blood supply is crucial and it should be preserved in order to promote the fracture healing. Moreover, the presence of preserved nutrient blood flow is essential for the survival of osteocytes in cases of tumor resection, traumas. It is also of relevance for those clinicians involved in surgical procedures where patency of the arterial supply to long bones is important.

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TOWARDS THE SECURE DATA SHARING TECHNIQUES IN CLOUD FOR MULTY USERES

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Abstract

Information sharing is a fundamental utilization of distributed computing. Some current arrangements are proposed to give adaptable access control to revaluated information in the cloud. Be that as it may, hardly any considerations have been paid to a secure, adaptable and proficient multi-proprietarily situated information sharing when various information proprietors need to share their private information for helpful purposes. In this paper, we set forward another worldview, alluded to as secure, adaptable and proficient multi-proprietor information partaking in mists. The secure, adaptable and proficient multi-proprietor incorporates personality-based encryption and halter kilter bunch key consent to empower bunch situated admittance control for information proprietors in a many-to-many sharing example. Also, with secure, adaptable and proficient multi-proprietor, clients can participate or leave from the gathering advantageously with the protection of both gathering information and client information. We proposed the key-ciphertext homomorphism procedure to build a secure, adaptable and proficient multi-proprietor conspire with short ciphertexts. The security examination shows that our secure, adaptable and proficient multi-proprietor conspire accomplishes information protection from unapproved gets to and plot assaults. Both hypothetical and test results affirm that our PROPOSED plot takes clients little expenses to share and access revaluated information in a gathering way.

Keywords: - Secure, Adaptable and Proficient Multi-proprietor, Cloud Computing, Asymmetric Encryption, Data Sharing.

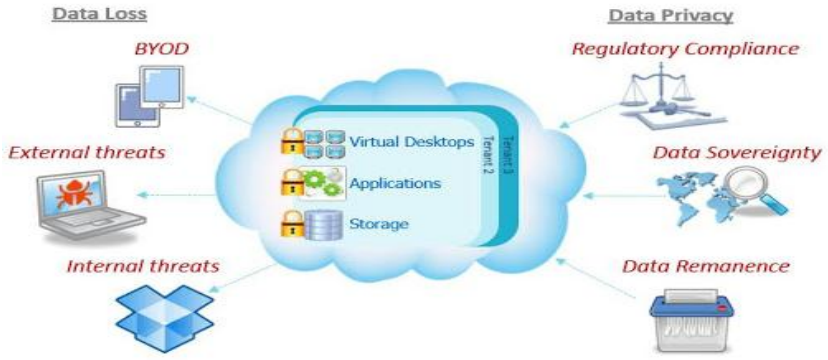
Introduction

Distributed computing advances the sharing and spreading of data in organization. As indicated by its qualities, the proprietorship is isolated from the organization of the information in cloud, which doesn't just give the comfort to the clients, yet additionally carry some genuine difficulties to the information security assurance simultaneously. The cloud ensures secrecy, uprightness and accessibility of information dependent on some cryptographic natives. The investigates on the information security the board in distributed computing centre around three angles, e.g., secure creation, controllable utilization and confided in devastation, in which the protected creation underpins the other two. To ensure the information facilitated in cloud, information proprietors will scramble their information prior to transferring for the most part. Trait based encryption (ABE) has been generally utilized in information encryption in cloud, which can oblige the necessity of access control. Sun et al. proposed a code text access control component dependent on the Ciphertext strategy trait-based encryption (CP-ABE) calculation. CP-ABE is viewed as one of the most reasonable advances for information access control in distributed storage. Yang et al. planned an entrance control structure for multiauthority frameworks dependent on CP-ABE. The investigates previously mentioned could give hypothetical verifications to encryption calculations of information secure creation.

Information security in distributed computing is an essential focal point of these information stockpiling and sharing applications. Since the cloud foundation is consistently out of the client's controllable space, cloud administrations suppliers (CSPs) are untrusted. There are a few plans proposed to address this issue of information security in untrusted stockpiling. All in all, cryptography frameworks are the primary answers for give security to rethought information.

In a solid situation, all libraries in a nation sign up together to accomplish a data trade stage for scholarly purposes. On this stage, the clients of every library should have the option to get to electronic written works of the relative multitude of libraries in this nation. Initially, the clients of normal library can get to the documents in the library that they have a place with, however are not permitted to get to different libraries. With assets of various libraries encoded and put away in the cloud, a few arrangements, which permit clients to get to the documents scrambled with various keys, are required. Then again, for some individual reasons, a few libraries might need to withdraw from or participate in this stage, the arrangement should uphold advantageous part cancellation and expansion with the security of the two players very much protected.

To be sure, we need an entrance control component that supports bunch arranged information sharing productively, just as helpful enrolment evolving. Along these lines, information is partaken in a many-to-many example, in particular, numerous proprietors in a gathering approved admittance to their information for some clients at the same time. To be more exquisite, the required plan should have the option to change over the records encoded with various keys into documents that can be unscrambled by a typical gathering. Further, as gathering refreshes, the changed over records should have the option to re-convert once more into the first structure.



Securing Cloud Data

Problem Statement And System Model

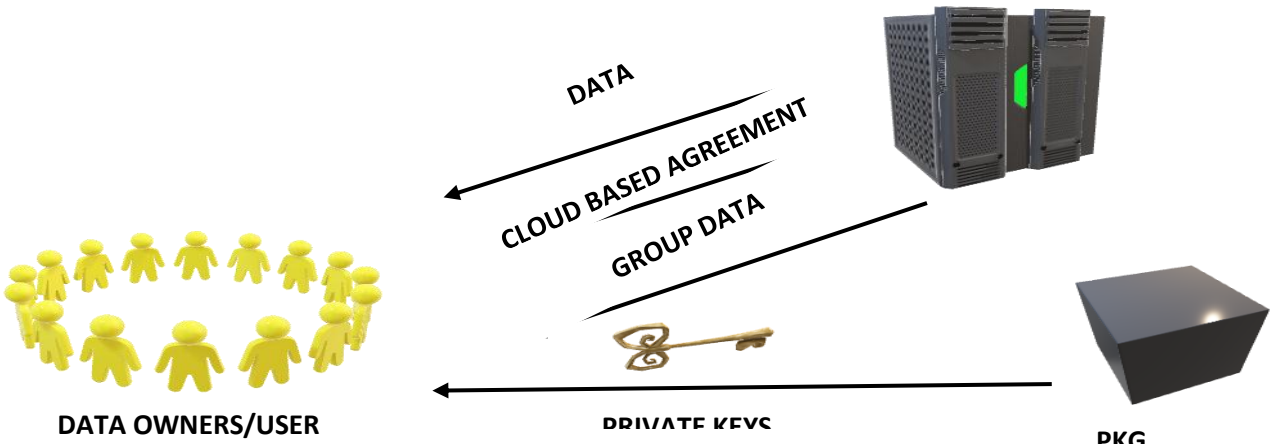
We consider a gathering focused information partaking in the cloud. In this situation, various clients in the cloud make up a gathering for a unique reason, e.g., for a scholarly meeting. In the interim, every part in the gathering possesses touchy data and is eager to get to others' secret information for a specific accomplishment. Simultaneously, these individuals scramble their own information and revaluate these ciphertexts to the cloud. Thusly, each square of information must be removed by its proprietor before any sharing activities. Indeed, some helpful work can be taken care of when every part can unreservedly get to all squares of the information possessed by this gathering. Thus, this issue alludes to that how to empower the individuals in the gathering to share their rethought information in the cloud with the accompanying requirements.

1) It is illogical to send completely confided in Cloud Services Provider.

2) Each part should have the option to extricate the others' encoded information in the gathering. Exceptionally, the awry cryptographic instrument is applied in this framework for the reasons like validations.

3) Membership of the gathering may change occasionally, i.e., the clients may add into or retreat from this gathering.

4) The quantity of the individuals in the gathering might be considerable.



System Model

We address the above issue by presenting and formalizing another entrance control system alluded to as secure, adaptable, and proficient multi-proprietor information sharing (SECURE, ADAPTABLE AND PROFICIENT MULTI-PROPRIETOR). The framework engineering is outlined In our SECURE, ADAPTABLE AND PROFICIENT MULTI-PROPRIETOR system, there are three elements depicted as follows.

1) PKG: an element that is liable for producing private keys for every client in the cloud, as indicated by their personalities. This is the main completely confided in gathering in this framework.

2) Data: Owners/Users.: the cloud clients that encode the information with IBE and re-appropriate the scrambled information to the cloud.

3) CSP: a substance which gives stockpiling and processing administrations to Data Owners/Users. Since it is out of the clients' confided in area, the CSP ought not be a substance of completely trusted. Like and, we accept the CSP as semi-trusted, in particular, legitimate yet inquisitive. That is, the CSP won't noxiously mess with clients' information, yet will attempt to get

familiar with the substance of the encoded information. Thus, access control instrument should be uncommonly intended to forestall the semi-confided in CSP to uncover the touchy data.

In our secure, adaptable and proficient multi-proprietor framework, Data Owners/Users obtain private keys from PKG, who creates these keys as indicated by their characters (ids). Information Owners a while later scrambles their information under the relating public keys (a processable type of their ids) and send the ciphertexts to CSP. At whatever point the Data Owners need to get to their own information, they can download the ciphertext from the cloud and unscramble it. Incidentally, through the CSP, a client can send private message to another in a safe manner by encoding the message under the collector's ID. From that point forward, the individuals in a typical gathering concur a couple of gathering keys, bunch public key (GPK) and gathering mystery key (GSK), unevenly dependent on the cloud. By utilizing a planned bi-course key-ciphertext homomorphism strategy, the cloud can be appointed to change over the information proprietors' ciphertexts into another type of gathering information. In this way, all the changed over information under GPK can be gotten to by all the gathering individuals with their own gsks. Also, when the participation changes or the even gathering excuses, the gathering information can be reconverted once again into the first structure to accomplish forward and in reverse security effectively.

Proposed Method

In a protected, versatile and capable multi-owner framework, information proprietors in the gathering scramble their records and revaluate these ciphertexts to the cloud for bunch sharing. For example, the libraries in a nation share their quest indexes for the wide range of various libraries in this nation. Every library encodes its inquiry registry through IBE and stores this scrambled document to the cloud. For helpful reason, all libraries are happy to get to others' hunt indexes in the gathering. Thus, they haggle to build up a gathering by creating a couple of gathering keys dependent on the cloud. At that point, the CSP changes over the ciphertexts to the structure under the gathering public key. Along these lines, all libraries in this nation can decode all the scrambled inquiry indexes in this gathering with their own gathering mystery keys. In addition, when a library is erased from or added into the gathering, the CSP can re-convert the gathering information into the ciphertexts under individual libraries' private keys before another gathering is set up.

We build the secure, adaptable and proficient multi-proprietor conspire by utilizing the AGKA plot and a variation of the IBE plot. in the secure, adaptable and proficient multi-proprietor development, the greatest deterrents are 1) that how to change over the first ciphertexts under the public keys of the information proprietors into the ciphertexts decryptable with the mystery keys of the gathering, and 2) that how to help part erasure and expansion. Truth be told, the ciphertexts produced by the information proprietors are encoded under their own public keys, while the ciphertexts which can be unscrambled by all individuals should be scrambled with the gathering public key. Besides, the CSP isn't completely believed, that is, the cloud ought not have the option to get to the gathering information regardless of whether conniving with unauthenticated clients. Subsequently, the gathering information should be encoded and decoded lopsidedly, in particular, the GPK ought not equivalent to GSK. For common sense reason, the secure, adaptable and proficient multi-proprietor plan should have the option to help part erasure and expansion, which implies that the ciphertext changed over by the cloud should have the option to be changed over into another ciphertext under another gathering public key without plaintext delivering. Hence, for enrolment changing, the ciphertexts after transformation can be re-changed over once more into the first ciphertexts under the public keys of information proprietors. To adapt to the situation above, we plan a bi-course key-ciphertext homomorphism method. In a casual manner, the planned key-ciphertext homomorphism method permits our secure, adaptable and proficient multi-proprietor plan to make changed over ciphertexts. Each gathering part creates a blinding key for his/her ciphertext. With these blinding keys, the CSP can daze the records in a homomorphism way. That is, the first ciphertexts produced under the information proprietors' public keys can be changed over into the ciphertexts under the gathering public key. From that point onward, different individuals in the bunch can decode the ciphertext with them. Outstandingly, the key-ciphertext homomorphism component has the property of bi-bearing. That is, the ciphertext changed over by the CSP can be re-changed over back once more. Thusly, information owners ‘private information can be unreservedly changed forward and in reverse by the CSP with security protected. Subsequently, bunch individuals can participate or leave from this gathering helpfully without downloading or transferring their information occasionally.

To meet people's high expectations above, we plan a bi-heading key-ciphertext homomorphism strategy. In a casual manner, the planned key-ciphertext homomorphism strategy permits our safe, versatile and capable multi-owner plan to make changed over ciphertexts. Each gathering part produces a blinding key bki for his/her ciphertext. With these blinding keys, the CSP can daze the documents in a homomorphism way. That is, the first ciphertexts produced under the information proprietors' public keys can be changed over into the ciphertexts under the gathering public key. From that point onward, different individuals in the gathering can unscramble the ciphertext with their GSKs. Prominently, the key-ciphertext homomorphism component has the property of bi-bearing. That is, the ciphertext changed over by the CSP can be re-changed over back once more. Along these lines, information proprietors' private information can be unreservedly changed forward and in reverse by the CSP with security safeguarded. Therefore, bunch individuals can participate or leave from this gathering advantageously without downloading or transferring their information now and again. Then, the security of the two proprietors' private information and gathering information is all around kept up in our protected, versatile and capable multi-owner framework.

Conclusions

In this paper, we proposed a safe, versatile, and proficient multi-proprietor information sharing component. In a safe, adaptable, what's more, proficient multi-proprietor information sharing framework, different information proprietors can share information in a many-to-many example, which delivers the safe, versatile, and proficient multi-proprietor particularly appropriate for bunch arranged information sharing applications. We developed the safe, versatile, and proficient multi-proprietor framework by coordinating character-based encryption and uneven gathering key understanding. Also, we proposed another strategy for bi-course key-ciphertext homomorphism to helpfully change over the clients' Trans private information into bunch information and the other way around. Furthermore, SSEM empowers participation changing with forward and in reverse security.

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महिलाओं के राजनैतिक सशक्तीकरण की स्थिति : रोहतक जिले के संदर्भ में

संजय बुन्देला

मानविकी एवं सामाजिक विज्ञान विभाग, फैकल्टी ऑफ एजुकेशन एण्ड मेथोडोलॉजी,

ज्योति विद्यापीठ महिला विश्वविद्यालय, जयपुर(राजस्थान)

मुनीषा शर्मा

शोधार्थी, मानविकी एवं सामाजिक विज्ञान विभाग, फैकल्टी ऑफ एजुकेशन एण्ड मेथोडोलॉजी,

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सारांश

प्रस्तुत शोध महिलाओं के राजनीतिक सशक्तीकरण की स्थिति को स्पष्ट करते हुए महिलाओं के राजनीतिक सशक्तीकरण की समस्याओं और समाधानों को उजागर करने का प्रयास करता है। वर्तमान में महिला सशक्तीकरण की स्थिति चाहे वह आर्थिक, सामाजिक, शैक्षिक और राजनैतिक किसी भी क्षेत्र में हो अभी भी संतोषजनक नहीं है। प्रस्तुत शोध इसके कारणों को जानने का प्रयास भी करता है।

मुख्य शब्द–

राजनीतिक सशक्तीकरण, पुरूष प्रधान समाज, नारी समाज, महिला सरपंच ।

प्रस्तावना

महिलाओं के विकास और उनके सशक्तीकरण पर असंख्य प्रयास जारी है। महिलाओं को आर्थिक, सामाजिक और राजनैतिक रूप से सशक्त करने के लिए सरकार संवैधानिक प्रावधान कर रही है और गैर सरकारी संगठन अपने–अपने स्तर पर प्रयास कर रहे है। फिर भी समाज में महिलाओं की स्थिति में संतुष्टिजनक परिवर्तन नहीं आ पा रहा है। कुछ महिलाओं को उदाहरण मानकर संपूर्ण नारी समाज को सशक्त कहना हास्यापद होगा क्योंकि आज भी ग्रामीण स्तर पर महिलाओं को उसी प्रकार के समाज में रहना पड़ता है जैसा दशकों पहले था। संवैधानिक प्रावधानों के कारण महिलाओं का राजनीति में प्रवेश तो हो गया है परंतु महिलाओं को राजनैतिक स्वतंत्रता आज भी नहीं मिली है। जिस प्रकार महिलाऐं कामकाजी तो हो रही है परंतु उन्हें आर्थिक स्वतंत्रता प्राप्त नहीं है। ग्रामीण स्तर पर महिला सरपंच और प्रधानों की भूमिका निभा रही है परंतु क्या यह वास्तविक राजनैतिक सशक्तीकरण है या वह पुरूष प्रधान समाज की कठपुतली बन गई है? ग्रामीण महिलाओं को राजनीति में कई प्रकार की समस्याओं का सामना करना पड़ता है? प्रस्तुत शोध पत्र ग्रामीण महिलाओं के राजनीतिक सशक्तीकरण के इन्हीं प्रश्नों के उत्तर जानने का प्रयास है।

शोध के उद्देश्य

ग्रामीण क्षेत्र में महिलाओं के राजनीतिक सशक्तीकरण की स्थिति का पता लगाना।

ग्रामीण क्षेत्र में महिलाओं के राजनीतिक सशक्तीकरण की बाधाओं और समस्याओं का पता लगाना।

शोध क्षेत्र

शोध हेतु हरियाणा राज्य के रोहतक जिले का चयन किया गया। जिसका क्षेत्रफल 937 वर्गकिलोमीटर है। जिसमें 852.43 वर्गकिलोमीटर ग्रामीण क्षेत्र और 84.80 वर्गकिलोमीटर शहरी क्षेत्र है। इसकी जनसंख्या 7,34,328 है। इसमें 91 गांव सम्मिलित है। रोहतक में 100 महिला सरपंचों से साक्षात्कार अनुसूची द्वारा तथ्यों का संकलन करते हुए निष्कर्ष प्रस्तुत किए गए।

राजनीति में महिलाओं की भागीदारी

महिलाओं की चुनावी भागीदारी में उनकी सामाजिक व आर्थिक स्थिति का विशेष प्रभाव होता है। उच्च सामाजिक वर्ग (जाति) व आर्थिक वर्गों की महिलाओं में राजनीतिक भागीदारी अधिक पाई गई, जबकि निम्न सामाजिक–आर्थिक तबके की महिलाओं में यह भागीदारी अत्यधिक कम थी।

हालाँकि पिछले कुछ वर्षों में चुनावों में मतदाता के रूप में महिलाओं की भूमिका बढ़ी है। अनेक राज्यों में हुए विभिन्न चुनावों में महिलाएँ पुरुषों के समान मतदान कर रही हैं, जबकि कई स्थानों पर वे पुरुषों की तुलना में अधिक मतदान कर रही हैं।

राजनीति में पुरुषों का वर्चस्व

महिलाओं की राजनीतिक भागीदारी में पुरुषों का वर्चस्व मुख्य बाधकों में से एक है। 50 वर्ष से अधिक उम्र की दो–तिहाई महिलाओं का मानना है कि पुरुषों के राजनीतिक वर्चस्व के कारण महिलाओं को राजनीति में अवसर नहीं मिलता, जबकि 20–25 वर्ष की आधी महिलाओं की राय इसके विपरीत है।

इसके अलावा अधिकांश महिलाओं का मानना है कि भारतीय मतदाता महिलाओं की तुलना में पुरुष उम्मीदवारों के पक्ष में अधिक मत देते हैं।

राजनीतिक अवसरों में किसी चुनाव लड़ना, राजनीतिक दल का टिकट मिलना तथा चुनाव जीतने की प्रायिकता आदि को शामिल किया गया है।

सामाजिक–राजनीतिक पृष्ठभूमि

सर्वेक्षण के माध्यम से यह पता चला कि किसी महिला के लिये राजनीति में भाग लेने के लिये उसकी पृष्ठभूमि महत्त्वपूर्ण है। अधिकांश महिलाओं ने यह माना कि ऊँची जाति की महिलाओं के लिये राजनीति में हिस्सा लेना आसान है, जबकि निम्न जाति की महिलाओं के लिये यह तुलनात्मक रूप से कठिन है।

इसके अलावा राजनीतिक पृष्ठभूमि वाली महिला के लिये किसी गैर–राजनीतिक पृष्ठभूमि वाली महिला की तुलना में राजनीतिक गतिविधियों में हिस्सा लेना आसान है।

घरेलू स्तर पर राजनीतिक निर्णय में पितृसत्ता का प्रभाव

अधिकांश महिलाओं का मानना है कि घरों में राजनीतिक निर्णय लेने में उन्हें कम स्वायत्तता प्राप्त होती है। इसका मुख्य कारण पितृसत्तात्मक समाज तथा रूढ़िवादी सामाजिक ढाँचा है।

राजनीतिक समाचारों में रुचि

इस सर्वेक्षण द्वारा यह पाया गया कि 71 प्रतिशत महिलाओं ने विभिन्न माध्यमों से राजनीतिक समाचारों को पढ़ने में रुचि प्रदर्शित की। ये माध्यम मीडिया, न्यूज़ चौनल, सोशल मीडिया, व्हाट्सएप आदि हो सकते हैं।

समाचारों में रुचि भी महिलाओं की सामाजिक–आर्थिक पृष्ठभूमि के अनुसार प्रभावित होती है। उच्च सामाजिक–आर्थिक वर्ग की महिलाओं में यह प्रवृत्ति अधिक पाई जाती है।

सोशल मीडिया के माध्यम से राजनीतिक भागीदारी

सोशल मीडिया के माध्यम से राजनीति में भागीदारी करने के मामले में महिलाओं की संख्या काफी कम है।

सर्वेक्षण में केवल 11 प्रतिशत महिलाओं ने स्वीकार किया कि वे किसी भी प्रकार से सोशल मीडिया पर राजनीतिक रूप से सक्रिय हैं, जबकि 89 प्रतिशत महिलाओं ने कहा कि सोशल मीडिया पर राजनीतिक रूप से बिल्कुल सक्रिय नहीं हैं।

राजनीतिक भागीदारी में महिलाओं की स्वायत्तता

हालाँकि विगत कुछ वर्षों में महिलाओं की राजनीतिक भागीदारी में वृद्धि हुई है लेकिन शोध में लगभग 36 प्रतिशत महिलाओं ने कहा कि वे राजनीतिक निर्णय लेने के मामले में अभी भी स्वायत्त नहीं हैं।

राजनीति में महिलाओं की कम भागीदारी के निम्नलिखित कारण हैं

पितृसत्तात्मक समाज

राजनीति में महिलाओं की कम भागीदारी के मुख्य कारणों में पितृसत्तात्मक समाज तथा इसकी संरचनात्मक कमियाँ हैं। इसकी वजह से महिलाओं को कम अवसर मिलते हैं तथा वे राजनीतिक प्रतिस्पर्द्धा में पुरुषों से काफी पीछे रह जाती हैं।

लगभग एक–तिहाई महिलाओं ने पितृसत्तात्मक समाज को उनकी राजनीतिक भागीदारी में बाधा के रूप में देखा।

घरेलू जिम्मेदारियाँ

सर्वेक्षण में अधिकांश महिलाओं ने स्वीकार किया कि घरेलू ज़िम्मेदारियाँ जैसे– बच्चों की देखभाल, घर के सदस्यों के लिये खाना बनाना व अन्य पारिवारिक कारणों से वे राजनीति में भाग नहीं ले पातीं।

लगभग 13 प्रतिशत महिलाओं ने राजनीति में उनकी कम भागीदारी के लिये घरेलू ज़िम्मेदारियों को कारण माना।

व्यक्तिगत कारण

कई महिलाएँ व्यक्तिगत कारणों की वजह से भी राजनीति में सक्रिय रूप से भाग नहीं लेतीं। ये व्यक्तिगत कारण हैं– राजनीति में रुचि न होना, जागरुकता का अभाव, शैक्षिक पिछड़ापन आदि।

सांस्कृतिक प्रतिबंध एवं रूढ़िवाद

सांस्कृतिक मानदंडों तथा रूढ़िवादिता के कारण भी महिलाएँ राजनीति में भाग नहीं ले पातीं। सांस्कृतिक प्रतिबंधों में पर्दा प्रथा, किसी अन्य पुरुष से बातचीत न करना, महिलाओं का बाहर न निकलना आदि शामिल हैं।

सामाजिक–आर्थिक कारण

कमज़ोर सामाजिक–आर्थिक पृष्ठभूमि भी महिलाओं की राजनीतिक भागीदारी में अवरोध उत्पन्न करते हैं।

राजनीति की नकारात्मक छवि

आम लोगों में राजनीति की नकारात्मक छवि तथा इसमें व्याप्त भ्रष्टाचार की वजह से भी महिलाएँ राजनीति में कम रूचि लेती हैं।

महिलाओं को लेकर राजनीतिक दलों की उदासीनता

राष्ट्रीय स्तर की राजनीति में महिलाओं की भागीदारी को लेकर देश के राजनीतिक दलों तथा सरकारों ने उदासीनता प्रदर्शित की है।

प्रस्तावित महिला आरक्षण विधेयक (Women Reservation Bill), जो कि संसद तथा राज्य की विधानसभाओं में महिलाओं के लिये आरक्षण का प्रावधान करता है, को पारित करने में सभी राजनैतिक दल निरुत्साहित प्रतीत होते हैं।

इसका मुख्य कारण यह है कि पुरुष राजनीतिज्ञों को इस बात का भय रहता है कि महिलाओं के निर्वाचन से उनके दोबारा चुने जाने की संभावना कम या समाप्त हो सकती है जिसके लिये वे तैयार नहीं हैं।

राजनीति में महिलाओं की भागीदारी में वृद्धि हेतु आवश्यक समाधान

संसद में महिलाओं के लिये आरक्षण

भारतीय संविधान में 73वें और 74वें संशोधन द्वारा महिलाओं के लिये स्थानीय निकाय की एक–तिहाई सीटों के आरक्षण का प्रावधान किया गया है लेकिन राजनीति में महिलाओं की समान भागीदारी सुनिश्चित करने के लिये अन्य प्रयास किये जाने की भी आवश्यकता है।

राजनीतिक दलों में महिलाओं के लिये आरक्षण

यद्यपि यह कदम महिला सांसदों की संख्या में वृद्धि के संबंध में कोई ठोस आश्वासन प्रदान नहीं करता है किंतु राजनीति में महिलाओं की पर्याप्त संख्या सुनिश्चित करने के लिये यह ठोस कदम हो सकता है।

विश्व के कई देशों में यह प्रावधान किया गया है जैसे– स्वीडन, नॉर्वे, कनाडा, ग्रेट ब्रिटेन और फ्रांस आदि।

महिलाओं के सर्वांगीण विकास हेतु माहौल प्रदान करना

राजनीति व अन्य विविध क्षेत्रों में महिलाओं की भागीदारी बढ़ाने के लिये आवश्यक है कि समाज में प्रत्येक स्तर पर महिला सशक्तीकरण तथा उनकी सामुदायिक भागीदारी के लिये प्रयास किये जाएँ ताकि उनमें आत्मविश्वास, नेतृत्व क्षमता आदि गुणों का विकास हो।

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Population density and diversity study of algal sp in different season from Dravyavati River

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Abstract
The ecosystem received any pollutant, changes occur in its physico-chemical nature and that causes a change in the biota of that region. Some biota which is sensitive to the pollutant will disappear from the place and those capable of being tolerant to that type of pollution are able to withstand. In the identification of the organisms of different/similar type of ecosystem, we can predict the degree of pollution. To evaluate the water quality of Dravyavati River (Amanishah Nala) is the great advantages for showing the amount of pollutant present in the water and its impact on the physico-chemical and biological components of the water and it can to use to assess what the organisms are likely to be exposed to as well as for calculation of the amount of pollutant transported in and out of the system. This work represents an attempt to compile and evaluate the present status of affairs with regard to population Density and Diversity study of Algal sp. in different Season from Dravyavati, along with its nutrient status and phytoplankton.

Keywords: ecosystem, algae, population density, diversity

Introduction
Algal community was used to monitor the water quality. Water pollution indices are based on the community, which is used commonly to detect and evaluate the water pollution (Boateng and Aboagye 2013) [3]. Phytoplankton constitutes the very basis of nutritional cycle of an aquatic ecosystem. In any water source, the seasonal changes in algal diversity and productivity are due to differential reactions changing levels of light, temperature, nutrients and grazing pressure in various algal species with seasonal changes (Agrawal, 1999) [1] over the course of a year. Seasonal algae cycles are more pronounced in temperate or temperate environments. Unlike those in tropical areas, polar lakes and rivers (Reynolds, 1988) [8]. A fairly recognizable Phytoplankton fits a fairly recognizable the annual growth period, but often the synchronicity of its regular annual cycle is broken by the exponential growth of rapid inflation (Vaulot, 2001) [10]. Some animals. The most significant occurrence of nature is primary development, on which the whole It relies, directly or indirectly, on a broad variety of lives. It is the guiding force of all metabolic operations in the biosphere (Balogun, *et al*, 2014) [2]. It also illustrates an area's ability to sustain biological population growth (Prasad, 1990) [7]. The Algal, In the food chain, flora is a critical link and its effectiveness depends on the quality of water at a given time (Meshramm and Dhande, 2000) [5]. In the water, too much nitrogen and phosphorus allows algae to expand more rapidly than organisms can manage.
These algae occurrence and abundance differ seasonally and their analysis offers an analysis the related research focus is on the eutrophication of bodies of water and its harmful effects on marine life.
The relationship between the growth of algae and nitrogen to phosphorus atomic ratios (N: P) evaluated in the experiment revealed that N: P was the major factor influencing the growth of algae and the limiting factor was phosphorus (Zhou *et al*, 2011) [11].

Methodology
The water samples were collected at monthly intervals from three selected Industrial sites of Dravyavati River (Amanishah Nala), one meter away from both the banks for each sampling station. The samples were collected from a depth of 10 to 15 cm from surface. The time of the sampling ranged between 8 to 11 a.m. throughout the study period.
Water samples from Dravyavati River (Amanishah Nala) were collected in different seasons (summer, winter and rainy) and stored in sterilized glass bottles. Before sampling, the risk of external contamination was minimized by rinsing these bottles three times with source water. Random samples for the investigation of phytoplankton were collected onsite. The chemical analysis of samples was performed soon after their transport to the laboratory. Algae were identified and counted microscopically (Ewebiyi *et al*, 2015) [4].
1 liter water sample was collected at each of the selected locations. 15-ml portion was selected and centrifuged at 3000 rpm at room temperature. The visible content on the concentrated ~20 µl sample was deposited on a glass slide, counted and enumerated under a 40X light microscope. Representative images were taken at 100X magnification. Morphological features – cell character, motility, Color, physical and reproductive structures were used to identify algal species. Bellinger and Sige 2015, key were followed for the Identification of algal species (Siangbood and Ramanujam 2014) [9].

Results
The water Samples were collected in all three seasons (summer, winter and rainy) from Dravyavati River

(Amanishah Nala) Industrial sites (Site 1= Sitapura industrial area, Site 2= Sanganer industrial area, Site 3= Mansarovar industrial area). Many algae are excellent indicators of water quality and the dominant phytoplankton group can be used to characterize and identify the status of ecosystem of many lakes and river. Many industries discharge their wastes in the Nala. There was a correlation in the population density and diversity of algal sp.with respect to the physicochemical condition of water samples collected at different time interval.

Table 1: Population Density and Diversity study of Algal sp. in Summer Season from Dravyavati River

S. No	Physicochemical Parameters	Site1	Site 2	Site3
1.	Nitrogen	*Oscillatoria*	*Oscillatoria*	*Oscillatoria*
		Navicula	*Navicula*	*Navicula.*
		Nostoc	*Chlorella*	*Chlorella*
		Anabaena	*Nostoc*	*Nostoc*
			Anabaena	*Anabaena*
2.	Phosphorus			*Oscillatoria*
				Polytoma
		Oscillatoria	*Oscillatoria*	*Navicula*
		Navicula	*Chlorella*	*Chlorella*
		Chlorella		*Spirogyra*
				Spirulina
				Pandorina

*Site 1= Sitapura industrial area, Site 2= Sanganer industrial area, Site 3= Mansarovar industrial area

The highest concentration of the Nitrogen in summer season inhanced the growth and showed the presence of *Oscillatoria sp*., *Navicula sp*. *Chlorella sp*., *Nostoc sp*. *and Anabaena sp*. (Table 1). Similarly high concentration of Phosphorus also inhance the growth of *Oscillatoria sp*., *Navicula sp*., and *Chlorella sp*.

Along with above reported sp. *Oscillatoria sp*., *Polytoma sp*., *Navicula sp*., *Chlorella sp*., *Spirogyra sp*., *Spirulina sp*. *and Pandorina sp*. were the additional member reported only from Site3 (Mansarovar industrial area) in the summer season when there was an inhanced Concentration of Phosphorus in the water.

Table 2: Population Density and Diversity study of Algal sp. in Rainy Season from Dravyavati River

S. No	Physicochemical Parameters	Site1	Site 2	Site3
1.	Nitrogen	*Oscillatoria*	*Oscillatoria*	*Oscillatoria*
		Navicula	*Navicula*	*Polytoma*
		Chlorella	*Chlorella*	*Navicula*
		Spirogyra	*Spirogyra*	*Chlorella*
		Spirulina	*Nostoc*	*Spirogyra*
		Nostoc	*Anabaena*	*Spirulina*
		Anabaena		*Synedra*
				Anabaena
				Nostoc
				Pandorina
				Chlamdomonas
				Oscillatoria
2.	Phosphorus	*Oscillatoria*	*Oscillatoria*	*Polytoma*
		Polytoma	*Navicula.*	*Navicula*
		Navicula	*Chlorella*	*Chlorella*
		Chlorella	*Spirogyra*	*Spirogyra*
		Spirogyra		*Spirulina*
		Spirulina		*Synedra*
				Nostoc
				Anabaena
				Pandorina

*Site 1= Sitapura in Site 1= Sitapura industrial area, Site 2= Sanganer industrial area, Site 3= Mansarovar industrial area

The highest concentration of the Nitrogen in rainy season inhanced the growth and showed the presence of *Oscillatoria sp*., *Navicula sp*. *Chlorella sp*., *Spirogyra sp*., *Spirulina sp*., *Nostoc sp.and Anabaena sp*. (Table 2). Similarly *Oscillatoria sp*., *Polytoma sp*., *Navicula sp*., *Chlorella sp*., *Spirogyra sp*., *Spirulina sp*., *Synedra sp*., *Anabaena sp*., *Nostoc sp*., *Pandorina sp*., and *Chlamdomonas sp*.,were reported with the presence of Nitrogen from Site3 (Mansarovar industrial area). High concentration of Phosphorus also enhance the growth of *Oscillatoria sp*., *Polytoma sp*., *Navicula sp*., *Chlorella sp*. *Spirogyra sp*. *and Spirulina sp*. Along with above reported sp. *Polytoma sp*., *Navicula sp*., *Chlorella sp*., *Spirogyra sp*., *Spirulina sp*., *Synedra sp*., *Anabaena sp*., *Nostoc sp*.and *Pandorina sp*. were the addinitonal member reported only from Site3 (Mansarovar industrial area) in the rainy season when there was an enhanced Concentration of Phosphorus in the water.

Table 3: Population Density and Diversity study of Algal sp. in Winter Season from Dravyavati River

S. No	Physicochemical Parameters	Site1	Site 2	Site3
1.	Nitrogen	Oscillatoria	Oscillatoria	Oscillatoria
				Polytoma
				Navicula
				Chlorella
				Spirogyra
		Navicula	Navicula	Spirulina
		Chlorella	Chlorella	Nostoc
		Nostoc	Nostoc	Anabaena
		Anabaena	Anabaena	
2.	Phosphorus	Oscillatoria	Oscillatoria	Oscillatoria
		Navicula	Chlorella	Navicula sp
		Chlorella		Chlorella sp

*Site 1= Sitapura industrial area, Site 2= Sanganer industrial area, Site 3= Mansarovar industrial area

The highest concentration of the Nitrogen in winter season inhanced the growth and showed the presence of *Oscillatoria sp*.,*Navicula sp*., *Chlorella sp*. *Polytoma sp*., *Spirogyra sp*., *Spirulina sp*., *Nostoc sp*., *and Anabaena sp*. (Table 3). Similarly high concentration of Phosphorus also enhance the growth of *Oscillatoria sp*., *Navicula sp*., and *Chlorella sp*. Along with above reported sp. *Oscillatoria sp*., *Navicula sp*., and *Chlorella sp*. were reported only from Site2 (Sanganer industrial area) in the winter season when there was an enhanced Concentration of Phosphorus in the water.

Conclusion

Algal community was used to monitor the water quality. Water pollution indices are based on the community, which is used commonly to detect and evaluate the water pollution. To, fulfill the objectives and aims of the study; collection was done from different sites during the period of 3 years. Site 1= Sitapura industrial area, Site 2= Sanganer industrial area, Site 3 = Mansarovar industrial area. This work represents an attempt to compile and evaluate the present status of affairs with regard to population Density and Diversity study of Algal sp. in different Season from Dravyavati, along with its nutrient status and phytoplankton. Special attention has been given to evaluate the Bioindicator species with special reference to phytoplankton which give valuable response against the physico-chemical parameters of Amanishah Nala. After observation of results in summer season algal *sps* reported only with high concentration of Phosphorus at Site3 (Mansarovar industrial area). In Rainy season algal *sps* reported only with high concentration of Nitrogen and Phosphorus at Site3 (Mansarovar industrial area) and in winter season algal *sps* reported only with high concentration of Phosphorus at Site2 (Sanganer industrial area).

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Population density and diversity study of algal sp in different season from Dravyavati River

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Abstract
The ecosystem received any pollutant, changes occur in its physico-chemical nature and that causes a change in the biota of that region. Some biota which is sensitive to the pollutant will disappear from the place and those capable of being tolerant to that type of pollution are able to withstand. In the identification of the organisms of different/similar type of ecosystem, we can predict the degree of pollution. To evaluate the water quality of Dravyavati River (Amanishah Nala) is the great advantages for showing the amount of pollutant present in the water and its impact on the physico-chemical and biological components of the water and it can to use to assess what the organisms are likely to be exposed to as well as for calculation of the amount of pollutant transported in and out of the system. This work represents an attempt to compile and evaluate the present status of affairs with regard to population Density and Diversity study of Algal sp. in different Season from Dravyavati, along with its nutrient status and phytoplankton.

Keywords: ecosystem, algae, population density, diversity

Introduction
Algal community was used to monitor the water quality. Water pollution indices are based on the community, which is used commonly to detect and evaluate the water pollution (Boateng and Aboagye 2013) [3]. Phytoplankton constitutes the very basis of nutritional cycle of an aquatic ecosystem. In any water source, the seasonal changes in algal diversity and productivity are due to differential reactions changing levels of light, temperature, nutrients and grazing pressure in various algal species with seasonal changes (Agrawal, 1999) [1] over the course of a year. Seasonal algae cycles are more pronounced in temperate or temperate environments. Unlike those in tropical areas, polar lakes and rivers (Reynolds, 1988) [8]. A fairly recognizable Phytoplankton fits a fairly recognizable the annual growth period, but often the synchronicity of its regular annual cycle is broken by the exponential growth of rapid inflation (Vaulot, 2001) [10]. Some animals. The most significant occurrence of nature is primary development, on which the whole It relies, directly or indirectly, on a broad variety of lives. It is the guiding force of all metabolic operations in the biosphere (Balogun, *et al*, 2014) [2]. It also illustrates an area's ability to sustain biological population growth (Prasad, 1990) [7]. The Algal, In the food chain, flora is a critical link and its effectiveness depends on the quality of water at a given time (Meshramm and Dhande, 2000) [5]. In the water, too much nitrogen and phosphorus allows algae to expand more rapidly than organisms can manage.
These algae occurrence and abundance differ seasonally and their analysis offers an analysis the related research focus is on the eutrophication of bodies of water and its harmful effects on marine life.
The relationship between the growth of algae and nitrogen to phosphorus atomic ratios (N: P) evaluated in the experiment revealed that N: P was the major factor influencing the growth of algae and the limiting factor was phosphorus (Zhou *et al*, 2011) [11].

Methodology
The water samples were collected at monthly intervals from three selected Industrial sites of Dravyavati River (Amanishah Nala), one meter away from both the banks for each sampling station. The samples were collected from a depth of 10 to 15 cm from surface. The time of the sampling ranged between 8 to 11 a.m. throughout the study period.
Water samples from Dravyavati River (Amanishah Nala) were collected in different seasons (summer, winter and rainy) and stored in sterilized glass bottles. Before sampling, the risk of external contamination was minimized by rinsing these bottles three times with source water. Random samples for the investigation of phytoplankton were collected onsite. The chemical analysis of samples was performed soon after their transport to the laboratory. Algae were identified and counted microscopically (Ewebiyi *et al*, 2015) [4].
1 liter water sample was collected at each of the selected locations. 15-ml portion was selected and centrifuged at 3000 rpm at room temperature. The visible content on the concentrated ~20 µl sample was deposited on a glass slide, counted and enumerated under a 40X light microscope. Representative images were taken at 100X magnification. Morphological features – cell character, motility, Color, physical and reproductive structures were used to identify algal species. Bellinger and Sige 2015, key were followed for the Identification of algal species (Siangbood and Ramanujam 2014) [9].

Results
The water Samples were collected in all three seasons (summer, winter and rainy) from Dravyavati River

(Amanishah Nala) Industrial sites (Site 1= Sitapura industrial area, Site 2= Sanganer industrial area, Site 3= Mansarovar industrial area). Many algae are excellent indicators of water quality and the dominant phytoplankton group can be used to characterize and identify the status of ecosystem of many lakes and river. Many industries discharge their wastes in the Nala. There was a correlation in the population density and diversity of algal sp.with respect to the physicochemical condition of water samples collected at different time interval.

Table 1: Population Density and Diversity study of Algal sp. in Summer Season from Dravyavati River

S. No	Physicochemical Parameters	Site1	Site 2	Site3
1.	Nitrogen	*Oscillatoria*	*Oscillatoria*	*Oscillatoria*
		Navicula	*Navicula*	*Navicula.*
		Nostoc	*Chlorella*	*Chlorella*
		Anabaena	*Nostoc*	*Nostoc*
			Anabaena	*Anabaena*
2.	Phosphorus			*Oscillatoria*
				Polytoma
		Oscillatoria	*Oscillatoria*	*Navicula*
		Navicula	*Chlorella*	*Chlorella*
		Chlorella		*Spirogyra*
				Spirulina
				Pandorina

*Site 1= Sitapura industrial area, Site 2= Sanganer industrial area, Site 3= Mansarovar industrial area

The highest concentration of the Nitrogen in summer season inhanced the growth and showed the presence of *Oscillatoria sp*., *Navicula sp*. *Chlorella sp*., *Nostoc sp*. *and Anabaena sp*. (Table 1). Similarly high concentration of Phosphorus also inhance the growth of *Oscillatoria sp*., *Navicula sp*., and *Chlorella sp*.

Along with above reported sp. *Oscillatoria sp*., *Polytoma sp*., *Navicula sp*., *Chlorella sp*., *Spirogyra sp*., *Spirulina sp*. *and Pandorina sp*. were the additional member reported only from Site3 (Mansarovar industrial area) in the summer season when there was an inhanced Concentration of Phosphorus in the water.

Table 2: Population Density and Diversity study of Algal sp. in Rainy Season from Dravyavati River

S. No	Physicochemical Parameters	Site1	Site 2	Site3
1.	Nitrogen	*Oscillatoria*	*Oscillatoria*	*Oscillatoria*
		Navicula	*Navicula*	*Polytoma*
		Chlorella	*Chlorella*	*Navicula*
		Spirogyra	*Spirogyra*	*Chlorella*
		Spirulina	*Nostoc*	*Spirogyra*
		Nostoc	*Anabaena*	*Spirulina*
		Anabaena		*Synedra*
				Anabaena
				Nostoc
				Pandorina
				Chlamdomonas
				Oscillatoria
2.	Phosphorus	*Oscillatoria*	*Oscillatoria*	*Polytoma*
		Polytoma	*Navicula.*	*Navicula*
		Navicula	*Chlorella*	*Chlorella*
		Chlorella	*Spirogyra*	*Spirogyra*
		Spirogyra		*Spirulina*
		Spirulina		*Synedra*
				Nostoc
				Anabaena
				Pandorina

*Site 1= Sitapura in Site 1= Sitapura industrial area, Site 2= Sanganer industrial area, Site 3= Mansarovar industrial area

The highest concentration of the Nitrogen in rainy season inhanced the growth and showed the presence of *Oscillatoria sp*., *Navicula sp*. *Chlorella sp*., *Spirogyra sp*., *Spirulina sp*., *Nostoc sp.and Anabaena sp*. (Table 2). Similarly *Oscillatoria sp*., *Polytoma sp*., *Navicula sp*., *Chlorella sp*., *Spirogyra sp*., *Spirulina sp*., *Synedra sp*., *Anabaena sp*., *Nostoc sp*., *Pandorina sp*., and *Chlamdomonas sp*.,were reported with the presence of Nitrogen from Site3 (Mansarovar industrial area). High concentration of Phosphorus also enhance the growth of *Oscillatoria sp*., *Polytoma sp*., *Navicula sp*., *Chlorella sp*. *Spirogyra sp*. *and Spirulina sp*. Along with above reported sp. *Polytoma sp*., *Navicula sp*., *Chlorella sp*., *Spirogyra sp*., *Spirulina sp*., *Synedra sp*., *Anabaena sp*., *Nostoc sp*.and *Pandorina sp*. were the addinitonal member reported only from Site3 (Mansarovar industrial area) in the rainy season when there was an enhanced Concentration of Phosphorus in the water.

Table 3: Population Density and Diversity study of Algal sp. in Winter Season from Dravyavati River

S. No	Physicochemical Parameters	Site1	Site 2	Site3
1.	Nitrogen	Oscillatoria	Oscillatoria	Oscillatoria
				Polytoma
				Navicula
				Chlorella
				Spirogyra
		Navicula	Navicula	Spirulina
		Chlorella	Chlorella	Nostoc
		Nostoc	Nostoc	Anabaena
		Anabaena	Anabaena	
2.	Phosphorus	Oscillatoria	Oscillatoria	Oscillatoria
		Navicula	Chlorella	Navicula sp
		Chlorella		Chlorella sp

*Site 1= Sitapura industrial area, Site 2= Sanganer industrial area, Site 3= Mansarovar industrial area

The highest concentration of the Nitrogen in winter season inhanced the growth and showed the presence of *Oscillatoria sp*.,*Navicula sp*., *Chlorella sp*. *Polytoma sp*., *Spirogyra sp*., *Spirulina sp*., *Nostoc sp*., *and Anabaena sp*. (Table 3). Similarly high concentration of Phosphorus also enhance the growth of *Oscillatoria sp*., *Navicula sp*., and *Chlorella sp*. Along with above reported sp. *Oscillatoria sp*., *Navicula sp*., and *Chlorella sp*. were reported only from Site2 (Sanganer industrial area) in the winter season when there was an enhanced Concentration of Phosphorus in the water.

Conclusion

Algal community was used to monitor the water quality. Water pollution indices are based on the community, which is used commonly to detect and evaluate the water pollution. To, fulfill the objectives and aims of the study; collection was done from different sites during the period of 3 years. Site 1= Sitapura industrial area, Site 2= Sanganer industrial area, Site 3 = Mansarovar industrial area. This work represents an attempt to compile and evaluate the present status of affairs with regard to population Density and Diversity study of Algal sp. in different Season from Dravyavati, along with its nutrient status and phytoplankton. Special attention has been given to evaluate the Bioindicator species with special reference to phytoplankton which give valuable response against the physico-chemical parameters of Amanishah Nala. After observation of results in summer season algal *sps* reported only with high concentration of Phosphorus at Site3 (Mansarovar industrial area). In Rainy season algal *sps* reported only with high concentration of Nitrogen and Phosphorus at Site3 (Mansarovar industrial area) and in winter season algal *sps* reported only with high concentration of Phosphorus at Site2 (Sanganer industrial area).

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राष्ट्रीय शिक्षा नीति, 2020 का शिक्षा की प्रशासनिक संरचना में परिवर्तन पर प्रभाव

संजय बुन्देला

फैकल्टी ऑफ एजुकेशन एण्ड मेथोडोलॉजी,

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सारांश

प्रस्तुत शोध पत्र राष्ट्रीय शिक्षा नीति, 2020 और शैक्षिक प्रशासनिक संरचना में परिवर्तन के प्रभाव पर आधारित है। वर्तमान शिक्षा नीति में कई बड़े परिवर्तन किए गए है। जिसके तहत शिक्षा की रूपरेखा, संरचना में परिवर्तन आया है। यह परिवर्तन विद्यालय और विश्वविद्यालय स्तर पर आया है। इस नीति में व्यावसायिक पाठ्यक्रमों, मातृभाषा और प्रायोगिक शिक्षा पर अधिक ध्यान दिया गया है। विद्यार्थियों के कौशल को आधार बनाकर विषय चयन में परिवर्तन किया गया है। परीक्षा के दबाव को कम करने के लिए परीक्षा और अंकतालिका निर्माण के पुराने नियमों को परिवर्तित किया गया है। स्थानीय स्तर पर परामर्श निर्देशन हेतु स्थानीय लोगों की सहभागिता को बढ़ाया गया है। इन परिवर्तनों के कारण विद्यालय स्तर पर कई प्रशासनिक परिवर्तन करने होंगे। शिक्षकों की भूमिका में भी परिवर्तन आ रहा है। प्रस्तुत शोध इसी प्रशासनिक परिवर्तनों के प्रभावों, समस्याओं, लाभों और समाधानों पर केन्द्रित है।

मुख्य बिंदु

राष्ट्रीय शिक्षा नीति, प्रशासनिक परिवर्तन, व्यावसायिक पाठ्यक्रम, प्रायोगिक शिक्षा

प्रस्तावना

राष्ट्रीय शिक्षा नीति (एनईपी), 2020 को 30 जुलाई, 2020 को जारी किया गया। मानव संसाधन विकास मंत्रालय (एमएचआरडी) ने जून 2017 में राष्ट्रीय शिक्षा नीति का ड्राफ्ट तैयार करने के लिए एक कमिटी (डॉ. के. कस्तूरीरंगन) का गठन किया था। कमिटी ने मई 2019 में सार्वजनिक टिप्पणियों के लिए ड्राफ्ट एनईपी सौंपा। एनईपी 1986 की राष्ट्रीय शिक्षा नीति का स्थान लेगी। इस नीति में व्यावसायिक पाठ्यक्रमों, मातृभाषा और प्रायोगिक शिक्षा पर अधिक ध्यान दिया गया है। विद्यार्थियों के कौशल को आधार बनाकर विषय चयन में परिवर्तन किया गया है। परीक्षा के दबाव को कम करने के लिए परीक्षा और अंकतालिका निर्माण के पुराने नियमों को परिवर्तित किया गया है। स्थानीय स्तर पर परामर्श निर्देशन हेतु स्थानीय लोगों की सहभागिता को बढ़ाया गया है। इन परिवर्तनों के कारण विद्यालय स्तर पर कई प्रशासनिक परिवर्तन करने होंगे ।

उद्देश्य

1. नई शिक्षा नीति 2020 के परिवर्तनों की जांच करना ।
2. नई शिक्षा नीति 2020 की समस्या, लाभ और प्रभाव की जांच करना ।

कार्यप्रणाली

शोध कार्य के उद्देश्यों को प्राप्त करने के लक्ष्य से नई शिक्षा नीति, 2020 के प्रभाव को अप्रत्यक्ष रूप से अध्ययन को फिर से तैयार करना हैं । अध्ययन का स्वरुप वर्णनात्मक है जो द्वितीयक तथ्यों पर आधारित हैं । जो भारत सरकार के मानव संसाधन विकास मंत्रालय के प्रतिवेदन , पत्रिका, समाचार पत्र इत्यादि से सूचना एकत्रित की गई है। खोज विधियां रणनीतिक हैं जो प्रक्रियाएं नए अनुक्रम की खोज करने या बेहतर समझ बनाने के लिए जांच के लिए सबूतों के संग्रह का उपयोग करती हैं।

एनईपी 2020 में भारतीय उच्च शिक्षा क्षेत्र को फिर से परिभाषित करने के लिए 10 बड़े विचार इस प्रकार हैं–

1. **उत्कृष्टता के उद्देश्य से विश्व स्तरीय शिक्षा –** इसमें पूरी दृढ़ता से विश्व स्तरीय उच्च शिक्षा प्रणाली के निर्माण की आकांक्षा की गई है और माना गया है कि यह भारत के भविष्य के लिए और ज्ञान परक समाज के निर्माण के लिए महत्वपूर्ण और बेहद जरूरी है।

2. बहु–विषयक और उदार शिक्षा – इसमें एसटीईएम यानी साइंस, टेक्नोलोजी, इंजीनियरिंग और मेडिसिन में अध्ययन के साथ–साथ लिबरल आर्ट्स, मानविकी और सामाजिक विज्ञान पर जोर देने के साथ एक उदार, बहु–विषयक और अंतर–अनुशासनात्मक शिक्षा पारिस्थितिकी तंत्र के निर्माण की परिकल्पना की गई है।

3. विनियामक सुधार और सार्वजनिक – सार्वजनिक और निजी विश्वविद्यालयों के पुराने अवरोधों और भेदों को दूर करके उच्च शिक्षा में मूलभूत और महत्वपूर्ण विनियामक सुधार किए गए हैं।

4. गुणवत्ता आश्वासन और पहुंच के साथ विस्तार – इसमें विस्तार, पहुंच, इक्विटी, समावेश और उत्कृष्टता से संबंधित नीति पर ध्यान केंद्रित किया गया है। ये सभी समान रूप से महत्वपूर्ण लक्ष्य और आकांक्षाएं हैं जिन्हें एक साथ पूरा करने की आवश्यकता है।

5. रिसर्च इकोसिस्टम – इसमें अनुसंधान और नवाचार की संस्कृति पर जोर दिया गया है, जो भविष्य में उच्च शिक्षा की कल्पना के लिए केंद्र बिंदु है। साथ ही शिक्षा में उच्च सकल घरेलु उत्पाद (जीडीपी) निवेश की परिकल्पना करते समय, राष्ट्रीय अनुसंधान फाउंडेशन के माध्यम से अनुसंधान के लिए महत्वपूर्ण धन प्रोत्साहन और अनुदान बनाने का प्रयास किया गया है।

6. फैकल्टी फोकस – यह मानते हुए कि संकाय सदस्य उच्च शिक्षा प्रणाली का सबसे महत्वपूर्ण पहलू हैं। इसमें मेंटरिंग, रिटेंशन, प्रोत्साहन, उपलब्धियों और संकाय विकास कार्यक्रमों पर अधिक फोकस के साथ उत्कृष्ट फैकल्टी की भर्ती के लिए मार्ग प्रशस्त किया गया है।

7. गवर्नेस और नेतृत्व – इसमें प्रशासन और संस्था–निर्माण के प्रयासों में गवर्नेस और नेतृत्व के महत्व पर प्रकाश डाला गया है, जिसमें संस्था की प्रभावशीलता के सभी पहलू नेतृत्व और प्रशासनिक ढांचों पर निर्भर होंगे।

8. शैक्षणिक स्वतंत्रता और संस्थागत स्वायत्तता – इसमें डिग्री कार्यक्रमों की अवधि निर्धारित करने में पर्याप्त स्वतंत्रता और शैक्षणिक लचीलेपन के साथ वित्त पोषण, पाठ्यक्रम विकास, छात्र का नामांकन, और संकाय भर्ती में शैक्षणिक स्वतंत्रता और संस्थागत स्वायत्तता के महत्व को रेखांकित किया गया है।

9. सार्वजनिक अनुदान और निजी परोपकार – इसने उच्च शिक्षा में जीडीपी निवेश में वृद्धि के साथ वित्त पोषण की रूपरेखा को मजबूत किया है और परोपकार पर जोर देते हुए सार्वजनिक और निजी दोनों क्षेत्रों की भूमिका को मान्यता दी गई है।

10. अंतर्राष्ट्रीयकरण, प्रत्यायन और डिजिटलीकरण – इसमें दुनिया भर के प्रमुख विश्वविद्यालयों के साथ वैश्विक भागीदारी को बढ़ावा देने के लिए अंतर्राष्ट्रीयकरण के महत्व की सराहना की गई है। इसमें विश्वविद्यालयों की मान्यता और वैश्विक बेंचमार्किंग को गंभीरता से लिया गया है, जिसमें रैंकिंग भी शामिल है। इसमें उच्च शिक्षा के डिजिटलीकरण के लिए महत्वपूर्ण समर्थन और ऑनलाइन शिक्षा को बढ़ावा देने और मौजूदा डिजिटल बुनियादी ढांचे के उन्नयन की आवश्यकता की परिकल्पना की गई है।

हालांकि, एनईपी 2020 को माननीय प्रधानमंत्री और मानव संसाधन विकास के लिए माननीय केंद्रीय मंत्री के दृष्टिकोण के अनुरूप लागू करने के लिए, कुछ संस्थागत चुनौतियों और व्यवहार संबंधी पहलुओं पर ध्यान देना महत्वपूर्ण है।

उच्च शिक्षा पारिस्थितिकी तंत्र और, विशेष रूप से, सरकारी एजेंसियों और नियामक निकायों को परिवर्तन, सुधार, पुनः कल्पना और परिवर्तन के क्षेत्रों के लिए खुद को प्रतिबद्ध करने की आवश्यकता–

संपूर्ण उच्च शिक्षा पारिस्थितिकी तंत्र और, विशेष रूप से, सरकारी एजेंसियों और नियामक निकायों को परिवर्तन, सुधार, पुनः कल्पना और परिवर्तन के निम्नलिखित 5 प्रमुख क्षेत्रों के लिए खुद को प्रतिबद्ध करने की आवश्यकता है–

1. विश्वास निर्माण – हमें सरकारी एजेंसियों, नियामक निकायों और उच्च शिक्षा संस्थानों के बीच विश्वास, सम्मान और कॉलेजियम की संस्कृति का निर्माण करने की आवश्यकता है। वर्तमान में, यह एक बड़ी चुनौती है और एक एकीकृत विकास तथा देश के लिए एक मजबूत उच्च शिक्षा प्रणाली के लिए हमारे सभी प्रयासों पर प्रतिकूल प्रभाव डाल रहा है।

2. पारदर्शी और समीचीन निर्णय लेना – हमें समयबद्ध तरीके से सरकारी एजेंसियों और नियामक निकायों के भीतर तेजी से निर्णय लेने के लिए पारदर्शी और जवाबदेही आधारित तंत्र बनाने की जरूरत है। इस प्रयास में कई अड़चनें हैं और कीमती समय निर्णय लेने के विभिन्न पहलुओं में खो जाता है।

3. संस्थागत स्वतंत्रता – हमें उच्च शिक्षा संस्थानों को जिम्मेदारी के साथ निर्णय लेने और संस्थानों के साथ निहित जवाबदेही के लिए सशक्त बनाने की आवश्यकता है। अधिक शक्ति देने की आवश्यकता है और उस प्रक्रिया में उच्च शिक्षा संस्थानों को अधिक जिम्मेदारी दी जानी चाहिए ताकि वे एनईपी 2020 के कार्यान्वयन के लिए अधिक प्रभावी ढंग से योगदान कर सकें।

4. सक्रिय और भागीदारी परामर्श – हमें सरकारी एजेंसियों और नियामक निकायों द्वारा उच्च शिक्षा संस्थानों के साथ प्रचारक और सहभागी परामर्श तंत्र की आवश्यकता है, विशेष रूप से नए नियमों को लागू करना या मौजूदा नियमों में संशोधन करना जो संस्थानों को किसी भी तरीके से प्रभावित कर सकते हैं। हितधारक परामर्श मॉडल जिसमें विनियमों के कारण प्रभावित होने वाले संस्थानों को नियमों के निर्माण से पहले अग्रिम में परामर्श करने की आवश्यकता होती है।

5. आईओई और स्वायत्त संस्थानों को सशक्त बनाना – हमें इंस्टीट्यूशन ऑफ एमिनेंस को सशक्त बनाने की आवश्यकता है। जो विश्वविद्यालय वैश्विक रैंकिंग में उच्च स्थान हासिल करने के लिए भारतीय विश्वविद्यालयों की दृष्टि को पूरा करते हैं, उन्हें और अधिक स्वायत्तता और स्वतंत्रता प्रदान करने की तत्काल आवश्यकता है।

शिक्षा नीति के अंतर्गत प्रमुख प्रशासनिक परिवर्तन

शिक्षकों का प्रशिक्षण और प्रबंधन – शिक्षकों के प्रशिक्षण के मौजूदा बीएड प्रोग्राम के स्थान पर चार वर्ष का एकीकृत बीएड प्रोग्राम होगा जिसमें उच्च क्वालिटी का कंटेट, पेडेगॉगी और व्यावहारिक प्रशिक्षण शामिल होगा। इसके अतिरिक्त शिक्षकों से यह अपेक्षा की जाएगी कि वे हर वर्ष न्यूनतम 50 घंटे निरंतर पेशेवर विकास का प्रशिक्षण प्राप्त करें। राष्ट्रीय शिक्षक शिक्षण परिषद एनसीईआरटी के सहयोग से शिक्षकों की शिक्षा का राष्ट्रीय करिकुलम फ्रेमवर्क तैयार करेगा। शिक्षकों से शिक्षण के अतिरिक्त प्रशासनिक कार्य नहीं कराए जाएंगे और उनके बहुत अधिक तबादले नहीं किए जाएंगे (विशेष परिस्थितियों में राज्य सरकारों द्वारा निर्धारित तबादलों को छोड़कर)।

स्कूलों में सुशासन – कमिटी ने कहा था कि देश के प्रत्येक क्षेत्र में प्राइमरी स्कूलों को शुरू करने से शिक्षा तक सबकी पहुंच बनी है। लेकिन इससे ऐसे स्कूलों की संख्या भी बढ़ी है जहां विद्यार्थी बहुत कम संख्या में मौजूद हैं (2016–17 में प्राथमिक शिक्षाओं में विद्यार्थियों की औसत संख्या 14 थी)। स्कूलों के छोटे आकार के कारण उन्हें चलाना मुश्किल होता है, खासकर आर्थिक रूप से क्योंकि तब शिक्षकों की नियुक्ति और फिजिकल रिसोर्सेज़ जैसे लाइब्रेरी की किताबों, स्पोर्ट्स के सामान को जुटाने में ज्यादा खर्च होता है। एनईपी ने सुझाव दिया है कि कई स्कूलों को मिलाकर एक स्कूल परिसर बनाया जाए। स्कूल परिसर में सेकेंडरी स्कूल और 5–10 किलोमीटर के दायरे में आने वाले स्कूल और आंगनवाड़ियां शामिल होंगी। इससे निम्नलिखित सुनिश्चित होगा– (1) स्कूल परिसर में सभी विषयों के लिए शिक्षकों की पर्याप्त संख्या (2) पर्याप्त भौतिक संसाधन (जैसे लाइब्रेरी की किताबों, स्पोर्ट्स का सामान) और (3) स्कूलों के लिए सुशासन।

स्कूल का रेगुलेशन – वर्तमान में स्कूल शिक्षा विभाग स्कूलों के गवर्नेंस और रेगुलेशन का सारा काम करता है। कमिटी ने कहा था कि इससे हितों का टकराव होता है और सत्ता का केंद्रीकरण भी होता है। उसने सुझाव दिया था कि विभाग को सिर्फ नीतियां बनाने और उसकी निगरानी करने में शामिल किया जाए, पर स्कूलों के रेगुलेशन में नहीं। प्रत्येक राज्य में एक स्वतंत्र स्कूल स्टैंडर्ड्स अथॉरिटी बनाई जानी चाहिए। वह सरकारी और निजी स्कूलों के लिए बुनियादी मानदंड निर्दिष्ट करेगी। स्कूलों के लिए सेल्फ रेगुलेशन या एक्रेडिटेशन प्रणाली बनाई जाएगी।

संस्थानों का पुनर्गठन – सभी उच्च शिक्षण संस्थानों को तीन श्रेणियों में पुनर्गठित किया जाएगा– (1) अनुसंधान विश्वविद्यालय, जिनका अनुसंधान और शिक्षण पर समान रूप से ध्यान होगा (2) शिक्षण विश्वविद्यालय जो शिक्षण पर ध्यान केंद्रित करेंगे (3) डिग्री देने वाले कॉलेज जिनका मुख्य ध्यान अंडरग्रैजुएट शिक्षण पर होगा। ऐसे सभी संस्थान धीरे धीरे शैक्षणिक, प्रशासनिक और वित्तीय स्वायत्तता की ओर बढ़ेंगे। सभी एचईआईज़ अंततः 3,000 या उससे अधिक विद्यार्थियों वाले बड़े मल्टीडिस्पलिनरी विश्वविद्यालयों और कॉलेजों में तब्दील हो जाएंगे। 2030 तक प्रत्येक जिले में, या उसके निकट एक बड़ा मल्टीडिस्पलिनरी एचईआई होना चाहिए।

रेगुलेटरी संरचना – भारत में उच्च शिक्षा के रेगुलेटरी ढांचे में कायापलट की जाएगी ताकि यह सुनिश्चित हो कि अलग, स्वतंत्र निकाय रेगुलेशन, एक्रेडिटेशन, वित्त पोषण और शिक्षण मानदंडों को बनाने जैसे कार्य करें। इससे हितों का टकराव कम होगा और सत्ता का केंद्रीकरण खत्म होगा। यह सुनिश्चित करने के लिए भारतीय उच्च शिक्षा आयोग (एचईसीआई) की स्थापना की जाएगी जिसमें चार स्वतंत्र वर्टिकल होंगे–

(1) राष्ट्रीय उच्च शिक्षा रेगुलेटरी परिषद, जोकि सिंगल रेगुलेटर होगी (इसमें शिक्षकों की शिक्षा शामिल होगी, पर कानूनी और मेडिकल शिक्षा शामिल नहीं होंगी) ।

(2) संस्थानों का एक्रेडिटेशन करने के लिए राष्ट्रीय एक्रेडिटेशन परिषद ।

(3) उच्च शिक्षण संस्थानों के वित्त पोषण के लिए उच्च शिक्षा अनुदान परिषद।

(4) उच्च शिक्षा के करिकुलम का फ्रेमवर्क और लर्निंग लेवल्स को तय करने के लिए सामान्य शिक्षा परिषद। इन चारों के बीच विवाद होने पर एचईसीआई के अंतर्गत विशेषज्ञों का एक निकाय उसे हल करेगा।

विदेशी विश्वविद्यालय उच्च प्रदर्शन वाले विदेशी विश्वविद्यालयों को दूसरे देशों में कैंपस बनाने के लिए प्रोत्साहित किया जाएगा। इसी प्रकार चुनींदा प्रमुख ग्लोबल विश्वविद्यालयों को भारत में संचालन की अनुमति दी जाएगी। विदेशी विश्वविद्यालयों के प्रवेश को सुविधाजनक बनाने के लिए एक कानूनी फ्रेमवर्क बनाया जाएगा। इन विश्वविद्यालयों को देश में स्वायत्त संस्थानों के अनुरूप रेगुलेटरी और गवर्नेंस के नियमों में छूट दी जाएगी।

निष्कर्ष

हालांकि सभी हित धारकों के बीच विश्वास विकसित करने और नियामक प्रणाली में पारदर्शिता विकसित करने की जिम्मेदारी के साथ स्वायतता प्रदान करने तथा भागीदारी ढांचे के तहत संस्थानों को सशक्त बनाने के संबंध में राष्ट्रीय प्राथमिकताओं का प्रबंधन करने में सरकार की महत्वपूर्ण भूमिका है। लेकिन यह राष्ट्रीय शिक्षा नीति 2020 की सफलता के लिए अपरिहार्य हैं।

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RAKTA DHATU: AN AYURVEDIC REVIEW

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ABSTRACT
Dhatu offers Ashraya, that may Dharana & Poshana i.e. supports & nourishes the body by its prakrita karmas. There are seven dhatu in our ayurvedic classic like as Rasa, Rakta, Mamsa, Meda, Asthi, Majja, Sukra. Raktadhatu is second dhatu. Teja & jala mahabhuta is predominant in rakta dhatu.The moola sthanas of Raktavaha srotas unit of measurement yakrut (liver) and pleeha (spleen). Rudhirm, Astrak, Lohitam, Sonitam unit of measurement the synonyms of the raktadhatu. Jivan is that the most perform of raka dhatu. keep with Acharya charak, Raktadhatu has eight anjali pramana. Sira and kandara unit of measurement the upadhatu of rakta. Raktadhatu zygomatic bone is piita once raktadhatu pramana created in utttam,avar, madhyma avastha individuals spoken as rakta sara purusha. Any moderately derivation in raktadhatu winds up in pathological process.

KEYWORDS : Rakta Dhatu, Raktavahasrotas, Vishudha Rakta Dhatu.

INTRODUCTION

"**Sharir dushanad dosha dhatvo dehadharanat "** vata,pitta,kapha unit of measurement thought-about as dosha, dhatu,and zygomatic bone in many contexts. as a results of they vitiate the body, they supports the body and switch out waste among the body severally.

Raja Ranjene suggests that to stain since this dhatu is red colored. it's spoken as as "rakta" essence of rakta dhatu is rakta.

Rakta dhatus unit of measurement alternatives names like Rudhira, Asruk, Shonit, Kshataj, Lohit and asru. Rakta suggests that the extreme constituent of the body fluids. it's as a results of eight action of Ranjaka passerine on Rasa dhatu.

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According to sharangdhara acharya sayas that Rasa dhatu is transferred into heart with influence of saman vayu .Then is metabolized as Ranjak pitta.

RAKTA SWARUPA

According to charak acharya says that pure blood is resembled with color of gold purified with fire , indragopa(firefly), padma (red lotus), alaktaka(lac), gunja phala (fruits of gunja), relying upon the individual constitution . A locality from this its thickness is slightly quite that of liquid (asamhata), and single colored (avivarnata) unit of measurement the characteristic feature of blood.

According to acharya vagbhata pure rakta dhatu is slightly sweet and salty . it's neither cold or heat , asamhata (not coagulated), little thicker than that of liquid .Its color resembles with the colour of lotus ,indragopa insects,gold,blood of sheep ,and rabbit etc. are characteristic choices of pure blood .It is the explanation for origin of the body and by deciding the condition (healthy or unhealthy) of the body.

METABOLISM OF RAKTA DHATU

According to acharya shushurta says that raktadhatu is made from the ahara rasa, that's colourless .When it reaches to yakrita and pleeha by the help of ushna guna converts this rasa dhatu into rakta dhatu. commonly physical structure contains vishuddha teja and once this comes up-to-date with rasa dhatu it helps to transfer rasadhatu into raktadhatu among the body. keep with acharya vagbhata sayas that ranjaka pitta is placed in amashaya

While sushurta has mentioned the positioning of ranjaka pittta is yakrita & pleeha.Its main perform is rasa ranjana i.e. giving coloration to the rasadhatu.

RAKTA VAHA SROTAS -

The moola sthanas of Rakta vaha srotas unit of measurement yakrut (liver) and pleeha (spleen) .The formation of Rakta among the body takes place at bone marrow according to modern science but as per ayurveda rakta dhatu is made from rasa dhatu by ranjaka pitta in yakruta .The perform of these moola sthana have main role in maintain the quality of rakta rather than its quantity. Spleen acts as land site of erythrocyte i.e.it annihilates the fragile erythrocyte that have crossed 120 days but this perform can assigned in various components of the body like bone marrow etc., but it's one distinct perform that it store the blood in it and drains it into systematic circulation in emergency conditions .The liver has varied functions that facilitate in maintain the quality of the blood .liver produces the action factors, heparin, Vitamin-k etc. are essential in regulating the quality of blood.

FUNCTIONS OF RAKTA DHATU ACCORDING TO AYURVEDA

The main perform of rakta dhatu is delineate as "jivana" which means the indication and sustenance of vitality. The prana vayu that circulates at the facet of blood inhabits life into all the living cells. The prana vayu from the external atmosphere is transformed into its bodily assumable from then circulated with the blood among the complete body, and additionally the rakta dhatu there by performs its perform of jivana, It therefore happens that, on stoppage of blood flow to any of the bodily organs or limbs, the particular components dies and withers off.

The health and care of complexion and pleasant expressions regards of physical health are the functions of the rakta dhatu.

The raktadhatu, that's gift all over the body and travels through their individual veins and arteries where it fills the dhatus, and provides nutrition to them. It collectively offers complexion, and serving to for sensation of bit to the body .

According to sushruta and charaka have collectively mentioned that raktadhatu is that the most for living body. it's answerable for giving support, for promotion of strength, complexion, and happiness, nutrition to the succeeding dhatu and long life to the body .Apart from this it collectively plays terribly important role in sustenance of lean vital. There unit of measurement ten factors that facilitate in sustaining the vital organs like hearts, head, and bladder, throat, purified blood, semen, ojas, and rectum .

FUNCTION OF THE BLOOD (MODERN purpose OF VIEW)

1. RESPIRATORY FUNCTION

Transport of metabolism gases is finished by the blood. It carries oxygen from alveoli of lungs to fully completely different tissues and CO2 from tissues to alveoli.

2. EXCRETORY FUNCTION

Waste product formed at intervals the tissues throughout various metabolic activities unit of measurement removed by blood and carried to the bodily process organs like viscus, skin, liver, etc. for excretion.

3. NUTRITIVE FUNCTION

Nutritive substances like amino acids, lipids, glucose and vitamins derived from comestible food unit of measurement absorbed from gastrointestinal tract and carried by blood to fully completely different components of the body for growth and production of energy.

4. REGULATION OF WATER BALANCE

Water content of the blood is freely interchangeable with interstitial fluid .This helps at intervals the regulation of water content of the body.

5. REGULATION OF TEMPERATURE

Because of the high specific heat of blood, it's in charge of maintaining the thermoregulatory mechanism at intervals the body, i.e. the balance between heat loss and heat gain at intervals the body.

6. TRANSPORT OF HORMONES AND ENZYMES

Hormones that unit secreted by passageway (endocrine) glands unit free directly into the blood. The blood transports these hormones to their target organs/tissues. Blood in addition transports enzymes.

7. REGULATION OFACID-BASE BALANCE

Plasma proteins and Hb act as buffers and facilitate at intervals the regulation of reaction.

RAKTA KSHAYA & VRIDDHI LAKSHANA:

RAKTA KSHAYA LAKSHANA

According to Acharyas Vagbhata

1. Likeness towards bitter and cold
2. loss of stiffness of blood vessels

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3. Dryness.

Acharyas Sushruta

1. trying to find sours and cold
2. movability of blood vessels.

Dalhana commentary's

1. attenuated state of rakta leads to vata vriddhi that ends in trying to find bitter food.
2. attenuated state of rakta in addition enhance heat production attributable to depletion of water of rakta dhatu. This condition ends up in trying to find cold food so as that heat are reduced.

INCREASED STATE OF RAKTADHATU (VRIDDHI LAKSHANA)

Excess intake of hot and pungent food, exposure to hot climate unit the very important. it's attributable to causes of rakta vriddhi.

According to Sushrut Acharyas

1. Skin rashes
2. Redness of eyes and full blood vessels

Vagbhata (Astang Hridaya)

1. Visarpa (erysipelas)
2. Pleeha vidradhi (splenic symptom)
3. Kushtha (All sorts of skin diseases furthermore as leprosy)
4. Vataarsha (vatarakta / gout)
5. Pittarsha (Hemorrhagic disorders)
6. Gulma (Abdominal tumor)
7. Upakusha(gingivitis)
8. Kamala (Jaundice)
9. Vyanga (Hypopigmentation of skin)
10. Agninasha
11. Sammoha(Syncope)
12. Raktatwak-netra-mutrata (Reddish Coloration of skin, tissue layer and urine)

VISHUDHA RAKTA SARA PURUSHA LAKSHANA

The signs and symptoms of person endowed/ having pure blood in their body unit clarity in complexion ancient functioning of the receptor, natural urge for the objects of sense organs, avyahata, paktivegam, sukhanwita, pushti and strength.

DISCUSSION

Rakta or the blood has been thought-about as an important dhatu once Rasa, a touch like rasa dhatu is accepted as a result of the foundation or very cheap of various dhatus. that the rakta dhatu is accepted as a result of the idea of living beings.

“Dehasaya Rudhiram Mulam Rudhirenev Dharvate”

Jeevanam & prananuvartana unit a pair of most important functions of rakta dhatu.Jeevan implies that life. Lifeof every personalities depend on correct blood circulation. Accordingto Acharyas Dalhan says

that lifespan of 1 and every one dependsonprana equipped by rakta dhatu. prana-dravya is nothing but O gift in air.

CONCLUSION

Rakta dhatu is one amongst the pranayantan. Raktadhatu has panchamahabuta composition attributable to this it's utterly totally different quality.
It is designed in Yakruta and Phleeha and circulated throughout the body with rasa dhatu.

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Importance of *In vitro* micropropagation techniques for *Opuntia ficus indica* for mass production

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Abstract
Opuntia ficus indica, known as prickly pear, is the most important plant species in the Cactaceae family. It is recognized as a multipurpose plant because it can be consumed as human food (fruits and vegetables), forage, medicinal plants, and ornamental sources. *Opuntia ficus indica* parts like pear, roots, cladodes, seeds, and juice have precious properties with high value of antioxidants (flavonoids, ascorbate), pigments (carotenoids, betalains), phenolic acids and various phytochemical compounds (biopeptides, soluble fibers). All of these compounds have been considered and make a payment to the medicinal properties of *Opuntia ficus indica*. This study focuses on the importance of *Opuntia ficus indica* as a medicinal plant, as fodder as a source for other industrial purposes, and emphasizes the popularization of tissue-grown *Opuntia ficus indica*.

Keywords: *Opuntia ficus indica*, antioxidants, pigments, tissue culture, phytochemical components

Introduction
Opuntia spp. belongs to the Cactaceae family and comes from Central America. The most economically important species is *Opuntia ficus indica*, which is cultivated for both fruits and cladodes (Nobel, 2002) [1, 3, 6]. The genus includes other important edible species found worldwide as wild or cultivated species in many arid or sub-arid areas (eg in the Mediterranean) (Nobel, 2002 [1, 3, 6], Nobel *et al.*, 2002) [1, 3, 6]. *Opuntia ficus indica* is a xerophytic, juicy, prickly or spine-free CAM plant (crassulacean acid metabolism). The fig is the most cultivated edible cactus plant in the world and is widely distributed in Mexico and the South American continent. It is also cultivated in many other regions of the world, such as Africa, the Mediterranean, Australia, and the southwestern United States (Mohamed-Yasseen *et al.*, 1995 [4] a; Piga, 2004) [5]. The cactus pear is known as a multipurpose plant because it can be used for human consumption (fruits and vegetables), animal feed, medicinal and ornamental plants (Casas and Barbera, 2002 [6]; Rodríguez-Félix, 2002). This plant is considered a good indicator of harmful substances (Nobel, 1994) [2]. The low productivity of native forage plants hinders animal nutrition during the dry season. In the arid and sub-arid regions of Morocco, *Opuntia* clones are an alternative for feeding cattle and goats as a valuable food resource. Prickly pears have been cultivated in Morocco for many years, especially in arid areas. *Opuntia* plants are not only grown for fruit production, but also as defense hedges or for protection against erosion in reclaimed areas. Recently, prickly pear production has increased due to an increase in surface area (Boujghagh and Chajia, 2001) [8]. Many types of cacti have been micropageed by multiplication of the axils. Based on the genus, the explants experienced on tissue culture were diverse: concluding shoots of seedlings lateral or vertical segments of plants or cladodes and simple areoles. Numerous studies have been reported unfolding the proficient and speedy multiplication of a variety of prickly pear cactus by "*In vitro*" microproagation (Escobar *et al.*, 1986 [9]; García-Saucedo *et al.*, 2005 [10]; Johnson and Emino, 1979 [11]; Rubluo *et al*., 1996 [12]; Smith *et al.*, 1991) [13], but, no common protocol is obtainable yet, since mainly plant responses to tissue culture are genotype-dependent and some significant changes and editions can be made to a novel species or diversity for which Tissue culture is considered (Estrada Luna *et al.*, 2008) [14], in particular to optimize the general environmental culture conditions, the type of medium, the concentration and the combination of plant hormones etc. during the shoot proliferation phase. Root and plant acclimatization conditions could also be examined as they could limit the success of micropropagation (Hartmann *et al.*, 1997) [15].

Traditional uses
Opuntia ficus indica is used in Mexico as a traditional medicine for the curing of burns, wounds, edema and indigestion. Its alcoholic extract has been suggested to have anti-inflammatory, hypoglycemic and antiviral activities. In addition, prickly pear cactus strains are traditionally used in Mexico to cure diabetes. It has also been suggested as medicine for hyperlipidemia (excess lipids in the blood) and obesity (Saenz, 2000) [16].

Nutritional content and bioactive chemical constituents of *Opuntia ficus-indica*
The chief constituent in *Opuntia ficus-indica* cladodes observed is water (80-95%), followed by small amounts of carbohydrates (3-7%), fiber (1-2%) and protein (0.5-1%); other compounds are only partially known and have not been quantitatively determined. The sugar moiety includes mucilaginous polymer-containing components, such as linked (1-4) β-D-galacturonic acid chains and R (1-2) linked L-rhamnose residues (Trachtenberg and Mayer 1981 [25, 22], Lee *et al.*, 2003) [23].
The physiological role of plant mucilage is to regulate cellular water content during prolonged drought and to regulate plant calcium fluxes. (Hernández-Urbiola *et al.*, 2011 [27], Rodríguez-García *et al*., 2007) [28] *Opuntia ficus-indica* cladodes also represent a source of phytochemicals,

such as phenolic acids and flavonoids (Ginestra *et al.*, 2009) [29].

Pharmacological effects and mechanism of action of *Opuntia ficus indica*

Anti-ulcer activity

In Sicilian traditional medicine, *Opuntia ficus indica* (L.) Mill. Cladodes are popular to cure gastric ulcers (Galati *et al.*, 2001) [19]. The pre-treatment experiment in rats exposed a protective result to treat ethanol-induced ulcers (Galati *et al.*, 2003) [21]. It was evident that keen direction of *O. ficus indica* lyophilized cladodes usually sustains the gastric cytoarchitecture. The mucus can avert the necrotizing agent from entering the gastric mucosa. It also create outline of protective layer and stops deep necrotic lesions created by ethanol (Trachtenberg and Mayer, 1981) [25, 22].

Anti-inflammatory activity

Abundant reports have revealed the analgesic and anti-inflammatory possessions of the genus Opuntia via either fruit extract, lyophilized cladodes or phytosterols from fruit and stem extracts (Park *et al.*, 1998) [18]. *Opuntia ficus indica* has been suggested to comprise anti-inflammatory activity. B-sitosterol has been recognized as an vigorous anti-inflammatory factor from the stem extract, even though its activity emerges to be comparatively weaker than that of hydrocortisone (Park *et al.*, 2001) [19].

Neuroprotective activity

Opuntia ficus-indica has been suggested to have a neuroprotective consequence in primary cultured rat cortical cells (Dok-. Go *et al.*, 2003). *Opuntia ficus indica* have three flavonoids, quercetin, (+) - dihydroquercetin and quercetin-3-methylether, which are mentioned as active antioxidant protective factors. *Opuntia ficus indica* has known to have a protective consequence against the oxidative damage induced by H_20_2, xanthine / xanthine oxidase (X / XO) or buthione sulfoximine (BSO) in primary cultured rat cortical cells, which restrains lipid peroxidation and interrupts DPPH radicals (Dok-Go *et al.*, 2003) [23].

Anti-viral activity

An appealing study by Ahmad *et al*. (1996) [17] revealed that the administration of a cactus strain extract *Opuntia ficus indica* to mice, horses and humans created the intracellular replication of a number of DNA and RNA viruses such as herpes simplex virus type 2, equine herpes virus, pseudorabies virus, Influenza virus, slowdowns respiratory syncitial disease virus and HIV-1. Inactivation of extracellular viruses has also been reported by the same authors. Though, the vigorous inhibitory components of the cactus extract used in this study have not been examineD and so far no further study has dealt with this specific topic.

Anti-diabetic property activity

In one study of cactus pear as Anti diabetic agent, an experiment was conducted. Alloxan was applied as a single dose (130 mg / kg body weight) to bring diabetes in rats. A single or repeated dose of cactus fruit juice (5 ml once, twice, three or four times / rat) was orally given on daily basis to alloxane-induced diabetic rats till five weeks. Study revealed that treatment of diabetic rats with a single or repeated dose of cactus juice could convey thealter in the Antioxidant enzymes parameters in positive manner back to rat's normal values (Hassan *et al.*, 2011) [24].

Conclusion

Opuntia ficus-indica (L.) Mill. which live on hundreds of thousands of hectares, form a potential plant as a fruit tree, mainly due to their edible fruits and vegetable mass, which are consumed as food. The ever increasing demand for young plants for cultivation requires the research of fast, competent and profitable protocols, which guarantee the increase of the conventionality. Plant tissue culture is one of them, which gives this plant an enormous increase. This technique plants will be beneficial to Framer's view.

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Prevalence of Dermatophytosis in Badaun, Uttar Pradesh, India

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Authors' contributions

This work was carried out in collaboration between both authors. Author PS designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author ND managed the analyses of the study and also managed the literature searches. Both authors read and approved the final manuscript.

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ABSTRACT

Dermatophytoses is a superficial fungal infection of tissues having keratin. The responsible fugus are dermatophytes. The infection is usually designated as ring worm or "tinea". It is observed worldwide with higher prevalence in tropical countries and areas due to high rates of humidity, moisture and high sweating in summer. Recurrent dermatophytosis is a challenge for dermatologists in India and constituted 9.3% of all patients of dermatophytosis. The present study is conducted to reveal the prevalence of dermatophytosis in patients attended in the Maheshwari Hospital and Diagnostic Centre in Badaun. A survey was done for a period of one and half year. The samlples were obtained from Maheshwari Hospital and Diagnostic Centre, Badaun, Uttar Pradesh. A total of 300 patients were included in the study. Physical observation, KOH test, Microscopy and culture tests were performed for screening and confirmation of various fungal infections. Clinically the prevalence of dermatophytosis was 60% that was observed more in males. Patients with age group 16–30 and 31–40 years were more affected.

Keywords: Dermatophytosis; fungal infection; Pityriasis versicolor; Candidiasis; Tinea corporis; Tinea cruris.

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1. INTRODUCTION

Fungal infections are very common because it affects a significan number of people. The word 'superficial mycoses' means the skin infection. It affects more than 20–25% population globally [1]. It is mainly caused by Trichophyton, Epidermophyton and Microsporum which are the keratinophilic mycelia fungi known as dermatophytes. These dermatophytes invade the stratum corneum of the keratinized tissues [2,3].

The Dermatophytosis presents high morbidity and several psychological effects. It decreases average working days of patient. Dermatophytosis is favoured by poor hygiene and, hot and humid conditions. It is common in tropical and temperate countries [4]. These pathogenic fungi invade the keratinized tissues like nails, skin and hair. This superficial infection is known as Dermatophytosis which is present in humans and in animals also [5]. Dermatophytes are classified into three genera Microsporum, Trichophyton and Epidermophyton. The most common fungal infections are those that infects the skin and produce non-life threatening skin rashes. Similar infections may also be caused by few Candida and non-dermatophytic molds viz. genera Fusarium, Aspergillus and Scopulariopsis [6]. Topical therapy with creams or lotions is more commonly used to treat these type of infections. Indiscriminate use of antibiotics, geographic area, climate, immunocompromised condition, overcrowding, hygiene culture and socioeconomic status are the factors can effect the prevalence of fungal infections.

The identification of fungi was based on the combination of microscopic, cultural characteristics, morphological characteristics and biochemical study. The specimen were inoculated on Sabouraud Dextrose Agar and incubated at 30°C for two weeks. Colonies were identified on the basis of microscopic & cultural characteristics, pigment formation and lacto phenol cotton blue staining [7].

2. MATERIALS AND METHODS

2.1 Sample Collection and Processing

A total of 300 clinical samples were collected from patients of Maheshwari Hospital and Diagnostic Centre, Badaun, Uttar Pradesh, India. Information such as gender, age of patient, nature of infection, symptoms, previous history, clothing and condition of personal hygiene were also recorded. The samples were taken from skin, hair and nail clippings from the patients, depending on the clinical condition of the patients and the suspected site of infection. The infected area was wiped with 70% ethanol, allowed to dry after that the samples were collected. Sample is divided into two parts, one half for KOH preparation and other half for culture on Sabouraud's Dextrose Agar (SDA) media (TM Media, Delhi, India).

2.2 KOH Preparation

A portion of the sample was taken on a grease-free slide for microscopy. The specimen was then subjected to potassium hydroxide (KOH) wet preparation of various concentrations (10%, 20% and 40%) depending upon the type of clinical specimen for the presence of fungal elements. The prepared slides were later observed under low power (10X) and high power (40X) magnification of a compound light microscope for the presence of fungal elements.

2.3 Culture on SDA Media

Other half part of specimen is inoculated on the slants of Sabouraud's Dextrose Agar (SDA) prepared with 50 mg/l cycloheximide and 500 mg/l chloramphenicol (Sigma, Missouri, US). Innoculated culture tubes were incubated at 28°C for 3-4 weeks. Fungal elements were identified by macroscopic and microscopic examination. Macroscopic examination included growth time, surface morphology and production of pigments while in microscopic observation, lacto phenol cotton blue dye (LCB) staining was performed followed by examination under the compound light microscope at 10X and 40X power of objective lens to examine the microcondia and macroconidia.

3. RESULTS AND DISCUSSION

Out of 300 patients of dermatomycosis, 150 cases of dermatophytosis (50%), 100 cases of pityriasis versicolor (33.3%) and 50 cases of candidiasis (16.6%) were identified on the basis of preliminary examination (Table 1). Among the 150 clinical samples dermatophytosis, 130 were KOH positive out of them 90 samlples (60%) were culture positive (Table 2). Dermatophytosis was the commonest superficial fungal infection in 90 culture positive cases (60%) followed by *Pityriasis versicolor* 50 (50%) and candidiasis in 20 (40%) cases (Table 2).

The diagnosis of different clinical types of dermatophytosis in Badaun was presented in Table 3. The results indicated that dermatophytosis was a common skin infection in Badaun. Out of 150 cases of various types of dermatophytosis, 75 cases of *Tinea corporis* were reported and 73 (97%) were positive for KOH test and 58 (77%) were confirmed in SDA culture (Table 3). The predominant clinical manifestation type of dermatophytosis was *Tinea cruris* and *Tinea corporis* was the second most common dermatophytic infection among all the clinical types of dermatophytosis out of 30 cases, 27 (90%) were KOH-positive and 15 (50%) patients were observed positive in culture. Similar The present study is coincideses with earlier research. Balakumar et al. and Rassai et al. have repoted the similar results [8,9]. After *Tinea cruris*, *Tinea capitis* was the third in the prevalence of dermatophytic infections as shown in Table 3 for KOH-positive and culture-positive percentage. Incidence of *Tenia capitis* was observed comparatively low in our study which similar in a study by Jain et al. [10].

Age group 0-15 years appeared to be prone for *Tinea capitis*. Low amount of fungistatic fatty acids, sharing of towels, low hygienic levels at this age are responsible factors for this [11]. The role of altering pattern of hormones and inhibitory fatty acids are responsible for tolerance for *Tinea capitis* with increasing age [12,13]. *Tinea pedis* was the fourth most common type of clinical fungal infection among all dermatophytic infections. For *Tinea pedis*, 40% culture-positive cases were reported. Most of the patients were from economically low background as they have to work bare hand and footed. At different places the incidence of occurance of *Tinea pedis* also varies [14,15]. Our findings are similar to the findings of earlier researchers [10]. Other types of dermatophytosis such as *Tinea faciei, Tinea manuum* and *Tinea barbae* were found less frequent (Table 3).

Table 1. Different types (on the basis of preliminary examination) of Dermatomycosis included in the study (n=300)

Mycosis	Total no of samples	% of cases
Dermatophytosis	150	50%
Pityriasis versicolor	100	33.3%
Candidiasis	50	16.6%

Table 2. KOH-positive and culture positive cases of each type of Dermatomycosis from respective total cases

Mycosis	Total no of samples	KOH +ve	% KOH +ve	Culture +ve	% culture +ve
Dermatophytosis	150	130	86%	90	60%
Pityriasis versicolor	100	50	50%	50	50%
Candidiasis	50	40	80%	20	40%
Total	300	220	73.3%	160	53.3%

Table 3. KOH-positive and culture-positive cases of different types of Dermatophytosis from respective total cases

Clinical types	Total no. of samples	No. of KOH +ve cases	% KOH +ve cases	No. of culture +ve cases	% of culture +ve cases
Tinea corporis	75	73	97%	58	77%
Tinea cruris	30	27	90%	15	50%
Tinea capitis	20	15	75%	9	45%
Tinea pedis	15	10	66%	6	40%
Tinea manuun	5	3	60%	1	20%
Tinea faciei	3	2	66%	1	33%
Tinea barbae	2	1	50%	0	0%
Total	150	130	86%	90	60%

Out of 90 culture positive cases of dermatophytosis, 73 (81%) were males and 17 (18.9%) were female. In all age groups, percentage of infection was observed more in males than females. In the age groups of 0-15 years, the percetage of males were 10 (11.1%) and females were 2 (2.2%). In 16-30 years age group, again prevalence was higher in males. The number and percentage of male were 33 (36.6%) females were 10 (11.1%). In 31-40 years age group, males were 22 (24.4%) as compared to females 5 (5.5%). In age group of 41-50, 51-60 and beyond 60 years again same prevalence was reported. Dermatophytosis occurred in all age groups but age group 16–30 and 31–64 were observed more susceptible most probably because it is physically more active age group, which is supported by other studies also [16,17]. Males were observed to be more susceptible for dermatophytosis (Table 4), which have been supported in few earlier studies also [18,19]. Non-reporting by females due to hazitation in rural areas may also be one of the reason of their lower prevelance rate [20,21]. Sweat retention due to many reasons such as tight uniform, closed footwears for long time and sharing of daily use stuffs facilitate dermatophytosis in males [20,21].

Dermatophytosis is one of the most common communicable disease. It infect humans and animals as well globally although some of the infections are present with higher prevalence in tropical countries [22,23]. Many factors are responsible for their higher prevalence such as humid and hot environment in and around Badaun. Poor hygiene and illiteracy also responsible for higher incidence of dermatophytosis.

Table 4. Distribution of culture positive Dermatophytosis cases according to age group and sex (with respect to total culture positive Dermatophytosis cases i.e. 90)

Clinical type	Gender	Age group						Total
		0-15	16-30	31-40	41-50	51-60	>60	
Tinea corporis	M	3(3.3%)	20(22.2%)	18(20%)	5(5.5%)	2(2.2%)	1(1.1%)	49(54.4%)
	F	-	6(6.6%)	3(3.3%)	-	-	-	9(10%)
Tinea cruris	M	1(1.1%)	7(7.7%)	3(3.3%)	-	-	-	11(12.2%)
	F	-	2(2.2%)	2(2.2%)	-	-	-	4(4.4%)
Tinea capitis	M	5(5.5%)	1(1.1%)	-	-	-	-	6(6.6%)
	F	2(2.2%)	1(1.1%)	-	-	-	-	3(3.3%)
Tinea pedis	M	-	5(5.5%)	-	-	-	-	5(5.5%)
	F	-	1(1.1%)	-	-	-	-	1(1.1%)
Tinea manuum	M	-	-	-	1(1.1%)	-	-	1(1.1%)
	F	-	-	-		-	-	_
Tinea faciei	M	1(1.1%)	-	-		-	-	1(1.1%)
	F	-	-	-		-	-	_
Tinea barbae	M	-	-	-		-	-	_
	F	-	-	-		-	-	_
Total	M	10(11.1%)	33(36.6%)	22(24.4%)	5(5.5%)	2(2.2%)	1(1.1%)	73(81%)
	F	2(2.2%)	10(11.1%)	5(5.5%)	-	-	-	17(18.9%)

Fig. 1. Tinea capitis

Fig. 2. Tinea manuum

Fig. 3. Tinea pedis

4. CONCLUSION

It can be concluded that drmatophytosis was the commonest superficial fungal infection in patients of Badaun. *Tinea corporis* was the most common clinical manifestation of dermatophytosis. Males are more susceptible than females especially at the age group of 16-30 years.

CONSENT

As per international standard or university standard, patients' and parental written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

The approval for data collection was obtained from Maheshwari Hospital and diagnostic centre from April 2016 to October 2017 for this enroll no JVRI-I/15/6026.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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LITERARY REVIEW ON SHANKHA

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Abstract
Ayurveda comprise of drugs derived from herbs,minerals, metals and animals. But they can't be taken as it is, hence need to be converted into such form which will be therapeutically fit for use. *Rasashastra* is the most important and popular branch of *Ayurveda* which was developed in the medieval period. *Bhasma* are the unique dosages form of *Ras Shastra*, prepared after proper bhavana with particular herbs with particular metals and

minerals and later they are subjected to puta in a particular manner and due to its fineness and nano particle size it turn into most assimilatory, harmless and therapeutically effectual form

Key words-Rasashastra ,shankha,bhasma

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Introduction:

Shankha is known to humans since history, they are mainly used it as ornament, medicine etc. Meaning of term Shankha is "Shankha iti jalajantu vishesha" [1] i.e. a special type of marine animal. According to Sir Monier Williams Dictionary [2] "Conch shell". It is the shell of a species of large predatory sea snail ,turbinella pyrum,which lives in the Indian ocean and surrounding seas.it is considered to be one of the sacred and most auspicious objects that emerged from the sea during the kshira sagar samudra manthan . In Rasa shastra shankha is included under sudha varga dravya i.e calcium group of drugs i.e well known since vedic period but its internal use was seen from samhita period.shankha are mostly found in shallow ocean coast with abundant sea weed. The most characteristic feature of this class is the spirally coiled shell. [3] On the basis of size conch can be divided into two varieties, big size conch and small size conch. The big one measures 8-10" in length and 6-7" in breadth, weight around 2.5 kg. Small size conch is generally 4' in length and 2-3" in breadth.[4] According to *Rasa-tarangini* 2 types of Shankha –*Dakshinavarta and Vamavarta. Dakshinavarta* is rare to find and is considerd for religious purposes where as *Vamavarta variety* is used for Therapeutic purpose.[5] *Shankha bhasma* is used in diseases like *Amlapitta, Agnimandhya, Atisara, Parinaamshula, Grahni, and Ajirna, Visha.* [6]

Vernacular names

Sanskrit	- Shankha
Hindi	- Shank
English	- Conch
Tamil	- Sangu
Kannada	-Shankha
Latin	-*Turbinella pyrum*

Scientific Classification-

- Kingdom : Animalia
- Phylum : Mollusca
- Class : Gastropoda
- (unranked) : clade Caenogastropoda

clade Hypsogastropoda
clade Neogastropoda

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- Super family : Muricoidea
- Family : Turbinellidae
- Genus : *Turbinella*
- Species : *T. pyrum*
- Binomial name *Turbinella pyrum* Linnaeus, 1758.

Table No 1 Showing Paryayas of shankha

Kambu	One which is available from Kambhoja desha
Trirekha	One which has three lines on it
Samudraja	That which is created in Samudra (sea)
Sunaada	One which produces a particular sound which is auspicious
Deergha naada	That which can produce a sound for long duration
Kambhoja	That which is created from place called a Kambhu
Arnabhava	One which is formed in Arna (Sea)
Jalaja	One which takes birth in jala
Paavana dhwani	That which produces auspicious sound
Maha naada	Instrument with which can produce a sound of great importance
Suswara	One which produces an auspicious sound
Bahunada	Instrument with which can produce a sound

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Haripriya	One instrument which LORD Vishnu likes the most
Shri vibhushana	One instrument which LORD Vishnu holds along with other things like Chakra , Gada, Padma etc
Dhavala	One which is having a noble color
Jalada	One which takes birth in jala
Deerghanistana	One which has got an elongated shape
Vaari sambhava	One that takes birth in vari (water)

Table no 2 showing paryayas of shankha according to various classics

Synonyms	R.T	R.S.S	B.P.N	A.P	K.N	Sh.N	R.N	D.N
Shankh	+	-	+	+	-	+	-	-
Shankaka	+	-	-	-	-	-	-	+
Trirekha	+	-	-	-	-	+	-	-
Samudraja	+	-	+	+	-	+	-	-
Sunada	+	-	+	-	-	+	+	-
Deerghanada	+	-	-	-	-	-	+	+
Kambooja	+	+	-	-	-	+	-	-
Kshudra	-	-	-	+	-	-	-	-
Shankhanakha	-	-	-	+	-	-	-	-
Varichara	-	-	-	-	+	-	-	-
Jalaja	-	-	-	-	+	+	+	+
Dirghaniswanah	-	-	-	-	+	+	-	+
Suswarah	-	-	-	-	+	-	+	+
Dhavala	-	-	-	-	+	-	+	+
Kambu	-	+	+	+	-	+	-	+
Srivibhusanah	-	-	-	-	-	+	-	+
Pavanadhwani	-	+	+	-	-	+	+	-
Arnobhava	-	-	-	-	-	+	+	-
Antakutila	-	-	-	-	-	+	-	-

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Mahanada	-	+	-	-	-	+	-	-
Swetaputha	-	-	-	-	-	+	-	-
Mukharadeerghanada	-	-	-	-	-	+	-	-
Bahunada	-	-	-	-	-	+	+	-
Haripriya	-	+	-	-	-	+	-	-
Surachara	-	-	-	-	-	+	-	-
Jalodhbhava	-	-	-	-	-	+	-	-
Vishnupriya	-	-	-	-	-	+	-	-
Kutilanta	-	+	-	-	-	-	+	-
Puta	-	-	-	-	-	-	+	-
Antarmahanad	-	-	-	-	-	-	+	-
Mangalprad	-	-	-	-	-	-	+	-

Table no 3 showing Classification of shankha[7] **–**

Name of *Varga*	**Reference**
Shukla Varga	• *Rasarnava*(5/40), • *Dhanvantri Nighantu*(63, pg 271), • *Rasa Ratanakar*(2/6), • *Raj Nighantu*(67, pg 669)
Sudha Varga	• Rasamritam
Uprasa varga	• *Bhavaprakash Nighantu* 101/pg 614, • *Dhanvantari Nighantu* (87-88/pg 275), • RasaRatnakara(Ri.3/67), • *Rasendra Chintamani*(70/pg 98), • *Rasendra Sara Samgraha*(1/118-119), • *Ayurveda Prakasha*(2/346)
Suvarnadi varga	• *Madanpal Nighantu*(62-64/pg 118), • *Raj Nighantu*(120-122/pg 452)

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Dhatu Varga	• *Kaideva Nighantu*(131-132/pg 296), • *Bhavaprakasha Nighantu*(159/pg 622)
Vatapittaghana & Kaphapittaghana Varga	• *Siddha Mantra Prakasha*(73/33, 111/35-36)
Mansa Varga	• *Kaideva Nighantu*(34-35/pg 445), • *Bhavaprakasha Nighantu*(34/pg 710)
Svedaja Varga	• *Dravya Guna Vigyana*(Sharma, 2005, pg 60-61)
Chandanaadi Varga	• *Dhanvantari Nighantu*(159-160/pg 119), • *Sodhala Nighantu*(S.N.I.480/50, S.N.II 35/93)
Uparatana	• *Bhavaprakash Nighantu*. 189/pg 628, • *Dhanvantari Nighantu*(86/pg 275), • *Ayurveda Prakasha*(3/6)

Table no 4 showing Grahya lakshana of shankha [8]

According to Acharya Sadananda Sharma, he explains some of the lakshana for grahya variety39.

Vrutta	It should be Round shape
Snigdha	It should have slimy texture
Sookshma mukha	It should have a minute opening
Nirmala	Should have a clean surface
Indu sundara	Colour should be same to that of moon
Deergha kaaya	It should have a elongated body
Guru	It should be heavy

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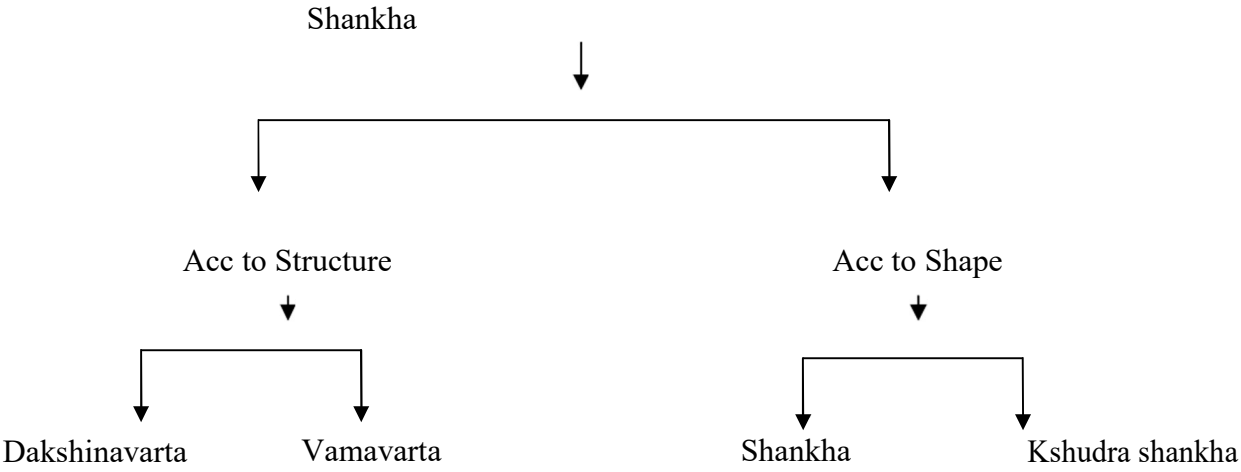
Chart no.1 showing types of shankha



Lakshanas of shankha
According to structure[9]:

- **Dakshinavarta**;

This is a rare variety in which the spiral growth of the shell of gastropods will be left handed, according to Indian tradition this variety is given very great importance. This variety is considered as very auspicious.

- **Vamavarta:**

In this variety spiral shell growth is right-handed, which is available abundantly, this variety is considered as best one which one should use for bhasmikarana procedure.

According to shape:[9]

- **Shankha** – Normal Conch which is available from the sea and which has got above said characters.
- **Kshudra Shankha** – This is another variety which is very small in size and these are available from the water sources other than sea.

Shodhana :

For purification of shankha, the selected sample of drug has to be tied in a cloth and hang in dola yantra containing amla varga dravya as liquid media. The swedana process is carried out over mild fire for one prahara (3 hours). Later the drug is collected from the cloth, washed in warm water, dried and stored as shuddha shanka.

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The same opinion of shanka shodhana is expressed by Rasamanjari, Rasendra sara Sangraha and Rasa tarangini. Following are the different methods employed for shankha shodhana;

1. Swedana in dolayantra for 4 prahara kala by using jambira swarasa as liquid media
2. Swedana in dolayantra for 1 yama kala by using jayanti swarasa as liquid media
3. Swedana in dolayantra for 1 yama kala by using tanduliya swarasa as liquid media
4. Swedana in dolayantra for 1 prahara kala by using kanji as liquid media
5. Swedana in dolayantra for half yama kala by using nimbuamla yukta jala as liquid media
6. Nimajjana in ghata yantra for 8 yama using nimbu rasa as liquid media

Marana:

- Marana of shankha is done by incenerating it with half of tankana in andhmusha.
- Shankha pieces heated over 10 sher coals or kande ,levigated in nimbu swarasa.After giving three bhavana rubbing and put in air tight box.
- Shankha pieces heated over smokeless coal or incinerate in laghuputa,after self cooling levigated in nimbu swarasa and after rubbing put in air tight box.
- Shodhita shankha is placed in sharava samputa,sandhi bandhan is done and dried ,and gajaputa is given.two gajaputa is indicated for the preparations of bhasma.
- Shodhita shankha is placed in sharava samputa,sandhi bandhan is done and dried, and gajaputa is given.this process is

Table No: 5 Showing Properties of shankha

	Dh .N [10]	B.P.N [11]	R.N[12]	A.P [13]	R.T[14]
Rasa	Madhura	-	Katu	kshara	Kshara
Guna	-	Laghu	Laghu, Lekhana	-	-
Virya	Ushna	Sheeta	Sheeta	sheeta	Sheetha
Vipaka	Katu	-	-	-	-
Doshghanta	-	Pitta kapha nashak	-	Tridosh nashak	-

Indication [15]-

Amlapitta, Grahani, Parinaamshula, Tarunyapidika, Atisara, Vishdosha.

Dosage

- 2 gunja(250mg-500mg)16
- 4-8 ratti(500-1000mg)17
- 250-300mg18

.

Formulations

Shankhavarti

Shankha bhasma

Kaphaketurasa

Lokanatha rasa

Hemagarbhapottali rasa

Ksharavati

Discussion and conclusion

In *Rasashastra*, *Shankha* categorised under *Sudha varga dravya* that is calcium group of. The main chemical composition in *Shankha* is CaCo3, but it also have trace amount of minerals which result in the transformation of therapeutic efficiency, also it can be used as calcium supplements. It is having the properties like *Madhur, Sheetal, Laghu, Kshar* etc so it can be prescribed in *Amlapitta,agnimandya, Grahani, Parinamshula, Udarshula, Atisara* etc. In classics many formulations are mentioned for treating numerous vyadhis.more analysis is to be inspired considering its various properties and therapeutic uses.

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AGRICULTURAL STATISTICS AND ITS APPLICATIONS

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Abstract

Statistics of agriculture subject have a extremely broad exposure and finds a large scope. It acts very essential role in the economy of a state or country. It is important for those countries which depends more on agriculture like india. This paper deals with the study of applications of agricultural statistics. This paper also consists of constituents and classification of agricultural statistics. It provides knowledge of GDP and economy of a country.

Key Words: Agriculture, Statistics, Applications, Constituents, Classification, Irrigation.

Introduction

Agricultural Statistics have done a key role in the improvement of agriculture sector in countries which are standing in developed category, but developing country such as India which depends more on agriculture is more important to apply this subject. India ranks second worldwide in farm outputs. According to data of 2018, 50% of the Indian work force are engaged in agriculture and 17-18% of country's GDP is coming from this.

The usefulness of subject of agricultural statistics is still more significant, because this subject has not been used efficiently thus far. The research of agricultural scientists depens on data coming from statistical and numerical information.

Initiation of present system of data processing has facilitated the planners of agricultural land to make use of latest technical systems and methodologies and requires for new more data.

The farming or agriculture of a place is found as the result of various forces like numerous corporeal, economic, communal, technological, political, organizational, and psychological which interact each other and, hence the different problems of agriculture and its development cannot be solved by partial and isolated approaches. A multidisciplinary advancement is required with a great system of data to solve these.

So, investigators, scientist and system planners have become more aware about the utilization of statistics of data. The data of agriculture are truths and it constructs the agriculture related to use of land area, irrigation, production in agriculture, forestry and worth of the commodities of agriculture.

The agricultural data means the information given in quantitative form may be in figure form on the different features of agriculture of a either micro or macro part. The considering area may be country, state, district, village, farm or the field itself. The agricultural data are useful in various fields like estimation, arrangement and predicting the operation of agriculture in the form of per unit area at a given period.

The subject agricultural statistics has wide coverage area with broad scope. The comprehensive statistics of agricultural is needed at national to various levels such as village and farm for decision making of agricultural policy and agricultural development and will be beneficial to estimates of the income of agricultural and national level.

Constituents of Agriculture Statistics

- Structure of agriculture: Census (at least decadal).
- Production & consumption related: Current surveys (yearly or cyclic)
- Cost of cultivation: use of inputs, agricultural labour′ wage rates
- Agro-processing
- Market Information
  - Price related: wholesale, retail, indices, farm gate, border.
  - Market arrivals, quantities transacted, international trade
- use of land or other kind of natural resources
- Infrastructure
- Finance – rural / agricultural credit
- Technology and Accumulation of resources: machinery of agricultural and tools

- Analytical / derived statistics:
  - Related to Food balance sheets and matrices of food accounting
  - Number of below nourished & other kind of development indicators
- Climate

Classification of Agricultural Statistics

- Utilization of land and irrigation, which include the sown region, gross area of cultivation, part of cultivable devastate, unsown which is other than current unsown, supplementary unfarmed land and land of irrigation in seasons of kharif and rabi, etc.
- Production by agricultural sector such as fertilisations, plantations and fisheries .
- Statistics which is related to organization of agriculture and farm compositions, e.g., (iv) Forestry.
- General statistics which is related to literacy of those employed in agriculture sector, health, sanitation field.
- Agricultural prices and wages.
- Statistics associated with climate, rainfall, temperature, soil and its pH value, etc.
- Weather Forecasting, crops and prices, etc.

Conclusion

Agricultural statistics is a very important subject. This paper presents a detailed study of applications of Agricultural statistics. It acts a key and important role in the growth of economy of a country. It is intensively important for the country like india which depends more on agriculture. This paper also consists of constituents and classification of Agricultural statistics. It shows the importance of this subject for GDP and economy of a country.

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HISTORICAL REVIEW AND THERAPEUTIC POTENCIAL OF DEVDARU : A REVIEW

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Abstract –
In ayurveda literature most of acharya mention devdaru in many disease and many formulations. Specially devdaru found in noth western Himalayas and it is very large, tall, evergreen, and long lived tree. Acharya susrurut, charka, vagbhatta and most of nighantu achartas mention devaru in many places. This study is basis on compiling theses places ans analize the uses of devdaru.
Key words – ayurveda, devdaru, nighantu

Introduction – Introduction – ayurveda is a ancient medical science which have keen observation on human and natural resorses. In ayurveda devdaru plant describe in many diseases and many conditions by most of the acharyas. In this study we describes acharya susruta, achrya charka, acharaya vagbhatta acharya shargdhar acharya bhavprakash and orher nighantus achayras. In this study we want to compare the efficacy of devdaru told in many refferance books in ayurveda.

Material and method – the drug devdaru reviewed from charak samhita , susruta samhita, astang hrudhya, bhavprakash and other nighantus.
All information was critically analyzed, discussed, and concluded.

OBSERVATION –
SAMHITA ERA- (SAMHITAKALA : 2000 B.C. – 1000 A.D.)- in samhita kala all acharya was described daruharidra. firstly achrya susruta described in many formulation and diseases as following.
DEVDARU IN SUSRUTA SAMHITA -

S. NO.	GROUP/FORMULATION	ACTION/INDICATION	REFERENCES
1.	Samidha	Yajaya	S.S.Su.2/4
2	Dhoopan	Varna Dhoopan	S.S.Su.36/22
3.	Tail Sidda	Varan Ropan	S.S.Su.36/27
4.	Sneha	Varna Shodhan	S.S.Su.45/123
5.	Pralepa	Vatarakta	S.S.Ci.5/7
6.	Chrna Kalpana	Kustha	S.S.Ci.9/47
7.	Asthapan	Prameha	S.S.Ci.11/7
8.	Kalk	Udar Rog	S.S.Ci.14/10
9.	Bala Tail	Sutika Rog	S.S.Ci.15/30
10.	Tail Sidh	Galgand	S.S.Ci.18/47

11.	Tail Pak	Anagat Baadha	S.S.Ci.24/27
13.	Niruh Basti Nirman	Niruh Basti	S.S.Ci.38/25
14.	Mahasugandhi Agad	Sarpa Vish	S.S.Ka.6/14
15.	Anjan	Vataabhishyand	S.S.U.9/14
16.	Anjan	Netra Roga	S.S.U.18/100
17.	Chaturvida Sneha Pak	Karn Puran	S.S.U.21/15
18.	Dhoompam	Nasastrav	S.S.U.23/10
19.	Shirolepa	Sirorog	S.S.U.26/22
20.	Kwath Se Sidh Dugh	Skanda Grah	S.S.U.28/5
21.	Dhoopan	Putna Grah	S.S.U.32/6
22.	Kwath	Jwara	S.S.U.39/204
23.	Yog	Amaatisar	S.S.U.40/36
24.	Yog	Amaatisar	S.S.U.40/42
25.	Grita	Gulama	S.S.U.42/35
26.	Varti	Dhoompan	S.S.U.51/5
26.	Churna Kalpana	Kaas	S.S.U.52/14
27.	Pathadi Gritha	Panchakasahar	S.S.U.52/30
28.	Grita	Vatajanya Swarbhang	S.S.U.53/12
29.	Kwath	Udar Rog	S.S.U.55/45
30.	Kwath	Udar Rog	S.S.U.55/50
31.	Kalk	Mutradoshahar	S.S.U.58/36
32.	Baladi Kalk	Mutra Dosahar	S.S.U.58/44
33.	Kalk & Kwath	Galgand	S.S.U.65/9

DEVDARU IN CHARKA SAMITA

S.NO.	GROUP/FORMULATION	ACTION/INDICATION	REFERENCES
1.	Parpondrikadi Lepa	Shirh-Shul Nashak Lepa	C.S.Su.3/24
2.	Musthadi Kwath	Skin Disorder	C.S.Su.23/12
3.	Sirovirechandravyakalp	Sirovirechan	C.S.Vi.8/151
4.	Brihtayadi Kwath	Sannipataj Jwara	C.S.Ci.3/209
5.	Aguruvadi Tail	Shitta Jwara	C.S.Ci.3/266
6.	Yog	Kustha	C.S.Ci.7/124
7.	Pradeha	Rajyakshama	C.S.Ci.8/78
8.	Kalyanak Grita	Unmad	C.S.Ci.9/42
9.	Yog	Shoth	C.S.Ci.12/22
10.	Yog	Shoth	C.S.Ci.12/25
11.	Tail	Shoth	C.S.Ci.12/64
12.	Lepa	Udar Rog	C.S.Ci.13/108
13.	Pipliyadi Kshar	Udar Rog	C.S.Ci.13/159
14.	Tumburuvadi Doopan	Arsh	C.S.Ci.14/51

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15.	Piplyadi Anuvasan	Arsh	C.S.Ci.14/131
16.	Lepa	Arsh	C.S.Ci.14/136
17.	Hiberadi Grita	Arsh	C.S.Ci.14/231
18.	Dasmuladi Grita	Grahni Rog	C.S.Ci.15/82
19.	Yog	Aampachan	C.S.Ci.15/99
20.	Kiratiktadi Churna	Grahni Rog	C.S.Ci.15/138
21.	Pancham Kshar	Grahni Rog	C.S.Ci.15/191
22.	Katukadi Grita	Pandu	C.S.Ci.16/48
23.	Vishaladi Phant	Pandu	C.S.Ci.16/60
24.	Mandour Vatak	Pandu	C.S.Ci.16/73
25.	Mandour Vatak	Pandu	C.S.Ci.16/102
26.	Vyosadi Grita	Pandu Rog	C.S.Ci.16/119
27.	Dhoom Varti	Dhoom Paan	C.S.Ci.17/78
28.	Kwath	Hicca-Swas	C.S.Ci.17/105
29.	Pathadi Asava	Hicca Swas	C.S.Ci.17/106
30.	Triusanadi Grita	Kaas	C.S.Ci.18/39
31.	Yog	Kaphaj Kaas	C.S.Ci.18/118
32.	Yog	Kaphaj Kaas	C.S.Ci.18/120
33.	Jivantyadi Leha	Kaas	C.S.Ci.18/178
34.	Khadiradi Lepa	Visarapa	C.S.Ci.21/89
35.	Yog	Granthi Visarapa	C.S.Ci.21/130
36.	Anjan	Visha Vicar	C.S.Ci.23/69
37.	Yog	Vishyukta Pashu-Chikitsa	C.S.Ci.23/232
38.	Amrit Grita	Visha	C.S.Ci.23/244
39.	Punarnavadi Tail	Vata Vicar	C.S.Ci.26/82
40.	Devdarvyadi Tail	Karn Shul	C.S.Ci.26/223
41.	Kshar Tail	Karn Rog	C.S.Ci.26/225
42.	Mahaneel Tail	Palit Rog	C.S.Ci.26/267
43.	Yog	Urustamb	C.S.Ci.27/29
44.	Yog	Urustamb	C.S.Ci.27/30
45.	Yog	Urustamb	C.S.Ci.27/31
46.	Kusthadi Tail	Urushamb	C.S.Ci.27/43
47.	Mulkadi Tail	Vatavyadhi	C.S.Ci.28/169
48.	Mulak Tail	Vatavyadhi	C.S.Ci.28/173
49.	Agardi Lepa	Vatashonita	C.S.Ci.29/150
50.	Guduchyadi Tail	Yonivyapaat	C.S.Ci.30/60
51.	Anjandi Lepa	Fansanghat Vicar	C.S.Ci.30/266
52.	Kalk	Snigda-Sthanya Chikitsa	C.S.Ci.30/276
53.	Erandmuladi Niruh Basti	Vata Shul & Kapha Avarn	C.S.Si.3/39

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54.	Koshatki Niruh Basti	Kaphaj Vikar	C.S.Si.3/56
55.	Sayandhvadi Tail	Anuvasan Basti	C.S.Si.4/12
56.	Vidangadi Tail	Anuvasan Basti	C.S.Si.4/20
57.	Tail	Anuvasan Basti	C.S.Si.6/42
58.	Dugadh Pak	Parikartika	C.S.Si.6/66
59.	Bilvadi Basti	Basti Ayog Ki Chikitsa	C.S.Si.7/11
60.	Kwath	Deepan	C.S.Si.7/17
61.	Tail Pak	Anuvasan	C.S.Si.7/25
62.	Kwath	Aamaj Shul	C.S.Si.8/19
63.	Praksepa Dravya	Basti	C.S.Si.10/14
64.	Basti	Kapha Nasak	C.S.Ci.10/22
65.	Basti	For Cow	C.S.Si.11/25
66.	Niruh Basti	Niruh	C.S.Si.11/31

DEVDARU IN ASTANG SAMHITA -

S. NO.	GROUP/FORMULATION	ACTION/INDICATION	REFERENCES
1.	Upnaha Sweda	Swedan	A.H.Su.17/2
2.	Vacadi Gana	Amatisarnasak	A.H.Su.15/35
3.	Anu Tail	Nasya	A.H.Su.20/38
4.	Yog	Kapha-Vata Jwara	A.H.Ci.1/62
5.	Yog	Sannipataj Jwara	A.H.Ci.1/65
6.	Leha	Vata-Kapha Dosh	A.H.Ci.3/49
7.	Yog	Kasa	A.H.Ci.3/172
8.	Varti	Dhoompan	A.H.Ci.4/11
9.	Kwath	Hicca & Swas	A.H.Ci.4/28
10.	Tail	Nasya	A.H.Ci.6/27
11.	Churna	Anadravshul	A.H.Ci.6/57
12.	Tail	Anuvasan	A.H.Ci.8/90
13.	Grita	Tridosha Nasak Grita	A.H.Ci.8/131
14.	Devdaryadi Paan	Mutraghat	A.H.Ci.11/36
15.	Kasya Me Prasepa	Asathapan	A.H.Ci.12/2
16.	Grita	Gulma	A.H.Ci.14/25
17.	Kshar Agad	Gulma	A.H.Ci.14/103
18.	Pralepa	Udar Rog	A.H.Ci.15/48
19.	Kshar	Udar Rog	A.H.Ci.15/70
20.	Mandur Vatak	Pandu Rog	A.H.Ci.16/16
21.	Grita	Martikajanya Vicar	A.H.Ci.16/36
22.	Paan	Soth (Oedema)	A.H.Ci.17/2
23.	Tail	Abyang	A.H.Ci.17/23

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24.	Lepa	Ekang Soaf	A.H.Ci.17/26
25.	Lepa	Kapha Visarpa	A.H.Ci.18/15
26.	Madhu Ke Sath Prayog	Granthi	A.H.Ci.18/30
27.	Grita	Kustha	A.H.Ci.19/39
28.	Lepa	Kustha	A.H.Ci.19/86
29.	Basti	Lekhan & Dipan	A.H.Ka.4/7
30.31.	Niruh Basti	Kaphaj Ro	A.H.Ka.4/17
32.	Tail	Anuvasan	A.H.Ka.4/63
33.	Basti	Pakwasya Me Dosha	A.H.Ka.5/19
34.	Churn Ko Gritha Ke Sath	Vata Dusit Sthanya	A.H.U.2/12
35.	Kwath	Sthanya Dosha Nasak	A.H.U.2/25
36.	Grita	Sisu-Sosha Nasak	A.H.U.2/51
37.	Dhoop	Balgrah Nasak	A.H.U.3/56
38.	Bali	Yaksha –Grah Ki Chikisa	A.H.U.5/35
39.	Kalyanak Grita	Unmad	A.H.U.6/26
40.	Varti	Soaf & Kandu	A.H.U.11/9
41.	Dugdh Pak	Tarpan	A.H.U.13/59
42.	Anjan	Pill Rog	A.H.U.16/54
43.	Lepa	Kanth Rog	A.H.U.22/57
44.	Tail	Vataj Galgand	A.H.U.22/68

DEVDARU IN SARANGDHAR SAMHITA

S. NO.	GROUP/FORMULATION	ACTION/INDICATION	REFERENCES
1.	Asthadasang - Kwath	Parsavashul & Sannipataj Shul	M.K.2/43
2.	Devdarvyadi – Kwath	After Delivery Problems	M.K.2/49
3.	Trifladi – Kwath	Worm Infections	M.K.2/76
4.	Rasnasaptak – Kwath	Jangha-Katigraha	M.K.2/88
5.	Maharasnadi – Kwath	Sarva Vata Rog	M.K.2/90
6.	Chavyadi Kwath	Udar – Rog (Abdominal Problems)	M.K.2/119
7.	Punarnavadi Kwath	Oedema	M.K.2/123
8.	Sudarsan Churna	Fever	M.K.6/30
9.	Lavantritayadi – Churna	Enlargement Of Liver	M.K.6/102
10.	Ajmodadi – Churna	Amavata (Rheumatism)	M.K.6/115
11.	Paniyakalyanak Ghrit	Epilepsy	M.K.9/38
12.	Laksadi – Tail	Visma Jwara	M.K.9/94
13.	Prasarni – Tail	Vata – Kapha Rog	M.K.9/121
14.	Shatawari – Tail	Aphrodisiac	M.K.9/136
15.	Marichyadi Tail	Skin Disorder	M.K.9/149

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16.	Pshar – Tail	Ear Disease	M.K.9/175
17.	Vajri – Tail	Skin Disorder	M.K.9/188
18.	Vacha –Tail	Scrofula	M.K.9/195
19.	Dhatur – Tail	Vata Rog	M.K.9/202
20.	Kumara – Asava	Diabetes	M.K.10/22
21.	Devdarvyadhya - Aritha	Diabetes	M.K.10/53
22.	Khadir – Aritha	Skin Disease	M.K.10/60
23.	Dashmul – Aritha	Vata Rog	M.K.10/89
24.	Amritanava – Ras	Cough	M.K.12/163
25.	Swachhandbharava- Ras	Vata Rog	M.K.12/168
26.	Upnaha – Sweda	Swedan	U.K.2/25
27.	Shiroroga – Yog	Headache	U.K.11/63
28.	Bijpuradi – Lepa	Oedema	U.K.11/79
29.	Galgand – Lepa	Scrofula	U.K.11/98

Discussion – acharya Sushruta has mentioned devdaru inVrana chikitsa, vatrakta, kustha, premeha, udar- roga galgand, anagat badha, sarp- visha, netra roga, karn roga, siro-roga, balgarh, jear,kas and mutra dosha.Acharya charka mentiond devdaru in shirhshul, kustha, jwara, rajyakshama, unmaad, shoth, udar- roga, arsh, pandu, hicca-kas-swas, vish, karn roga, urustambh, vata shul and kaph avarn.Achrya vagbhayya says devdaru has been used in amatisar, jwar, hicca-swas- kas, mutraghat, udar-roga, sisu-sosha nasak, balgrah nasak, unmaad, netra rog nasak..Achrya sharangdhar also mentioned devdaru in parsvshul, sannipataj shul, sutika roga, krimi roga, udar roga, jwar, kustha, karn roga, prameha and netra roga etc.

Result and conclusion – The current review paper entitled with “historical review and therapeutic potencial of devdaru : a review” we found that all acharyas mention devdaru in many disease and many conditions. Most of are same or associated with each other and some are different.

Suggestions – more work should be done on devdaru and its indications which mentioned by our acharyas.

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STRESS MANAGEMENT IN AYURVEDA WITH CONTEXT TO VEDAS

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Abstract: - The man of 21st century is living the life under various stresses, strains and anxiety. Stress is often explained in terms of characteristics of the environment that are disruptive to the individual. The father of stress research Hans Selye described, stress "the non-specific response of the body to any demand."

As we can say, the term 'stress' is difficult to define and it may differ people to people.

According to Aacharya's, Stress depends on *Sattva*. People with *Pravara Sattva* do not get stressed easily. Whereas People with *Avara Sattva* are more prone to stress.

Introduction: - Stress is uncomfortable gap between how we would like our life to be and how it actually is. It's not necessary that stress effects different people in the same way. Response to stress either can be positive or negative.

Suddenly Occurring stress is called immediate stress.

Stress that we are facing in our daily life considered as daily hassles.

Stress can cause illness by impairing the workings of the immune system. The immune system guards the body against attackers, both from within and outside.

Stress can affect our body in different ways like increased bowel and bladder movements, increase in heart rate, increased blood pressure, obstruction of salivary glands, increased metabolic activities etc. It may result in insomnia, hypertension, asthma, heart diseases etc. Sometimes stress may lead to death by causing stroke.In Ayurveda, *Sattva* depends on *Mana.*

Stress Correlation to Ayurveda: - According to Ayurveda Acharyas, Every Process related to thinking, taking decisions etc. belongs to *Mana*. *Mana* performs its *Karmas* with the help of *Vyana Vatta.*The site of *vyana vayu* is *Hridaya* which is also the site of *mana*.There are three types of *Sattva* described in ancient ayurvedic literature.

i. *Pravara Sattva*

ii. *Madhyam Sattva*
iii. *Avara Sattva*

The *Avara Sattva* people get stressed more often.

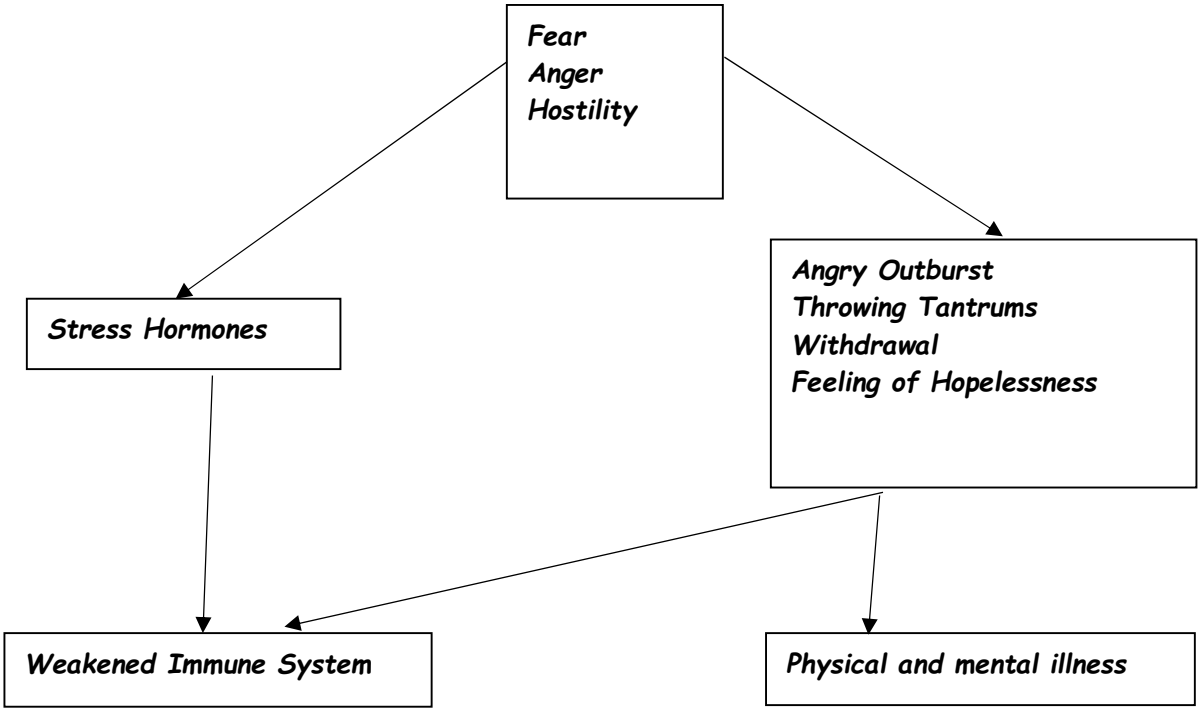
Reasons of stress: -

i. External: - Pain, Environment, Financial, Death of loved ones etc.
ii. Internal: - Insomnia, Intoxication, Negative thinking etc.

Types of stress: -

i. Short term / Acute: -Fight, Flight, Infection, Fear etc.
ii. Long term / Chronic: - Long financial issue, Relation issue, Living alone etc.

Relation of Stress with Illness: - Stress can lead to unhealthy lifestyle or health damaging behavior. Lifestyle is the overall pattern of decisions and behaviors that determine a person's health and quality of life. Stressed individuals may be more likely to expose themselves to pathogens, which are agents causing physical illness.



Coping: - Coping is a dynamic situation-specific reaction to stress. It is a set of concrete responses to stressful situations or events that are intended to resolve the problem and reduce stress. The way we cope with stress often depends on rigid deep-seated beliefs, based on experience.

To manage stress, we often need to reassess the way we think and learn coping strategies. People who cope poorly with stress have an impaired immune response and diminished activity of natural killer cells. Individuals show consistent individual differences in the coping strategies they use to handle stressful situations. These can include both overt and covert activities.

The three coping strategies given by Endler and Parker are:

i. Task-oriented Strategy: -This involves obtaining information about the stressful situation and about alternative courses of action and their probable outcome.

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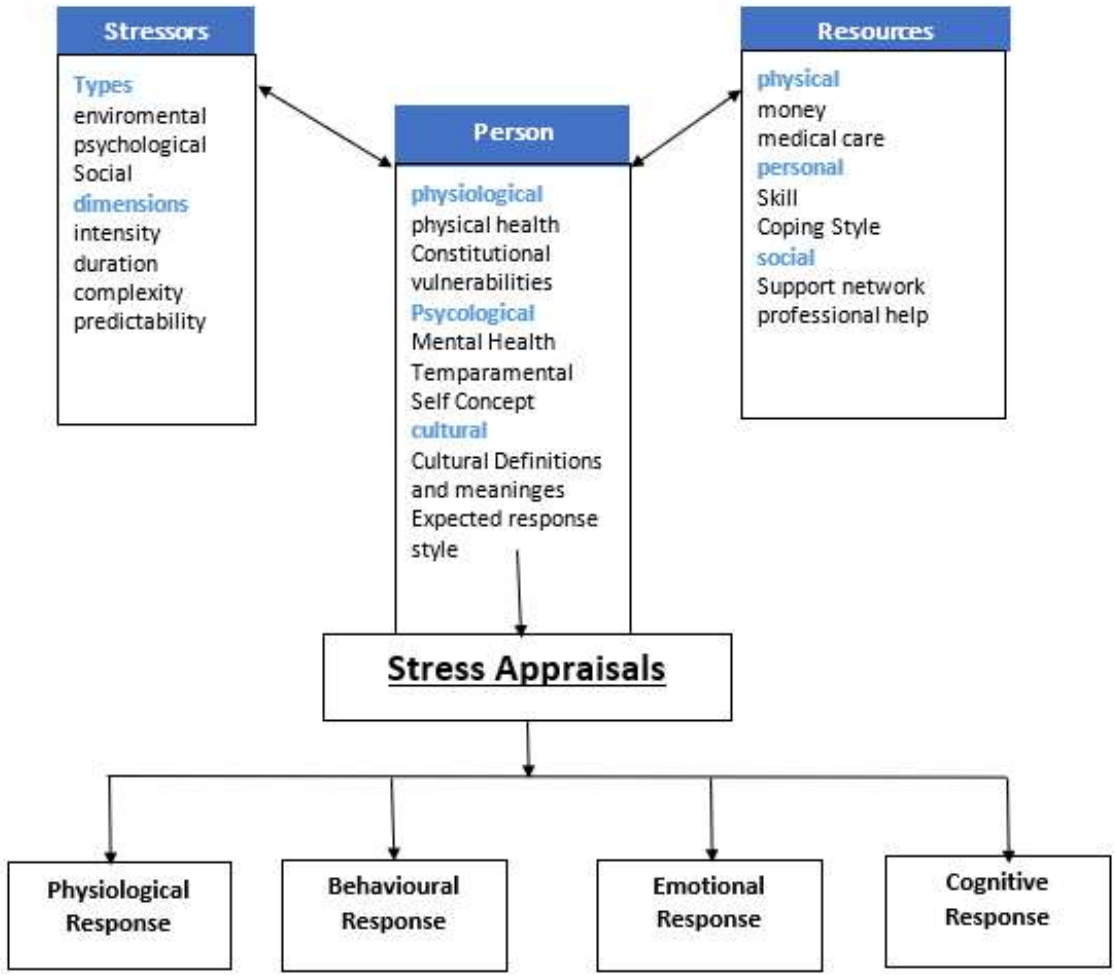
ii. Emotion-oriented Strategy: - This can involve efforts to maintain hope and to control one's emotions; it can also involve venting feelings of anger and frustration, or deciding that nothing can be done to change things.

iii. Avoidance-oriented Strategy: - This involves denying or minimizing the seriousness of the situation; it also involves conscious suppression of stressful thoughts and their replacement by self-protective thoughts.

Stress management Techniques: -

i. Relaxation Techniques
ii. Meditation procedures
iii. Exercise
iv. Aachar Rasayana
v. Sadvrita anusthannam

Discussion: - A GENERAL MODEL OF STRESS PROCESS



according to Ayurveda, With the help of *Mana* and *Buddhi, Indriyas* receives the knowledge of their respective subjects, in turn body makes necessary changes. Sometimes stressful conditions act as provoking agent, which disturbs the *Sanyoga* of *Indriyas* and *Mana.* This *Asatmayaindriyarthasanyoga* is known as *Indriyak Vyadhi.* In modern, these diseases are known as Stress Disorders.achar rasayana is unique concept of Ayurveda which deals with mind factor. Achar rasayana concept given by Acharya charak for nourishment of mana and atma which is also an important factor for human being.

Conclusion: - Stress can be described as pattern of responses of an organism to stimulus that disturbs the equilibrium and exceeds a person's ability to cope. Stress arises from blocking needs. Not all stress is inherently bad or destructive a little amount of stress acts as negative reinforcement to achieve the goals. *The amount of stress which enhances performance of individual and managing minor crisis is termed as* ***eustress***. But the stress more than eustress makes a person anxious, to think more and work less. So, the stress which is responsible for reduced performance is ***distress.***

Mechanism: A person can perceive changing environment as positive, neutral or negative with its consequences but if perceive negatively than harm, threat and challenge three things come in his mind for event and when it is stressful one move towards coping strategy. This coping varies person to person depending on type, intensity of stress and past experiences.

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IMPORTANCE OF MAKARASANA AND IT'S ANATOMICAL ASPECT IN HEALTHY LIFE

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Abstract
Introduction-*Ayurveda* is the science of life. It plays an important role to prevent and treat the disease. *Ayurveda* specifically deals with mind body balance. The main part of it is *Yoga* and *Asana*. *Yoga* provide us a simple remedies, facile skills and procedure of good health. *Asana* gives physical and mental power and tone the body-mind for further exercise. *Makarasana* is often referred to as the Crocodile Pose. It Strengthens the muscles of the rear, buttocks, legs, and also the back of the arms and legs. **Methods-** Texts related to *Yoga-Asana* and their commentaries. Other source are online information, print media, journals etc. **Result-** In *Makarasana* the spine is extended, the ankles are plantarflexed, the knees are extended,the hips are extended, internal rotated and adducted, the shoulder joint is internally rotated, the elbow are flexed, the forearms are pronated. **Conclusion-** The most important benefit of practicing this *Asana* is contraction of the muscles around the sacrum. It supports the spine, stimulate the sacrum and improves *Prana* flow through the entire spine and removed all blockage
KEYWORDS- *Yoga-Asana, Makarasana,* Crocodile Pose, *Prana.*

Introduction

Etymology- The word *Makarasana* is formed from two words first *Makar* means crocodile and the second *Asana* means posture. The posture is called *Makarasana* because in this pose the body seems as a crocodile taking rest in water keeping it's neck and face above the surface of water. It is a relaxing *Asana* which is performed to get relief from the strain caused by practicing other *Yoga-Asana. Makarasana* is a good *Asana* for all spherical stretching of the body. *Makarasana* gives strength and stretches the muscles of the rear, buttocks, legs, and also the back of the arms and legs. The crocodile posture in yoga is additionally an excellent pose to cut back stress and improves your body posture. The aim of *Makarasana* is to unleash strain caused by other Poses.

Common name- *Makarasana*
English Name: – Crocodile pose
Sanskrit Name: – *Makrasana, Nakarasana*
Meaning: – Crocodile
All- Crocodile Pose, *Makarasana, Nakarasana*
Level- beginner
Position- Prone

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Type- Restorative
Chakras- Crown *Chakra* (*Sahasrara Chakra*) , Sacral *Chakra* (*Swadisthana Chakra*) , Root *Chakra* (*Muladhara Chakra*)
Doshas (Ayurveda)- *Pitta* , *Kapha*
Mahabhootas (**Elements**)- *Aap* (Water) , *Prithavi* (Earth).

According to *GherandaSamhita*

One should lie on the ground facing downwards, the chest touching the earth, the two legs being stretched, catch the head with the two arms. This pose is called *Makarasana*. It increases the heat of the body.[1]

According to other texts

*Swami Satyananda Saraswati*explains *Makarasana*, lie flat on the stomach, lift the head and shoulders and rest the chin in the palms of the hands with the elbow on the floor. Keep the elbow together for a more pronounced arch to the spine. Separate the elbow slightly to relieve excess pressure on the neck. In *Makarasana* the effect can be felt at two points, the neck and the lower back. If the elbow are too far in front, tension will be felt in the neck, if they are brought too close to the chest, tension will be felt more in the lower back. Keep the position of the elbow proper so that these two points are equally balanced. The ideal position is when the whole spine is equally relaxed. Relax the whole body and close the eyes. After some time, again become aware of the body and surroundings again after sometime, and gently and smoothly release the posture.Breathing- Natural and rhythmic, or practice inhaling, moving the awareness up along the spine from the tail bone to the neck and exhaling, bringing the awareness back down from the neck to the tail bone. Feel the breath moving up and down the spine. This will quickly activate the healing energies in this area. For lower back pain due to tension, concentrate on this area and feel it expanding and relaxing with every inhalation and exhalation.[2]

According to *Swami Vyas dev ji*, lie down on the stomach, stretch the legs backwards. Placing the hands at your sides with palms resting on the ground, near the shoulders and elbow raised. Now balance the body on the palms and toes and jump about on the toes and palms like a lizard or move about on the toes and palms bringing them forward in order. Take care that the body remains balanced only on the toes and palms and stiff like a wooden plank.[3]

B.K.S Iyengar describe *Makarasana*, lie on the ground face down, the chest touching the earth and both legs stretched out, catch the head with the arms. This is the Crocodile Posture which increases bodily heat. It is a variation of *Shalabhasana*.[4]

Dhirendra Brahmachari explains *Makarasana* as, lie on the ground face downward and with the arms stretched forward.[5]

Benefits

This *Asana* is very effective in people suffering from slipped disc, sciatica, and some types of lower back pain. They should remain in this *Asana* for prolonged periods of time as it encourages the vertebral column to resume its normal shape and releases compression of the spinal nerves. Asthmatics and persons having any other lung diseases should practice this simple *Asana* regularly with breath awareness as it enables more air to enter the lungs.[6]

The whole body is exercised, perspired and fatigued. Circulation of blood quickens and it is thus purified. It strengthens especially arms, fingers and legs.[7]

This *Asana* helps in removing fatigue and is useful for the abdomen as well. Persons with irregular and bent bodies should practice it. The *Asana* generates subtle energies inside the body and furnish the body firm and strong like that of a crocodile. Long practice slows down respiration, an achievement of great importance to the *Yogi*.[8]

Technique of *Makarasana*-

- Lie flat on the ground on the stomach in prone position.
- Raise the head and both the shoulders.
- Fold the arms in the front and place the right arm above the left arm keeping the elbow pointing.
- Keep the left palm down on the ground and the right palm on the left arm, the fingers touching the inside of the elcrocodile.
- Put the head down on the center point where the right wrist is above the left wrist.
- Then close both the eyesand relax the whole mind and body.
- After sometime open the eyes and slowly release the posture.

Contraindications-

Those who suffers from-

- Severe back problems
- Stomach problem
- One having undergone recent trauma to the spine.

AIM AND OBJECTIVES

A. To elaborate the benefits and anatomical structures of *Makarasana*.

B. To escape from injuries which held by doing *Makarasana*.

MATERIAL AND METHODS

A. Texts related to *Yoga-Asana* and their commentaries.

B. Other source are online information, print media, journals etc.

Result

Muscles and ligaments involved in*Makarasana*

Joint actions

- The spine is extended
- The ankles are plantarflexed.
- The knees are extended.
- The hips are extended, internal rotated and adducted.
- The shoulder joint isinternally rotated.
- The elbow are flexed.

- The forearms are pronated.

The Spine

Similarly, to *Bhujangasana* and *Dhanurasana* in *Makarasana* also the spine is completely extended. All extensors of the back along with external oblique and transverse abdominus are contracted in *Makarasana*. These include the erector spinae muscles, transvers spinalis muscles, quadratus lumborum and Levator costarum.

The thoracic and lumbar spines are in extension. The muscles of anterior abdominal wall help in the Extension of trunk. These includes rectus abdominus, external oblique abdominus and internal oblique abdominus.

Table 1. Muscles performing spine extension in *Makarasana*.

Muscle	Position	Nerve supply
Erector spinae	Back	Lateral branches of the Dorsal rami of the cervical, thoracic and lumbar spinal nerves.
Iliocostalis	Back	Lateral branches of the Dorsal rami of the cervical, thoracic and lumbar spinal nerves.
Longissimus	Back	Lateral branches of the Dorsal rami of the cervical, thoracic and lumbar spinal nerves.
Spinalis	Back	Lateral branches of the Dorsal rami of the cervical, thoracic and lumbar spinal nerves.
Semispinalis	Back	Medial branches of the dorsal rami of the appropriate spinal nerves.
Multifidi	Back	Medial branches of the dorsal rami of the appropriate spinal nerves.
Rotatores	Back	Medial branches of the dorsal rami of the appropriate spinal nerves.
Levator costarum	Back	Dorsal rami C8-T11 (Intercostal nerves)
Quadratus lumborum	Posterior abdominal wall	Ventral rami of the twelfth thoracic and upper three or four lumbar spinal nerves.

Cervical region

Cervical spine is extended. In this position the extensors of cervical region are contracted. Trapezius, splenius capitis, splenius cervicis, semispinalis capitis and longissimus Capitis helps to extend the head and are contracted in this case. The suboccipital muscles are Rectus capitis posterior major, Rectus capitis posterior minor, Obliquus capitis inferior and Obliquus capitis superior are involved in extension of the head at the Atlanto-occipital joints and rotation of the head and atlas on the axis. These are also stretched in this *Asana*.

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Table 2. Muscles performing cervical spine extension in *Makarasana*.

Muscle	Position	Nerve supply
Trapezius	Scapular	Spinal accessory nerve, C3 and C4.
Longissimus capitis	Cervical	Dorsal primary rami of C3 to C8 nerves.
Longissimus cervicis	Cervical	Dorsal primary rami of C4 to C8 nerves.
Splenius capitis	Cervical	Dorsal primary rami of C2 and C3 nerves.
Splenius cervicis	Cervical	Dorsal primary rami of C5 to C7.
Semispinalis capitis	Cervical	Greater occipital nerve (C2) and thethird cervical nerve (C3)
Semispinalis cervicis	Cervical	Dorsal primary rami of C3 to C5
Suboccipital muscles **1. Rectus capitis posterior major** **2. Rectus capitis posterior minor** **3. Obliquus capitis superior** **4. Obliquus capitis inferior**	Cervical	Suboccipital nerve or Dorsal primary rami of C1

Thoracic spine

It is extended. The superior thoracic vertebrae glide inferior and posterior. Iliocostalis thoracis, Longissimus thoracis, Spinalis thoracis, Multifidus, Semispinalis thoracis are active contracted in *Makarasana*.

Lumbar spine

It is extended. Extrinsic back muscles, in the superficial layers Latissimus Dorsi, Levator Scapulae, Rhomboids, trapezius contracts while extension of the lumbar region. Intrinsic muscles help in extension of lumbar spine, Iliocostalis, Longissimus, Spinalis, Semispinalis contracts while performing the *Makarasana*. Anterior abdominal wall muscles stretched in *Makarasana*.

Ankle and foot region

Ankles are planter flexed and foot is inverted. Muscles which produces the ankle planter flexion are gastrocnemius, soleus and it is assisted by the Plantaris, tibialis posterior, flexor hallucis longus and flexor digitorum longus.Feet are inverted by tibialis anterior and posterior. The musclesstretched passively are muscles of anterior and lateral compartment of leg and dorsum of foot.Anterior compartment of leg comprises of extensor digitorum longus, extensor hallucis longus, tibialis anterior and peroneus.

Table 3. Muscles performing ankle planter flexion in *Makarasana*.

Muscle	Position	Nerve supply
Gastrocnemius	Posterior compartment of leg	Tibial nerve (S1, S2)
Soleus	Posterior compartment of leg	Tibial nerve (S1, S2)

Plantaris	Posterior compartment of leg	Tibial nerve (S1, S2)
Tibialis posterior	Posterior compartment of leg	Tibial nerve (L4, L5)
Flexor hallucis longus	Posterior compartment of leg	Tibial nerve (L5, S1, S2)
Flexor digitorum longus	Posterior compartment of leg	Tibial nerve (L5, S1, S2)

Table 4. Muscles which are stretched at ankle joint in *Makarasana*.

Muscle	Position	Nerve supply
Tibialis anterior	Anterior compartment of leg	Deep peroneal nerve (L4-S2)
Extensor digitorum longus	Anterior compartment of leg	Deep peroneal nerve (L4-S2)
Extensor hallucis longus	Anterior compartment of leg	Deep peroneal nerve (L4-S2)
Peroneus tertius	Anterior compartment of leg	Deep peroneal nerve (L4-S2)
Peroneus longus	Lateral compartment of leg	Superficial peroneal nerve (L5, S1, S2)
Peroneus brevis	Lateral compartment of leg	Superficial peroneal nerve (L5, S1, S2)

Ligaments of Ankle joint

Foot is inverted hence the lateral collateral ligaments are stretched here these includes

- Anterior talofibular ligaments (ATFL)
- Posterior talofibular ligaments (PTFL)
- Calcaneofibular ligament

Knee region

Knee joints are extended. Muscles which works on knee extension are quadriceps femoris (four heads-vastus lateralis, vastus medialis, vastus intermedialis and biceps femoris). And it is assisted by tensor fasciae latae and articularis genu. The Flexor compartment or posterior compartment of thigh is stretched when the knee is extended. This comprises of the hamstring muscles which crosses the knee and hip joints.This hamstring group of muscles comprises of Semitendinosus, semimembranosus and biceps femoris.To sustain the extended position of the knees the extensors of knee are in active contraction. The quadriceps femoris muscle as a whole keep the knees extended. These include rectus femoris, vastus medialis, intermedialis and lateralis.

Table 5. Muscles performing extension of knee joint in *Makarasana*.

Muscle	Position	Nerve supply
Vastus medialis	Anterior compartment of thigh	Femoral nerve (L2-L4)
Vastus intermedialis	Anterior compartment of thigh	Femoral nerve (L2-L4)

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Vastus lateralis	Anterior compartment of thigh	Femoral nerve (L2-L4)
Rectus femoris	Anterior compartment of thigh	Femoral nerve (L2-L4)

Table 6. Muscles which are stretched at knee joint in *Makarasana*.

Muscle	**Position**	**Nerve supply**
Biceps femoris	Posterior compartment of thigh	Sciatic nerve (L5-S2)
Semitendinosus	Posterior compartment of thigh	Sciatic nerve (L5-S2)
Semimembranosus	Posterior compartment of thigh	Sciatic nerve (L5-S2)

Ligaments of knee joint

Knee joint is extended. In this position the maximum pressure is on the following ligaments.

- Anterior and Posterior cruciate ligament (ACL and PCL)
- Medial and Lateral collateral ligament (MCL and LCL)

Hip region

Hip joints are extended, internally rotatedand adducted at the time of performing *Makarasana*.The main muscles worked in the hip extension are the gluteus maximus and hamstrings. The other hip extensors are long head of biceps femoris,semimembranosus, semitendinosus and posterior adductor magnus. So, the flexor of the hip joint will get stretch.Adduction is performed by the adductors of the hip joint which are three groups of adductors, pectineus and gracilis. The adductors also internally rotate the hip joint along with tensor fasciae latae, gluteus Medius (anterior fibres) and some anterior fibres of gluteus minimus.

Table 7. Muscles performing hip extension, adduction and internal rotation.

Muscle	**Position**	**Nerve supply**
Gluteus maximus	Gluteal region	Inferior gluteal nerve (L5-S2)
Semitendinosus	Posterior compartment of thigh	Sciatic nerve (L5-S2)
Semimembranosus	Posterior compartment of thigh	Sciatic nerve (L5-S2)
Long head of biceps femoris	Posterior compartment of thigh	Tibial part of sciatic nerve
Adductor longus	Medial compartment of thigh	Obturator nerve (L2-L4)
Adductor brevis	Medial compartment of thigh	Obturator nerve (L2-L4)

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Gracilis	Medial compartment of thigh	Obturator nerve (L2-L4)
Pectineus	Medial compartment of thigh	Femoral nerve (L2, L3)
Tensor fasciae latae	Gluteal region	Superior gluteal nerve (L4-S1)

Table 8. Muscles which are stretched at hip joint in *Makarasana*.

Muscles	**Position**	**Nerve supply**
Sartorius	Anterior compartment of thigh	femoral nerve (L2, L3)
Vastus lateralis	Anterior compartment of thigh	femoral nerve (L2, L3)
Vastus medialis	Anterior compartment of thigh	femoral nerve (L2, L3)
Vastus intermedialis	Anterior compartment of thigh	femoral nerve (L2, L3)
Gluteus Medius	Gluteal region	Superior Gluteal nerve (L4, L5, S1)
Gluteus minimus	Gluteal region	Superior Gluteal nerve (L4, L5, S1)
Quadratus femoris	Gluteal region	Superior Gluteal nerve (L4, L5, S1)
Obturator internus	Gluteal region	Superior Gluteal nerve (L4, L5, S1)

Shoulder region

Shoulder joint is extended, adducted and internally rotated in the pose of *Makarasana*.The Extension of shoulder joint is caused by Posterior fibres of deltoid, Latissimus dorsi and assisted by the Teres major, Long head of triceps, Sternocostal head of the pectoralis major.The muscles acting as antagonists for this action are clavicular head of pectoralis major, anterior fibres of deltoid, coracobrachialis and short head of biceps. They are stretched when the shoulder joint is extended. Adduction of shoulder joint is principally done by the Pectoralis major, Latissimus dorsi, Short head of biceps, Long head of triceps, and it is assisted by coracobrachialis and teres majorwhich is antagonised by deltoid and supraspinatus.Medial rotation of shoulder joint is done by the pectoralis major, anterior fibres of deltoid, latissimus dorsi, teres major and subscapularis.The muscles acting as antagonists for this action areinfraspinatus, teres minor and posterior fibres of deltoid. Pectoralis minor muscle helps in depression and anterior tilt of scapula and is stretched by the posterior pull of scapula. Deltoid muscle has large range of action on shoulder joint. It helps in the abduction of shoulder joint,

the anterior fibers in flexion and posterior fibres in external rotation. Supraspinatus along with deltoid helps in abduction of shoulder joint. Infraspinatus and teres minor are external rotators along with the posterior fibers of deltoid.

Table 9. Muscles performing shoulder joint extension, adduction and internal rotation.

Muscle	Position	Nerve supply
Deltoid	Scapular	Axillary nerve(C5-C6)
Latissimus dorsi	Back	Thoracodorsal nerve (C6-C8)
Pectoralis major	Thorax	Medial and lateral pectoral nerve (C5-T1)
Biceps	Anterior compartment of Arm	Musculocutaneousnerve(C5-C7)
Coracobrachialis	Anterior compartment of Arm	Musculocutaneousnerve(C5-C7)
Triceps	Posterior compartment of arm	Radial nerve (C6-C8)
Teres major	Shoulder	Lower subscapular nerve(C5,C6)
Subscapularis	Shoulder	Upper and lower subscapular nerve (C5, C6)

Table 10. Muscles which are stretched at shoulder joint in *Makarasana.*

Muscle	Position	Nerve supply
Supraspinatus	Scapular	Suprascapular nerve (C5, C6)
Infraspinatus	Scapular	Suprascapular nerve (C5, C6)
Teres minor	Scapular	Axillary nerve (C5, C6)
Trapezius	Scapular	Accessory nerve
Levator scapulae	Scapular	Dorsal scapular nerve (C4, C5)
Serratus anterior	Scapular	Long thoracic nerve (C5-C7)
Pectoralis minor	Thorax	Medial and lateral pectoral nerve (C5-T1)

Elcrocodile region

Elbow are flexed and forearm is pronated. Flexion of the elcrocodile joint is done by the brachialis, biceps brachii, and brachioradialis. Pronation of forearm is done by the pronator teres and pronator quadratus.

Table 11. Muscles performing flexion of the elcrocodile joint.

Muscle	Position	Nerve supply
Brachialis	Anterior compartment of arm	Musculocutaneous nerve(C5-C6)
Biceps brachii	Anterior compartment of arm	Musculocutaneous nerve(C5-C6)
brachioradialis	Posterior compartment of forearm	Radial nerve (C5-C6)

Conclusion

The basic joint positions in *Makarasana* are the spine is extended, ankles are plantarflexed, knees are extended, hips are extended, internal rotated and adducted, shoulder joint is internally rotated, elbow are flexed and forearms are pronated. The most important benefit of practicing this Asana is contraction of the muscles around the sacrum. It supports the spine, stimulate the sacrum and improves

Prana flow through the entire spine and removed all blockage. In Makarasana the entire muscular system of the body is relaxed, it gives a sense of control over the body and mind. with the flow of blood throughout the body with the relaxed muscles, the demand of oxygen is reduced.it helps to relax the circulatory and respiratory system and brings calmness with the slowing of the heart pumping.

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REVIEW OF NEUTRACEUTICAL APPROACH TO FIGHT CANCER CAUSING ELEMENTS: A PERCEPTORY VIEW

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ABSTRACT:
Cancer is the most feared of all disease. Cancer is a proliferation of cells in the body which undergo unregulated growth. These cells often spread by seeding themselves though out the body. Typically growing in the form of tumors, new tumors emerge as cells take root and grow in different parts of the body.

Classical Ayurvedic texts have several references to cancer. It has an integrated approach to the prevention and treatment of illness and tries to maintain or re-establish the harmony between the mind, body, and forces of nature. It combines a number of approaches, such as changes in lifestyle, herbal remedies, exercise, and meditation to strengthen and purify the body and mind and increase spiritual awareness.

Ayurvedic knowledge about diet is quite extensive and patients should follow a diet appropriate to their prakruti and vikruti. Herbs offer great potential to stimulate the healing process and can even destroy cancer cells. This property of an herb (or drug) is called the cytotoxic effect. Dietary patterns, foods, nutrients, and other dietary constituents are closely associated with the risk for several types of cancer,35 percent of cancer deaths may be related to dietary factors. Evidence suggests that diets high in fiber- containing foods are associated with a reduced risk for cancer,of the breast, colon. Studies have also shown a reduced risk of cancer with diets rich in fruits, vegetables and grain products, carotenoids, vitamin-C. A leaner diet is believed to lower cancer risk.
Tomatoes, calcium, other minerals, saponins, are believed to prevent or suppress different kinds of cancer.

INTRODUCTION:

Cancer is derived from the Greek word Karkinos, which means "Crab". Cancer may arise in any tissue of the body that is composed of potentially dividing cells1. The cells in which cancer occurs show two characteristics.

- Grow uncontrollably (continue to grow and divide)
- They no longer carry out the specific body task for which cells normally exist but intend simply function as cancer cells.

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Dividing and multiplying, the cancer cells transmit these characteristics to their cellular offspring. As the Cancer grows the host suffers adverse effects caused by invasive growth in the original tumor site or by metastatic spread to other site in the body2.

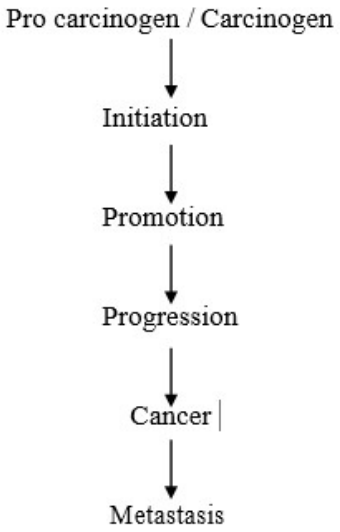
There are about more than 1 Cr. cancer patients in India. Nearly 10 lakh cancer cases are diagnosed every year in India, and about 4 lakh die.

WHAT CAUSES CANCER:

- Chemical carcinogens,
- Tobacco smoking & chewing,
- Anti oxidant metabolism,
- Free radical attack on the cells of body,
- Excessive unprotected exposure to sunlight,
- Exposure to poisonous chemicals in our food and environment,
- Alcohol uses,
- Even many forms of infection and inflammation that promote cancer,
- High fat diet – higher incidence and mortality rate for breast, colon, and Prostate cancers3,
- Food lacking adequate proteins – Oesophageal and gastric cancers,
- Dietary deficiency of various vitamins and minerals promotes cancers in various part/organs all over the body.

THE CANCER PROCESS:

Cancer cells develop because of damage to DNA. This substance is in every cell and directs all its activities. Most of the time when DNA becomes damaged the body is able to repair it. In cancer cells, the damaged DNA is not repaired, which accounts for inherited cancers. Cancer cells often travel to other parts of the body where they begin to grow and replace normal tissue. This process, called metastasis, occurs as the cancer cells get into the bloodstream or lymph vessels of our body4.



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BLOCKING AND SUPPRESSING CANCER CELLS:

Most carcinogens are actually pro-carcinogens and require metabolic activation of some kind if they are to progress towards cancer. Blocking agents in our food can prevent them from becoming active in a cancerous way.

Several kinds of vegetables are particularly rich in these blocking agents.

- Cruciferous vegetables – cabbage, broccoli, Brussels sprouts, turnips and mustard greens5.
- Garlic is rich in sulphur containing blocking agents, as are onions, leeks and shallots.
- Citrus fruit oil contains another variety of blocking agent, D-limoline, D- carvone has been found effective.

All these agents increase the activity of detoxifying enzymes that are employed by the body to break down active carcinogens before they can damage the DNA of cells.

The phytonutrient protection brigade contains suppressing agents that stop the development of already damaged cells and suppress the growth of; cancerous tissue/what would have turned out to be cancerous tissue. Some of them are found in-

- Cruciferous vegetables,
- High consumption of green yellow vegetables and fruits,
- Extracts of wheat, barley and alfalfa are rich in flavonoid compounds have a wide beneficial effects,
- Consumption of soy, Green tea,
- Heavy intake of cold water fish, see weed. PHYTOCHEMICAL AND ANTIOXIDENT NUTRIENTS: VITAMINS:

It is generally accepted that diets rich in fruits and vegetables reduce cancer risk.

- Vit. A – Stimulate the immune system, fights infections, and maintains the structural integrity of cells by allowing their genetic materials to split properly.
- Higher dietary intake of beta carotene is associated with a diminished likelihood of several cancers, particularly lung, stomachs and breast cancer.
- Vit. C protects against radiation – induced chromosomal damage in mice.
- A combination of vitamins E, C and A reduced the toxic effects of radio- immunotherapy in mice.
- Vit. E & C supplements for up to one year and improvements were reported in side effects, such as bleeding and diarrhea.

FIBER'S:

The fibres found our plant food are cellulose, hemicellulose, lignin, pectins, gums and mucilage. These varying ingredients are obtained from whole grains, fruits and vegetable. Some of these fibres are water – soluble and others are insoluble in water. Foods high in soluble fibre include barley, flax meal, oats, oat bran, citrus fruits, apples, carrots and beans. Insoluble fibre is high in wheat bran, corn bran, celery and the skins of fruits and root vegetables. Some scientists now believe that most of the

protective benefits that fibre has against colon cancer come from the consumption of water – soluble fruits and vegetables rather than from cereal foods.

1. A high – fibre diet usually has a lower content of fat and a higher content of antioxidant vitamins; which may protect against breast cancer.
2. Many plants and vegetables contain isoflavones and lignans, which are capable of being converted into weak estrogens in the bowels. These then compete with oestrogen for binding sites in the breasts and other areas of the body and generally reduce the risk of oestrogen-sensitive cancers6.

CAROTENODIS:

Beta carotene is particular has been so strongly associated with reduced cancer risk. It is the carotenoid that is most widely distributed in fruits and vegetables, and this means that blood levels of it are perhaps the best available biomarker of the consumption of such foods. Thus, beta carotene levels become a rough indicator for the entire carotenoid family, which may include just the cancer
– preventive substances.

Carotenoids help to maintain cell differentiation. Healthy cells in the body become differentiated to perform particular tasks. They may be muscle cells or digestive tract cells or skin cells. It is a characteristic of cancer that the cells that make it up lose differentiation and become useless for any purpose except the deadly one they have evolved to perform.

Another theory is that carotenoids help promote the activities if detoxification enzymes. Whatever the reason, carotenoids are cancer fighters extraordinaire.

LYCOPENE:

Lycopene is the red pigment found in tomatoes, carrots, apricots, paprika, pink grape fruit and watermelon. Lycopene seems to be one of the most powerful antioxidants in the human diet and a vigilant cancer fighter. Researchers have demonstrated that overall, it exhibits the highest rate of all carotenoids for quenching singlet oxygen, a particularly virulent form of free radical. Few people are aware that lycopene's anti-free radical activity is roughly double that of beta carotene. This almost certainly has some role in its well-attested capacity to lower levels of breast, lung, endometrial, cervical, and prostate cancers and cancers of the digestive tract from mouth to anus.

Nutritionists usually advice to eat fresh fruits and vegetables and eat them raw when possible. The digestive system can extract only a limited amount of lycopene from fresh tomatoes because the pigmented carotenoid is locked in a matrix of proteins and fibre. Cooking breaks down the cell walls and frees the carotenoids. Lycopene inhibited the growth of those cells, basically by slowing the rate of their division.

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ALAGE:

Spirulina is an algae that lives in bodies of warm, fresh water. Spirulina is 60 per cent protein by weight, supplying all eight of the human body's essential amino acids. It is one of the few dietary sources of the essential fatty acid gamma – linolenic acid and has a rich supply of chlorophyll and vitamins B12 and B6. It also has a phenomenal supply of carotenoids – the concentrations in spirulina are 10 times higher than in carrots.

Another freshwater green algae, chilorella, may be equally significant.It, too, is rich in chlorophyll, minerals, vitamins and other biologically active ingredients. Incidentally, chlorophyll, the substance that makes plants green, has been shown in many studies to have anti – carcinogenic effect.

GINSENG:

Ginseng, the famous star of Oriental herbalism, has role in cancer prevention. Ginseng showed the most protective effect against cancer of the ovaries, larynx, oesophagus, pancreas and stomach. There seemed to be no significant effect on breast, bladder, thyroid and cervical cancers. Ginseng is a phyto-oestrogen and it may occupy oestrogen receptor sites. In the process, it may cause certain favourable estrogenic changes in the body that have been associated with decreased breast cancer risk. Indeed, along the lines already observed in soy foods, ginseng may prove to be an important antagonist to breast cancer7.

DIETARY RECOMMENDATIONS:

The American Cancer Societyhas recently developed dietary recommendations as follows:

1. Avoid obesity
2. Reduce total fat consumption
3. Eat more high-fibre foods like whole grain cereals, fruits and vegetables
4. Include foods rich in vitamins A and C daily
   a. Vitamin – A
   Dark green, deep yellow vegetables and fruits spinach, carrots, apricots.
   b. Vitamin – C
   Orange, grapefruit, strawberries, green and red bell peppers.
5. Include cruciferous vegetables regularly (Cabbage, Broccoli, Brussels, Sprouts, Cauli-flower Etc..)
6. Minimize consumption of smoked, salt-cured and nitrite-cured foods.
7. Keep alcohol consumption moderate.

AYURVEDIC GUIDELINES FOR CANCER PREVENTION:

Treatments in Ayurveda are prescribed only after a careful diagnosis of the patient's body constitution, family history, sex, age, stage of the disease8 etc. Ayurveda treatments will therefore vary from patient to patient Ayurveda concentrates on the source of the disease using natural treatments to eliminate the root cause and promote the patient's inherent self-healing abilities by improving immunity. The most

extreme example of illness caused by lack of purpose is cancer. Ayurveda considers cancer an emote The combination of diet, lifestyle and medicines play an important role in the prevention and treatment of the cancer. Ayurveda takes a different approach to achieve good health. It looks at the whole person to eliminate the cause of disease through natural therapies. It can improve health and help prevent serious illness through simple dietary changes, lifestyle changes, and purification techniques that restore balance to your body9.

* Consume plenty of foods full of prana (life-force) whole, fresh, sun-ripened, enzyme-rich, alkalizing, organic and mostly plant based.

* Avoid processed foods, refined flour products, hydrogenated fats, fast food, excessive low-quality meat and dairy, micro-waved food and leftovers.
* Eat low glycemic foods that have a low sugar content.

* Eat dark green leafy vegetables, especially those that are in the cabbage family such as kale and collards.
* Discover your unique body-mind constitution and use herbs, spices and foods according to your unique individual needs.

* Do the Abhyanga (Ayurvedic self-massage) every morning, which will stimulate the lymphatic system to eliminate toxins.

SPICES FOR CANCER PREVENTION:

Spices not only lend irresistible aromas and flavors to dishes, but have potent cancer-fighting properties10.

Here is a recipe for a delicious tri-doshic (does not aggravate Vata, Pitta or Kapha) spice-mix that has potent cancer-fighting components:

A few Examples of Powerful Cancer-fighting Spices:

Turmeric

Curcumin, inhibit tumor-promoting enzymes and interfere with the growth of cancerous tumors. As a powerful antioxidant, curcumin neutralizes free radicals that increase the risk of cancer or heart disease.

Rosemary

Rosemary has potent cancer-fighting properties by blocking carcinogen-binding to DNA, and modifying metabolic enzymes to decrease the toxicity of a carcinogen.

Ginger

Ginger not only kills cancer cells, it also prevents them from building up resistance to cancer treatment.

Coriander

Coriander seeds significantly improve digestion and are a good choice for people high in Pitta. Coriander, rich in coriandrol, helps combat breast and liver cancers. Fresh coriander is known as cilantro, and is particularly powerful in detoxifying the body of heavy metals, such as lead or mercury.

Fenugreek

In recent research, fenugreek seeds were experimentally shown to protect against cancers of the breast and prostrate cancer, bone cancer. Both the seeds and the fresh leaves are good for blood sugar and fat metabolism, prevent hair loss and are beneficial for the bones.

AYURVEDIC HERBS FOR CANCER PREVENTION:

There are many Ayurvedic herbs that have anti-carinogenic properties, such as amla, ashwaganda, triphala, guduchi, holy basil, neem, shatavari, gotu kola and brahmi11.

CONCLUSION

Cancer is a sign that our internal environment is out of balance. Prevention is the key. The time has come to give more energy to preventative measures and educating people on ways to live healthier lives. The ancient wisdom of Ayurveda that can easily be applied by everyone, enhances the health and immunity in such a way that cancer does not even have a chance!

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AN AYURVEDIC PEDIATRIC CLINICAL EXAMINATION :- VEDANADHYAYA

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The field of Ayurveda is Broadly divided into eight elements. Kaumarbhritya refers to the science of diseases and care of children, right from conception till adolescence. Kashyap Vedic literature is doubtless the pioneer text throughout this branch of Ayurveda. The text is split in varied sections (Sthanas) of that Vedanadhyaya is twenty fifth chapter in Sanskrit literature sthana. It problems the symptomalogy of various diseases in children and is a superb steering for pediatric examination and identification as children area unit unable to narrate their symptoms themselves. the present article reviews the primary text of the chapter and critically analyses it in light-weight of up so far bioscience. it's noticeable that Acharya Kashyap has fenced in an outsized vary of diseases pertaining to varied systems like skin, ENT, gastro-biliary, medical science and genitourinary apparatus and has together fenced in the Bal grahas. The symptoms drawn ar correct and low-cost in up so far scientific era together. Thus, Associate in Nursing intensive study of Vedanadhyaya is crucial for proper understanding of Ayurvedic perspective of pediatric illness and their common demarcating symptoms. It reinforces the browse that youngsters do not appear to be miniature adults and diseases in pediatric population have distinct choices and wish to be understood on a personal basis.
Keyword:- Kashyapa Samhita, Pediatric Clinical Examination, Vedanadhyaya.

INTRODUCTION

Kashyap Vedic literature, the foremost revered book of facts out there on Kaumarbhritya, is conferred at intervals the sort of compilations of the preachings of Acharya Kashyap by his follower Vridhha Jivaka. With the lapse of some time, the book was lost in oblivion thus resurrected by Vatsya, UN agency procured it from Associate in Nursing Yaksha named Anayasa.[1] The Kashyap Vedic literature out there of late is actually one fourth or even however what it'd area unit in its original kind. fortunately we have got Vedanadhyaya intact that describes the clinical manifestations of various diseases of children. throughout this chapter Vridhha Jivak has asked his Guru Kashyap concerning the ways that of identification of unwell children, as most of them ar unable to clarify their complaints adequately. Kashyap has explained the answer very comprehensively.

Content of Vedanadhyaya and its relevancy

The various diseases delineated and their interpretation in context of contemporary science is as follows:

a). Shirah Shool (headache): within the event of headache, the kid rolls the top an excessive amount of, closes the eyes, moans, becomes uninteresting and insomniac.[2]

Relevance: Headache may be a common downside in pediatric medicine. The result of headaches on a child`s educational performance, memory, temperament yet as college group action depends on their

etiology, frequency and intensity. A headache might sometimes indicate a severe underlying disorder (e.g., a brain tumour), and therefore careful examination of kids with repeated, severe or unconventional headache is obligatory. fashionable science holds that infants and kids answer a headache in haphazard fashion. Most toddlers cannot communicate the characteristics of a headache; rather they will become irritable and cranky, vomit, like a darkened area because of photophobia, or repeatedly rub their eyes and head. the foremost vital causes of headache in youngsters embrace sick headache, enlarged intracranial pressure and mental factors or stress. different factors embrace refractive errors, strabismus, rubor and disorder of teeth.[3] Acharya Kashyap has conjointly delineated similar options whereby `bhrisham shirah spandayati` refers to excessive rolling or movement of head because of irritability. Closing of eyes is because of photophobia related to headache. groaning and sleep disorder signify headache of severe ntenisity.

b). Trishna (Thirst): the kid full of thirst, doesn't get happy inspite of taking an excessive amount of breast- milk, cries, has dry lips and surface, depressed talu (fontanelle) is greedy of water and is weak.[4]

Relevance: Water intake or thirst is regulated by neural structure osmoreceptors. These osmoreceptors by linking to the neural structure, stimulate thirst once the body fluid osmolality will increase. Thus, thirst happens with atiny low increase in body fluid osmolality. it's conjointly excited by moderate intravascular volume depletion, the mechanism being mediate by angiotensin II and baroreceptors.[5] this can be sometimes encountered in symptom, that is that the leading explanation for beneath 5 mortality in Republic of India. The Trishna or thirst delineated by Kashyap correlates to moderate degree of dehydration, within which the kid is thirsty and drinks thirstily, restless, irritable, dry tongue and depressed orifice.[6]

c). Karna Vedana (Pain in ears): kid touches ears with hands, rolls head an excessive amount of, has dullness, eating disorder and sleep disorder.[7]

Relevance: Pain in ear or aching may be a common feature or ear infections like otitis and otitis. otitis is one amongst the foremost common infections of time of life. Anatomic options that build this cohort significantly vulnerable to ear infections embrace shorter, a lot of horizontally placed and compliant Eustachian tubes, which allow reflux of cavum secretions into the center ear.[8] Clinical options given in Vedanadhyaya correspond thereto of otitis wherever there's ear pain, ear tugging or rubbing, poor craving, excessive crying. the kid has Arati or dullness because of general options like fever and Aswapna or is unable to sleep because of constant pain.

d). Chakshu Rog (Eye Diseases): within the diseases of eyes (the options are) problem in wanting, prick pain, inflammation, pain, excessive activity, redness and also the eyes get unclean throughout sleep.[9

Relevance: The symptoms delineate concerning eye diseases is nearer thereto of redness, inflammation, stye internum, ophthalmitis and alternative infective conditions of eyes. These ar characterised by pain, inflammation, gluing of eyelids, exaggerated activity, thick discharges and redness.

e). Mukha Roga (diseases of oral cavity): Excessive secretion, aversion to breast, dullness and pain, ejects the eaten milk and has nasal respiratory.[10]

Relevance: The clinical options delineate here represent a variety of diseases related to rima oris like periodontal disease, decay, aphthous ulcers, gingivostomatitis, rubor and redness. Swelling of gums causes excessive secretion whereas oral ulcers and tonsillar inflammation causes issue in feeding and painful drink. therefore the baby is reluctant to feed and expels the eaten milk.

f). Kantha Vedana (Pain In Throat): Ejects the eaten milk, suffers from constipation on taking substances having predominance of Sleshma, mild fever, eating disorder and lethargy.[11]

Relevance: Kantha Vedana here refers to any sickness within which pain in throat may be a outstanding feature like contagious disease, sore throat or rubor. contagious disease infection is characterised by native inflammation of the animal tissue surface, formation of membrane and toxemia. [12] the kid has fever and discomfort as delineate by Jwara, Aruchi and Glani. upset may be a usual symptom in contagious disease and rubor that results in ejection of eaten milk as delineate in Vedanadhyaya. Tender cervical lymphade-

nopathy is additionally found in microorganism sore throat which might be denoted as Kantha vedana.

g). Adhijihvika Roga (Diseases of epiglottis): Excessive secretion, aversion from food and nausea, inflammation and pain on cheeks and kid typically keeps his mouth open. [13]

Relevance: Adhijivika roga corealtes to acute rubor on basis of symptoms. rubor exhibits marked upset and high fever. this can be delineate in classics as aversion from food and nausea. kid typically sits up leaning forwards in rack position together with his neck extended and spit actuation from his chin, as conjointly enumerated within the text. Cough is often absent. [14] gap of mouth suggests countervailing mechanism to keep up airway.

h). Kanthashotha (Inflammation in throat): itch and inflammation in throat, fever, eating disorder and headache.[15]

Relevance: Kanthashotha is understood as sore throat since each have similar options of itch, pharyngitis and tubular cavity erythroderma. Fever is often associated in sore throat and itch of throat is taken into account a symptom feature of Kasa (cough) that is additionally the same old higher metabolic process grievance in sore throat. The symptom headache could also be because of associated cold, symptom and nasal obstruction.

i). Gala Graha (Diseases of throat): the kid has fever, anorexia, secretion and labored respiratory.[16]

Relevance: Gala graha might embrace the severe sort of varied diseases associated with throat that exhibit dyspnoea as a feature. this might embrace laryngotracheitis, supraglottitis, microorganism inflammation and pharyngo- rubor.

(j). Pandu (Anemia): In anemia there's swelling around omphalos, white of eyes, deformity of nails, loss of appetence and swelling in each eye-pits.[17]

Relevance: The clinical options delineate here jibe that of severe anemia that manifests as severe wanness of skin and nails. Periorbital swelling is additionally a feature of severe anemia whereas distension of abdomen could also be because of hepatospleenomegaly of haemolytic anaemia. Koilonychia is particular to iron deficiency anemia. attenuate appetence and fatigue also are general options of anemia.

(k). Jwara (Fever): Before onset of fever, the kid flexes the body elements repeatedly, yawns, coughs ofttimes and suddenly clings to the wet-nurse, doesn't prefer to hold breast, has secretion, heat, discolouration, excessive heat in forehead, eating disorder and coldness of feet.[18]

Relevance: The higher than symptoms signify irritability, physiological state, refusal to feed, discomfort and associated respiratory tract infection.

(l). Kamala (Jaundice): spectral color of eyes, nails, face, body waste and body waste is found among the child tormented by jaundice. In every the conditions (the child) becomes apathetic and looses process capability.[19]
Relevance: on prime of description signifies the acceptable knowledge of Acharya regarding sites for examination of icterus in baby and clinical manifestation of jaundice.
(m). Atisara (Diarrhoea): Discolouration of body, uneasiness in mouth, languor, insomnia, absence of functions of Vayu (flatus) etc. choices develops as manifestation of diarrhea.[20]
Relevance: These clinical manifestations tally signs of dehydration like condition of mouth, irritability and paleness owing to blood disease.
(n). Udara Shula (Pain in abdomen): In Udara shool, the child rejects the breast, cries, sleeps in supine position, has stiffness of abdomen and perspiration of face.[21]
Relevance: These symptoms ar virtually like that of child pain whereby the baby has desolate cry, exhausting abdomen and refusal to feed.
(o). Arsha (Piles): The wasted child, tormented by piles has well designed solid stool or stool with blood, feeling of compression in anal region, cutaneous sensation and prick pain in anal region.[22]
Relevance: on prime of is Associate in Nursing acceptable description of development of pile mass in children owing to chronic constipation. exhausting stool causes downside in emission, erosion of anal animal tissue leading to blood in stool.
(p). Pinasa (Coryza): Baby tormented by Pinasa is mouth-breathing repeatedly throughout uptake of breast, has running-nose, hot forehead, child typically touches nasal orifices, sneezes and coughs.[23]
Relevance: on prime of might be a transparent image of respiratory illness in children with associated secondary organism infection of tract.
The chapter collectively includes apt description of the many totally different diseases like Chardi roga (Vomiting), Mutrakrichha (Dysuria), Ashmari (Vesical Calculus), Jantu dansha (Insect-bite) etc.

CONCLUSION

A study of the chapter Vedanadhyaya clearly reveals the depth and clarity of clinical understanding of Acharya Kashyap. the choices given regarding medical specialty sicknesses closely match that of gift day bioscience. Acharya Kashyap has provided USA a sturdy diagnostic tool that's useful in day to day observe of pediatrics. He probably organized the muse stone of clinical pediatrics.]

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A REVIEW OF *ACORUS CALAMUS* (VACHA) AS PER ANCIENT ASPECT & RECENT ADVANTAGES WITH PHARMACOTHERAPEUTIC PROPERTIES

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ABSTRACT -

Acorus calamus is a useful medicinal plant that has proven to be beneficial in a variety of medical fields. This study examines the various pharmacological activities of plants using various extracts or solvents. In humans, this herb enhances the capacity of intelligence and self-expression. *Acorus calamus* comes in a variety of forms, each of which has anti-inflammatory, anti-spasmodic, anti-protective, and anti-hepatotoxic properties. The article also discusses the numerous Acorus calamus products on the market. The rhizome of the Calamus (*Acorus calamus* Linn., Araceae) plant, also known as sweet flag or Vacha, is an aromatic herb native to Central Asia and Eastern Europe. It has been used by the Ayurvedic practitioners since time immemorial for diseases ranging from weakness of memory to being used as an anthelminthic.

Keywords - *Acorus calamus,* Vacha, Ayurveda, Pharmacotherapeutic Properties.

INTRODUCTION –

Sweet roots are also known as Golomi, Ugragandha, Vekhanda, and Bach. Vacha (Acorus calamus Linn.) rhizomes are also known as sweet flag. Vacha holds a special place in Ayurveda because it is a key Medhya medicine that has the potential to enhance memory and intellect. In today's demanding and competitive environment, poor memory, poor retention, and sluggish recall are all common issues. Age, stress, emotions are conditions that may led to memory loss, amnesia, anxiety, high blood pressure, dementia and to more ominous threat like schizophrenia and Alzheimer's diseases. [1] Calamus root (also known as sweet flag, rat root, sweet sedge, flag root, sweet calomel, sweet myrtle, sweet cane, sweet rush, beewort, muskrat root, and pine root) contains multiple active constituents known as "asarones." 2,4,5-trimethoxy-1-propenylbenzene is the basic structure, and is related to the hallucinogen 3,4-methylenedioxyphenylisopropylamine (MDA). The amount of asarones in calamus

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rhizomes varies greatly depending on the botanical variety. For example, triploid calamus from Eastern Europe has high concentrations, but the diploid North American variety has none.

Classic References -

Acharya Charaka has categorized Vacha in Lekhaniya, Arshoghna, Triptighna, Asthapnopaga, Shirovirechana, Sanjnasthapana, Sitaprashamana Mahakashaya.[2] Charaka enumerated Haimvati (Shweta Vacha) under Mulini Varga.[3]
In Sushruta samhita, Vacha has been found in Pippalyadi, Mustadi and Vachadi gana. [4] Acharya Vagbhatta has included the plant Vacha in Mustadi, Vachadi, Vatsakadi, Haridradi, Chardana and Niruhana varga.

DESCRIPTION

a) Macroscopic [5] **-**

Drug occurs in simple or rarely with thumb-like branches at nodes, sub cylindrical to slightly flattened, somewhat tortuous or rarely straight, cut pieces of 1-5 cm long, and 0.5-1.5 cm thick; upper side marked with alternately arranged, large, broadly, triangular, transverse leaf scars which almost encircle the rhizome; at nodes leaf sheath mostly having an appearence present; lower side shows elevated tubercular spots of root scars; light-brown with reddish-tinge to pinkish externally, buff coloured internally; fracture, short; odour, aromatic; taste, pungent and bitter.

b) Microscopic [5] -

Rhizome - Shows single layered epidermis; cortex composed of spherical to oblong, thin-walled cells of various sizes, cells towards periphery, smaller, somewhat collenchymatous, more or less closely arranged cells towards inner side, rounded and form a network of chains of single row of cells, enclosing large air spaces, fibro-vascular bundles and secretory cells having light yellowish-brown contents, present in this region; endodermis distinct; stele composed of round, parenchymatous cells enclosing large air spaces similar to those of cortex and several concentric vascular bundles arranged in a ring towards endodermis, a few vascular bundles scattered in ground tissues; starch grains simple, spherical, measuring 3-6 μ in dia., present in cortex and ground tissue.

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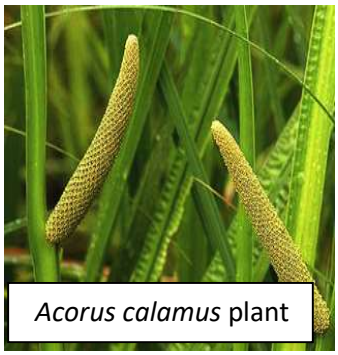

Acorus calamus plant

Root of *Acorus calamus*

CONSTITUENTS [5] **–**

Volatile Oil (principal constituents of the Volatile oil are Asaryl aldehyde, Eugenol and Asarone), contains a bitter principle Acorin (Glucoside), Starch and Tannin.

PROPERTIES AND ACTION [6] **–**

Rasa : Katu, Tikta
Guna : Laghu, Tikshna
Virya : Ushna
Vipaka : Katu
Karma: Deepan, Krimihara, Kanthya, Kaphahara, Medhya, Vatahara, Vamak, Mutravishodhani

IMPORTANT FORMULATIONS –

Vachadi Taila, Vacha lasunadi Taila, Sarasvata churna, Sarasvatarishta, Chandraprabha vati, Khadiradi vati.

THERAPEUTIC USES –

Acorus calamus used in Ayurvedic medicine on a regular basis for the treatment of memory loss (Smriti daurbalya) and other mental disorders. Acorus calamus also used in Shula, Apasmara, Shwasa, Kasa, Vibandha, Unmada, Adhmana.[6]

CONCLUSION –

One of the most popular herbal medicines is vacha. Acorus calamus is a medicinal plant that is used to cure a number of diseases and has the potential to enhance memory and intellect. Vacha is used to

treat vitiated Vata and Kapha disorders, as well as gastrointestinal issues such as dyspepsia, flatulence, stomatopathy, and helminthiasis, as well as amenorrhea, dysmenorrhea, nephropathy, calculi, stragury, and hoarseness of speech. Vacha essential oils have antispasmodic and carminative properties, and are used to treat epilepsy, psychiatric illnesses, chronic diarrhea, dysentery, and tumors. The rhizome of Acorus calamus is used to treat a variety of ailments, including asthma and as a sedative.

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AYURVEDIC MANAGEMENT OF INFERTILITY

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ABSTRACT

Infertility is an unsuccessful condition of pregnancy although having normal intercourse over 12 months. Multi factors are responsible for female infertility as like stress, Hormonal imbalance, *Vata, Visham Agni* etc. *Ayurveda* assures the normal pregnancy through the following proper maintenance of life style and also with the help of *Ayuvedic* medicine and therapies. *Chiruvilwadi Kashayam, Dhanwantharam Gulika, Jeerakarishtam, Kumaryasavam* and *Manasamithravatakam* are such good medicines for Infertility. These *Aushadhas* are beneficial to maintain *Agni,* normalize *Vata* and assure proper health of mind.

These medicines are also work on overall aspect of reproductive organs such as on ovaries, fallopian tubes, Uterus etc. These all are given in starting or first half of cycle for conceives to the patients. During the second half of the cycle *Garbhasthapana* medicines are beneficial to maintain the stability of *Garbh*.

KEY WORDS – *Ayurveda, Vata, Agni* Infertility, health.

INTRODUCTION

In present time infertility is a common problem due to many reasons mainly because of changing Social Trends. Due to changing Social Trends the number of elderly pregnancies has been increasing so that no of infertile females are also increasing cause of stress, obesity, lack of exercise and environmental pollution. Approximately 10 to 20% of normal couples are infertile with various reasons. The causes of female infertility are classified as hormonal factor, ovulation factors, tubal and peritoneal factors, cervical factors, uterine factors, immunological factors, infection factors and unexplained.

Among these, unexplained infertility is estimated to occur in about 15% of patient susrutha had explained the garbh samgrahasamagri (factors responsible for successful pregnancy) in detail. They are ritu, kshethram, ambu and beeja] any abnormality in any of these four canlead to infertility. Ritu stands for fertile time in the cycle. Kshethram represents reproductive organs. Ambu represents proper nutrition after fertilization. It can be correlated with corpus leuteal function upto the establishment of placenta and then onwards placental function. Beeja stands for healthy ovum and sperms. Charaka also given that 'saumanasyam' (Peaceful mind) is best remedy for getting a progeny. Proper functioning of vata must be maintained for pregnancy and throughout the entire pregnancy period. Establishing the proper functioning of all these is the first step

of infertility management in ayurveda .

SPECIFIC PRINCIPLES OF FERTILITY TREATMENT IN AYURVEDA

The disease entity *vandhyatva* is the closest approximation to unexplained infertility in the ayurvedic nosology. Detailed diagnostic and therapeutic strategies are already mentioned in the authoritative ayurvedic text *caraka samhita*[1](chapter *cikitsa-sthana*, *yonivyapat*) that dates to around the beginning of the common era.

In following centuries, specialized texts on gynecology evolved, of which the *kashyapa- samhita* is the most accepted. It offers detailed descriptions of various diseases and dedicates acomplete chapter to female infertility.

Main ayurvedic treatment goals are the purification and the functional optimization of 'reproductive tissues' (*arthava*- and *shukra-dhatu*) of both sexes. According to ayurveda, health of tissue metabolism and tissue nutrition, both being ultimate requirements for conception.

Therefore, general reproductive health is primarily determined by the *pancakarma* purification measures usually initiate the treatment sequence. While purgation is almost always recommended, other cleansing measures are optional and may include medicated enema, emesis, and blood purification.

Based on the assessment of the patient's constitution and individual diagnostic variations the specific therapy may include items from all of the treatment categories outlined in table . Apart from these selected therapies, ayurveda[2] offers additional options for the treatment of infertility.

In fact, therapy dedicated to the improvement of reproductive functions is represented by 1 of 8 main branches of Ayurvedic medicine (*vaji-karana*). Intensive long-term inpatient treatments may also be recommended, consisting of several sequential therapeutic elements which are selected according to the specific case and may also include invasive measures (e.g., intrauterinedouche with medicated oils or decoctions (*uttara-basti*)). A description of the complete range of inpatient treatment options is beyond the scope of this review.

As Ayurveda is a holistic science, it is important to always consider the patient's overall health condition. Analogous, the unique feature of the ayurvedic approach to fertility is that it emphasizes improving the overall health of the prospective parents. Fertility therefore may ensuepartly due to improved overall health. This approach contrasts with the biomedical approach, which does not directly consider overall health.

DISCUSSION:-

Infertility is a relatively common reproductive health concern which strikes deep into the psyche of couples experience it. According to Ayurveda, conception takes place due to healthysperm, healthy ovum, and a healthy uterus. According to charaka, abnormalities of yoni (reproductive organs), psychology, shukra(sperm), arthava(ovum), diet and mode of life, coitus at improper time and loss of strength causes delay in achieving conception in an otherwise fertile woman.

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CONCLUSION:

Infertility is becoming a burning issue since past decade and this is mainly due to the combination of environmental, social, psychological and nutritional factors. In contemporary medicine, treatment focusing on correcting dysfunction diagnosed with the several diagnostic tests. Moreover the complications arising due to the infertility management including hormonal therapy, ovulation induction and invasive diagnostic techniques are huge. In cases of unexplained infertility, life style modificationsand art (artificial reproductive techniques) are only treatment option available. But the success rates are less and highly expensive too. Ayurveda on the other hand, looks deeply in to the individual constitution, and aims to enhance the functioning of body systems that participate in the process of fertilization in totally. From this case study itself it is clear that systematic approach with Ayurvedic principles[3] are effective in Managing infertility as an effective, natural, safe and cost effective method. But further studies with proper research design is necessary forthe scientific validation.

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A CRITICAL ANALYSIS ON NIDANA PANCHAKAS OF KATIGRAHA- A LUMBOSACRAL DISORDER

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ABSTRACT

Health is wealth, this is one among the famous proverbs told by our ancestors long before and health of a human is deeply controlled by the lifestyle and environmental factors. Because of the busy life schedule, lifestyle disorders are more in the present era and so they need more attention. The strain which imparts physically as well as mentally as a result of occupation without any rest are the common reasons for katigraha manifestation. The paraspinal muscle spasm is one of the result of long strain work results in katigraha, which is co-related to lumbar spondylosis. It affects all age groups but the causes may vary among individuals. Improper lifestyle and postures are the two main causes, where katigraha got manifested among the generations. While see in terms with economic terms, katigraha is mostly one among the largest medical problem awaiting for a solution in the most positive way. Katigraha can be positively treated by various treatment procedures mentioned in ayurvedic classics. Vatadosha is the main culprit which is responsible for the pathogenesis of katigraha along with dushya, asthi which is also the asrayasthana for vata dosha. So,this sammoorchana of dosha and dushya makes

the pathogenesis more complex. Ayurvedic treatment line are more effective, but recurrence and treatment duration are the problems that we met with such lifestyle disorders.

KEYWORDS: Katigraha, Vata Dosha, Lumbar Spondylosis

INTRODUCTION

Ayurveda, Life science is the world's oldest health system which is a total approach to healthy living.In this new era, drastic progressive and fastest day today lifestyle has generated many problems among humans and Low back pain is one of the main culprit which blocks the day to day activities of mankind in the most unsuitable way. Studies revealed that 90 percent people around the world will be afflicted with severe Low backache and in some or other way, It has become an endemic disease of the age, due to the strainful life style which encourages stiff joints, flabby muscles, postural strain and obesity. Katigraha is a Vataja nanatmaja vyadhi told by Sharangadhara[1]. Brihatrayees won't consider it as a separate entity, but it is told as a symptom for various disorders like Arshas, Ashmari and Bhagandara etc. In Bhavaprakasha Amavatadhikara[2] and Gadanigraha Vatavyadhi adhikara[3] we can find a brief description on Katigraha as a separate disease along with its nidana, rupa and chikitsa. Here, it is considered as a condition characterized by pain and restricted movements of Kati caused by Shuddha or Sama vayu.

Panchakarma,one among unique branch of Ayurveda which deals with detoxification of the body. It is unique in various ways, as this therapy is based on elimination of doshas causing disease in body, which no other systems in the world has told. Basti karma, which is the fifth karma among panchakarma is the most apt treatment for vata dosha which is the main culprit for manifestation of katigraha. Moreover, the Udbhava stana of Katigraha is Pakvashaya and in general, whenever the Doshas are aggravated in Pakvasaya pradesha, they have to be eliminated through Gudha marga which is possible by Virechana and Basti[4].

NIDANA

The explanation of Nidana for all the disorders is not same in Ayurvedic classics. In certain disorders, we can see explanation of Samanya as well as Vishesha Nidana, but it is restricted to Samanya Nidana with regard to various other disorders.

Though the etiologies of all the Vatavyadhis are similar, the Samprapti & clinical presentation is unique for each Vatavyadhi, distinguishing them from one another.[5]

Charaka[6] & Bhavaprakasha[7] clearly mentions the causative factors of Vatavyadhi; but in Sushruta Samhita, Ashtanga Sangraha & Ashtanga Hrudaya etc. the causes of Vatavyadhi have not been clearly described. However, in these texts the causative factors of provoked Vatadosha are available.[8]

In Gadanigraha of Shodala were mentioned clearly about Katigraha as a disease along with other Vataja disorders.

Even though Katigraha is not mentioned as a separate entity in Brihatrayees, from a reference by Chakrapani while commenting on Charaka Nidana 8/40, it may be diagnosed as a separate disease. He says that '*any symptom can be manifested as a separate entity also.* By analyzing the Adhishtana and lakshana of Katigraha, it is clear that the condition is vitiated by Vatadosha. So the Nidana factors for

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Vatavyaadhi in general can be considered as the Nidana of Katigraha. Moreover, Asthi being the Dhatu involved in the pathogenesis, Nidana for Asthivaha and Purishavaha Srotodushti may act as Nidanas for Katigraha.

In addition to these Charaka and Vagbhata has mentioned Dhatukshaya and Margavarodha to be the root cause of all the Vatavyadhis.[9,10,11]Vata dosha can also be vitiated very badly due to Panchakarma apacharas like Ati-doshasravana, Ati-rakthasravana, Atiyoga of Langhana, Apatarpana etc and Dhatukshayakara bhavas like Rogakarshana, Gadakrita Ati-mamsakshaya. Both Dhatu Kshaya and Stholya are considered as causitative factor for Vatavyadhi. In Sthoulya, the Meda- avarana is the mechanism, which in turn leads to improper nourishment of Dhatus causing Kshaya in Dhatus except Meda.[12]

SAMPRAPTI

The study of Samprapti is the most unavoided factor of understanding a disease. It explains the total disease process which manifests after having Nidana. It includes the details about the vitiation of Doshas and the pathological changes that takes place in a person which leads to the formation of the diseases and also about the mode of manifestation of clinical features[13]. The knowledge of Samprapti is very much essential when see for its Chikitsa as it has told by our Acharyas that- "Samprapti vighatanameva Chikitsa", which means systemic breaking of Samprapti is called Chikitsa hence a proper analysis of Samprapti along with its factors is very much essential.

Gadanigrahakara considered Katigraha to be one among the Vatavyadhis. It clearly defines Vata dosha as the major culprit behind the whole pathogenesis involved in Katigraha. He explains that the vitiated Shudha or Saama vayu takes its Ashraya in the Katipradesha leads to pain and stiffness. In the dominance of Vata dosha, Shula is the main symptom. It is already mentioned that all the Nidanas of Vatavyadhi & Vata prakopa can be considered as Nidana of Katigraha.

Specific Samprapti of Katigraha is not descried in the classics but being a Vata vyadhi its Samprapti vyapara is on the similar lines of Vatavyadhies. The two types of Sampraptis are there ie;Dhatukshaya and Margavarodha.

Dhatukshaya as a reason for Katigraha

Continuous intake of food items which are Rooksha, Sheetha, Laghu and Sushka in nature, Ratri jagarana, Vegadharana, Pramitasana, and all such causes lead to Dhatukshaya[14] and Vataprakopa. And in terms due to predominance of Vata with its Rooksha, Khara, etc. Guna leads to loss of Kapha in quality and quantity. This will lead to Kapha degeneration of body elements takes place by which Dhatus formed will not be of good quality. It occurs specially in Asthi, Majja, Meda and Mamsa Dhatukshaya.

Reduced Kapha in Sandhis makes Sandhi Bandhana Shithilatha. Ashrayashrayi Sambandha also leads Asthidhatu Kshaya. Asthi being the main participant of the joint its Kshaya leads Kha-vaigunya in the joints.

In this condition if Nidana Sevana done further produces Vata Prakopa. If Vata Prakopa is not controlled by appropriate measures and along with if the person indulges in Asthivaha and Majjavaha Sroto Dushtikara Nidana, the Vata which is prakupitha will spreads all over the body through these Srotas. In the meantime, Sthanasamshraya of Prakupita Vata takes place in the Kha-vaigunyayukta

Sandhi in Katipradesha. This localized Vayu due to its Ruksha, Laghu, and Kharadi Guna over power, undo all properties of Sleshaka Kapha producing stiffness and pain in the katipradesha ultimately resulting in the disease Katigraha.

Margavarodha as a reason for Katigraha

The disease Katigraha can be manifested due to Kevala Vata or by Saama Vata. The Saaama Vata indicates the Margavarodhajanya type of Vikruthi. The Nidanas like Adhyaashana, Vishamasana and other Ama Kara Nidanas first vitiates Agni leading to Manda Agni. Derrangement of Jatharagni and Dhatwagni giving rise to Ama of both origins cause Srotaavarodha in the Adhishtana. Due to such Srotavarodha in the Gati of Vata produces Lakshanas like, 'Ruk', Stambha etc.

Most of the times when Kha-vaigunya is present at Kati, Sphik, Sandhi, Snayu, Kandara and Nadi and some kind of trauma, exposure to cold etc. will act as a Vyanjaka hetu. Sometimes without any previous Kha-vaigunya severe trauma or injury to lumbosacral region leads to sudden contraction of Mamsapeshi of Katisandhi which inturn leads to Sransa or Bhramsa of Kasherukasthi of Katisandhi (Prolapse intervertebraldisc) and Vataprakopa. This can be said as Agantuja Nidanajanya Katigraha.

POORVAROOPA

These Poorvaroopa usually are exhibited during the stage of 'Sthana Samshraya' of the 'Shadkriyakala'[15]. At that time when Dosha-Dushya-Sammurcchana takes place, some specific signs and symptoms are observed in particular disease which may be clear or not, they are termed as Poorvaroopa. It is important to diagnose and treat the disease at this stage so that patient may be saved from the functional or organic damage as well as degree of morbidity. This may be created during complete manifestation of the disease.

In Ayurveda classics, the description of the Poorvaroopa of Katigraha is not available. Even then, few of the general citations in the classics pertaining to the occurrence of the Poorvaroopa in Vatavyadhi are worth mentioning.

Charaka has mentioned that Avyakta Lakshana is the Poorvaroopa of the Vatavyadhi. Chakrapanidatta commenting on the word Avyakta mentions that few mild symptoms are to be taken as the Poorvaroopa[16]. But Vijayarakshita, the commentator of Madhava Nidana has given the clear meaning of the term Avyakta, according to which symptoms not exhibited clearly are Poorvaroopa and they are due to Weak causative factors,Very less or mild symptoms, Less Avarana of Doshas. It is obvious from the above reference that Avyakta is Alpa Vyakta or less manifested. So, in Katigraha also Poorvaroopa can be taken as minor symptoms produced before the actual manifestation of the disease.Vague pain, mild discomfort in the low back and limitation in the spinal movements in its minimal severity may be considered as Poorvaroopa of Katigraha. The development of these symptoms following excessive exercise straining the back, or else direct trauma to the back are always corroboratory of Katigraha.

Rupa :-

Rupa appears in the Vyaktaavastha i.e., fifth Kriyakala of the disease. Here, in this stage, the Dosha-Dushya Sammoorchana is completed along with the manifestation of all the Vyadhi lakshanas

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including the Pratyatma linga, which are essential for the disease diagnosis. Katigraha is a Vatavyadhi which is characterized by pain and stiffness at the Katipradesha. These symptoms manifest in a clear and distinguishable form from its vague and mild form in Purvaroopavastha. The term Katigraha itself is self-explanatory pointing out the characteristic feature of Graham or stiffness. The condition is such that almost all the movements at the Katipradesha or the lower back region are hampered preventing the person from performing his day-to-day activities.

Acharya Charaka has hinted regarding various Vatavyadhis, which can occur according to the Hetu and Sthana vishesha, other than those he has explained in detail. Based on this excerpt various disorders can be considered due to vitiated Vata taking Ashraya in Katipradesha, including Katigraha. This progression occurs due to various Nidanas mentioned earlier including direct injury to the Katipradesha.

Ruja :

Acharya Shodala while explaining Katigraha has mentioned pain as one of the prime symptom. Ruja is the term used by him to describe the character of pain in this disease.

'Ruja Vedana.'[17]

'Ruk Satatam Shulam.' 'Ruk Shulam.'[18]

In a typical case, pain is confined to the Katipradesha or the Lumbo sacral and sacroiliac region only. Pain can arise due to the vitiated Vyaana Vata, which dries up the Sleshaka Kapha in the joints creating friction. If the vitiation is due to any Abhighata, pain can manifest because of injury to the Sandhi as well as the surrounding structures. Radiation of pain towards the lower limb is not seen in a typical case, but can be found in few low back disorders where there is a defect in the Inter vertebral discs, which is giving tension to a nerve root passing out.

Graham :

The main characteristic feature of Katigraha is stiffness/graha at the Katipradesha. The vitiated Vata when it takes Ashraya in Katipradesha, it leads to the Shoshana of the Sleshaka Kapha present in the Sandhis there. The Shoshana of Sleshaka Kapha leads to the hampered functioning of the joints preventing all the movements at the Katipradesha. Thus, the movements are hampered either completely or partially at the Lumbo-sacral region like flexion, extension, lateral flexion and rotation. The degree of affection varies depending on the presentation of etiological factors, such as the site of the structures injured and the extent of injury and duration.

VYAVACHEDAKA NIDANA OF KATIGRAHA:

Diagnosis is successfully done by thorough observation of the patient by exploring the clinical manifestations and analyzing the symptoms to determine the Doshic vitiation, involvement of Dhatu, affliction of Srotas, as well as other modes of Samprapti. Vyavachedhaka Nidana or comparison of diseases presenting similar clinical features helps us for proper diagnosis.

Acharya charaka has described that one symptom may be common to many diseases, one symptom may be related to only one disease, many symptom may be related to only one disease, and many symptoms may be common to many diseases.

So for better understanding of the disease we have to look it through different angles. Here comes the Chathurvidha pareeksha, ie knowing the disease as a separate disease, as a symptom of other disease, as a Poorvaroopa, and as an Upadrava.

KATIGRAHA AS A SEPARATE DISEASE:-

Gadanigraha and Bhavaprakasha described Katigraha as a separate disease, which is the stratum of the present study.

KATIGRAHA AS ASSOCIATED SYMPTOM:-

Stambha, Ruk & Thoda of Kati is mentioned in Gridhrasi Samanya lakshana.[19]

In Vataja gridhrasi Sphurana and Stabhata of Kati is mentioned.[20]Katigraha is mentioned in Vatajvara.[21] Amavata.[22]Katigraha is mentioned Vankshanotha & Vrikkaja vidradhi.[23]Stambha of Kati is told in Pureeshaja anaha.[24]Katigraha is mentioned in Kshataja kasa.[25]Ruk & Sadana of kati is mentioned in Pandu samanya lakshana.[26]Sangraha Grahani.[27]Katishoola is mentioned in Vataja pakvatisara.[28]Vedana in Kati pradesha is mentioned in Asanjatha jalodara.[29]In Vathodara, Ruja of Kati, Prushta is mentioned.[30]In Vatholbanarshas & Vathanubandha raktharshas, Vedana in Kati pradesha is told.[31]Vedana in Kati pradesha is told as an Upasthitha prasava lakshana and it is seen in gyenic disorders such as Vatika Asrugdara, Upavishtaka Nagodara, and Prakcharana.[32]Svapna of Kati is mentioned in Medakshaya.[33]Kati, Uru Vamkshana bhanjana is mentioned in Bahyayama.[34]Kati bhanga is seen in seventh Vega of Sthavara visha.[35]In Sahajarsha, Thrutheeyaka jvara[36] and Madatyaya[37], Trikagraha is mentioned as a symptom.

Katigraha as a purvarupa:-

Katigraha is seen as a Poorvaroopa for Ksheena roga along with Raktamootratha.[38]Nistoda, Sphurana, Bheda, Supti and Guruta of Kati, Janu, Jangha,Uru, Amsa are mentioned in Vatarakta.[39]

Kati- kapala vedana is told in Bhagandara Poorvaroopa.[40]Basti, Kati, Mushka, Medra Vedana is mentioned as Poorvaroopa for Vrudhi.[41]

Katigraha as upadrava-

Stambha, Arthi and Bhedana of Kati, Guda, Jangha, Uru and Basthi are mentioned in Athidrutha basti datha doshas. [42]In Sneha basti vyapat, Kati shoola is explained.[43]Langhana Atiyoga may lead to Vedana in Kati pradesha.[44]Parshva prushta katigraha may manifest due toAthimatraahara.[45]Overusage of Katurasa may lead to Vyadha of Kati and Prushta region.[46]

Katigraha as a part of samprapti-

In Pakvashaya Vata kopa, Katigraha is mentioned along with Shoola, Anaha, Antrakoojana, etc.[47]Jangha, Ooru, Trika, Prushta rogas may manifest when the Vata prakopa occurs in the Gudapradesha.[48]Trika sandhi pravesha is explained in the disease Amavata.[49]Apart from this the Katigraha disease itself is of two types' Shudha Vataja &Sama/VataKaphaja. So while diagnosing Katigraha, conditions like Dhatukshaya and Avarana should be differentiated apart and this will help in successful treatment.

SADHYATA – ASADHYATA

The Sadhyata-asadhyata or prognosis of a disease depends on many factors such as the Bala of Nidana or Hetu, the strength of Dosha Prakopa, the Sthana of the disease, severity of signs and symptoms, duration of the disease etc. It also depends upon the age, sex, Rogamarga, Dhatudushti etc. These

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common rules are applicable in the case of Katigraha. In addition, Katigraha is a Vatavyadhi and the Svabhava or natural trend of Vayu is also an important factor. Acharya Sushruta has explained Vatavyadhi as Mahavyadhi which is cured with difficulty.According to Acharya Charaka, if Vatavyadhi is connected with Sandhichuti, Kunjanam, Kubjata, Ardita, Pakshaghata, Amsashosha, Panguta and those which are Majja and Asthigata are usually cured with very difficulty or even not curable. Katigraha is a Vatavyadhi if it is associated with Kapha the curing chance are more than in Kevala Vataja variety. Still however if the patient comes earlier for the treatment and if given prompt proper treatment in sufficient dose and duration, then the patient is likely to be cured or less likely to suffer from a subsequent attack of pain. In case the changes in the spinal joints are in advanced nature of the disease then with even the best treatment it is not likely to be cured.

UPASHAYA AND ANUPASHAYA:-

Upashaya are the medicines, diets and regimens, which bring about happiness either by acting directly against the cause of the disease, or it may produce such effect on the disease indirectly.

CHIKITSA

Katigraha one of the Vatavyadhi is produced by the vitiated Vata stemming out from the Pakvashaya, localizing in the Kati pradesha, may afflict the Asthi Dhatu, and vitiates the Snayu and Kandara of the Kati pradesha. The resultant condition is characterized by pain and stiffness of the Kati pradesha. It is difficult to unify an effective treatment for this, as the disease may or may not be associated with Ama. Therefore,the procedures aiming at the rectification of the imbalances in Vata Dosha as well as Kapha Dosha forms the sheet anchor of treatment of Katigraha.

The general principles of treatment of Vata Dosha should be adopted in cases of Katigraha after the assessment of Dushya, Prakruti, Vaya, Linga, Bala, Satva, Satmya. The treatment of Katigraha includes various measures to suit its varied clinical entities, stages and associated complaints. The treatment also constitutes the Aahara, Vihara, Shodhana, Shamana and surgical measures. The specific Nidanas of the diseases must be identified and efforts must be made for its Parivarjana. The etiological factors mentioned previously pertaining to Aahara; Vihara etc are to be avoided with special reference to the identification of the actual cause of the patient's present condition. After reviewing the classics, it is ideal to manage Katigraha with snehana,bahya snehana like parisheka, dhara, abhyanga, avagaaha, katibasti,etc. swedana like avagaha,nadi sweda,patrapinda sweda ,etc,mridu virechana,basti, as it is an ardha chikitsa for vata and shaman chikitsa can also be adopted with this.

DISCUSSION AND CONCLUSION:

Kati is an area where there is a conglomeration of various Sandhis, Snaayu, and Peshis. Sandhi is a place where two or more structure unites and in the context of Asthi Sandhi, a junction between two bones can be considered. Sandhi is not a single structure rather it is considered as an organ. There are different structures, which helps in maintaining the stability of the joint. Snayu or ligament, are those structures which helps in proper binding of the joint. They unite the bones and help to direct the bone movement and prevent the excessive and undesirable motion. Muscle tone helps to maintain the alignment of the joint. Shleshmadharakala situated in the joints supported by Shleshaka Kapha helps in lubrication,

provides nutrients and helps in keeping the joint firmly united. Therefore the vitiation of Vata can cause pathologies of these structures in the Kati pradesha leading to their hampered functioning. Katigraha is characterized by pain and restricted movements of the Kati Pradesha. The pathology of Katigraha can be explained in two ways, Dhatukshaya and Avarana. In Dhatukshya Janya Katigraha due to old age and Vatakara Ahara Vihara there will be qualitative change in the joint material gradually leading to disease manifestation. The other way of Samprapti where in due to continuous pressure due to various factors like accumulated Mala the joint may get affected (due to Avarana) leading to disease manifestation. But here the characteristic symptom of stiffness may or may not be seen but the referred pain can be obtained. This demarcation in Samprapti helps in planning the treatment.

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REVIEW OF *ANNAVAHA SROTAS* WSR *ANNAVAHA SROTAS VIDDH LAKSHANA*

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Abstract
Srotas are purveyors of the body. It transports different substances present in body. There are various *Srotas* for different entities. *Aacharya* described *Mula Sthan* and functions of various *Srotas*. Beside description of *Srotas, Aacharya Sushrut* also mentioned *Srotas Viddh Lakshana*, means symptoms that appear when a *Srotas* is injured. In modern era there is a need to scrutinize Srotas and *Srotas Viddh Lakshana*. Among these *Srotas* one important *Srotas* is *Annavaha Srotas* as it is related with *Anna* (food) that is essential for *Jeevan* so this article is about *Annavaha Srotas* and its *Viddh Lakshan* and their approach with modern science.
Key words: *Srotas, Annavaha Srotas, Mula Sthan, Srotas Viddh Lakshana*

Introduction
Ayurveda is the oldest system among all life sciences which have been invented in India thousands years back and strongly rooted as traditional healthcare practice. Ayurveda is not merely based upon philosophical concepts but undoubtedly these are having enormous scientific importance too. One among them is the concept of Srotas which is having a pivotal role in understanding of physiology of body. In Ayurvedic classics *Srotas* means structural and functional passage or channel carry such of tissue elements as are undergoing transformation from their previous states or flow of transforming *dhatus*[1]. According to *Aacharya Sushrut Srotas* originates from hollow spaces, spread throughout the body and purveys materials. *Srotas* are entirely different from *Sira* and *Dhamnaya*[2]. These are the purveyors of *Prana, Anna, Udaka, Rasa, Rakt, Mamsa, Meda, Shukra, Mutra, Purish* and *Aartava*. As *Sharir* depends on food (*Anna*) for vitality, brawn, restoration of damaged cells and tissues so *Annavaha Srotas* has a great significance in *Sharir*.

Aim and objectives
1) A brief study about *Srotas*.
2) Description of *Annavaha Srotas* and its *Viddh Lakshana.*
3) A small effort will be done to analyze *Annavaha Srotas* and its *Viddh Lakshan* by modern science.
4) Discussion and conclusion will be drawn on the base of study.

Material and methods
- Ayurvedic texts
- Modern texts or contemporary texts
- websites

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This study relies on completely different Ayurvedic and Contemporary texts. Study material associated with *Srotas* and *Annavaha Srotas* are going to be collected by leading Ayurvedic texts. Contemporary texts are going to be remarked study relevant system and its disorders. Websites are going to be thought of for current scientific informations.

Srotas

Number of Srotas –

Aacharya Charak outlined *Srotas* as "*Sravanat Srotamsi"*[3] means the structure through that *Sravana* (secretion) takes place. Normally *Srotas* are unit channels that will be *Sthula* or *Sukshma*, massive or little and perceptible or imperceptible. *Srotas* are unit of 2 varieties, ie. *Aabhyantara Srotas* and *Baahya Srotas*. *Aabhyantara Srotas* have their vent within the body and *Baahya Srotas* are external orifices.

Number of *Srotas* –

Aacharya Charak mentioned multitudinous *Srotas*[4]. He conjointly aforesaid that there are thirteen *Sthoola Srotas*[5] (table 1) and nine *Chidra*[6] (table 3).

Aacharya Sushrut mentioned 22 (11 pairs) *Yogavahi Srotas*[7] *(Aabhyantara Srotas)* (table 2) and 9 external orifices[8] (table 3) however he conjointly mentioned 3 further external orifices[9] in females (table 3).

Table 1

No.	***Sthoola Srotas***	***Mula Sthana***
1	*Panavaha*	*Hridya, MahaSrotas*
2	*Udakavaha*	*Taalu, Kloma*
3	*Annavaha*	*Aamashaya, Vama Paarshava*
4	*Rasavaha*	*Hridya, Rasavahi Dhamnya*
5	*Raktvaha*	*Yakrit, Pleeha*
6	*Mamsavaha*	*Snaayu, Twacha*
7	*Medavaha*	*Vrikka, Vapaavahan*
8	*Asthivaha*	*Meda, Jaghan*
9	*Majjavaha*	*Asthi, Sandhi*
10	*Shukravaha*	*Vrishan, Shef*
11	*Mutravaha*	*Basti, Vankshan*
12	*Purishvaha*	*Pakvaashya, Guda*
13	*Swedavaha*	*Meda, Roomkupa*

Table 2

No.	***Yogavahi Srotas***	***Mula Sthana***
1	*Panavaha*	*Hridya, Rasavahi Dhamnya*
2	*Udakavaha*	*Taalu, Kloma*
3	*Annavaha*	*Aamashaya, Annavahi Dhamnya*

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4	*Rasavaha*	*Hridya, Rasavahi Dhamnya*
5	*Raktvaha*	*Yakrit, Pleeha, Raktvahi Dhamnya*
6	*Mamsavaha*	*Snaayu, Twacha*
7	*Medavaha*	*Kati, Vrikka*
8	*Shukravaha*	*Stana, Vrishan*
9	*Mutravaha*	*Basti, Medhra*
10	*Purishvaha*	*Pakvaashya, Guda*
11	*Aartavavaha*	*Garbhashaya,Aartavavaha Dhamnya*

Table 3

No.	***Chidra* (external orifices)**	**Numbers**	
		In males	**In females**
1	*Netra*	2	2
2	*Naasa*	2	2
3	*Karna*	2	2
4	*Mukha*	1	1
5	*Medhra*	1	1
6	*Guda*	1	1
7	*Stana*	-	2
8	*Yoni*	-	1

Annavaha Srotas

Among these *Srotas* there is a significant *Srotas, Annavaha Srotas* that acts for digestion & absorption of food and separation of *Sara* and *Kitta*. *Mula Sthana* of *Annavah Srotas* is *Aamashaya, Vaam Paarshava*[10] and *Annavahi Dhamnya*[11].

Aamashaya – Aachaya Charak and Aacharya Sushrut has told that *Aamashaya* is the *Mula Sthana* of *Annavaha Srotas*. *Aamashaya* is settled between *Nabhi* and *Stana*. Anatomically *Aamashaya* is stomach. Here the digestion of food takes place.

Vaam Paarshava – Anatomically *Vaam Paarshava* is left hypochondriac region. Structures placed in this region are stomach, spleen and descending large intestine. However spleen is said to blood & its mechanism and descending large intestine is said to *Purishvaha Srotas*. Each of those structures doesn't seem to be connected with *Annavaha Srotas*. Therefore *Vaam Paarshava* is left lateral part of stomach that becomes additional distended on left side once it's full of food.

Annavahi Dhamnya – Dhamni is one that shows *Spandan* and carries *Rasa Raktadi Drava Dhatu*. *Annavahi Dhamni* are unit 2 in variety, situated in small intestine[12] and play specific role in digestion, absorption and separation of *Aahar Rasa and Mala*.

Dalhan says that these area unit helpful in separation of *Rasa, Mutra, Sweda* and *Purish* when the absorption of *Annarasa*. *Ghranekar* correlate the superior mesenteric and celiac arteries to *Annavaha Dhamnya* which give the nutrition to lining of stomach and small intestine for its correct operate.

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Anatomically *Annavaha Srotas* is said with esophagus, stomach and small intestine. The digestion and absorption takes place until the last part of small intestine.

Aacharya Charak and *Aacharya Sushrut* each mentioned *Annavaha Srotas* and their *Mula Sthana*. Beside this *Aacharya Charak* conjointly mention reason[13] and symptoms of override of *Srotas (Srotas dushti*) [14]. As a *Shalya chikitsak Aacharya Sushrut* otherwise cited *Srotas Viddh Lakshan*[15] (symptoms develop once a *Srotas* is injured).

Reasons for override of *Annavaha Srotas* –

1) Excess quantity of meal
2) Meal at inappropriate time
3) Harmful food
4) Due to override of *Jatharagni*

Symptoms of override of *Annavaha Srotas* –

1) *Annabhilashanam* (no want to intake meal)
2) *Aruchi*
3) *Avipaka* (indigestion)
4) *Chhardi* (vomiting)

Annavaha Srotas Viddh Lakshan – Any injury in *Annavaha Srotas* manufacture symptoms like:

1) *Aadhyman* (flatulence)
2) *Shula* (pain in abdomen)
3) *Annadwesh* (anorexia)
4) *Chhardi* (vomiting)
5) *Pipaasa* (thirst)
6) *Aandhy* (vision loss)
7) *Maran* (death)

Modern facet

Annavaha Srotas is said with digestion and absorption of food. Chief components of *Annavaha Srotas* are stomach and small intestine.

Any injury in stomach or small intestine causes inflammation of their secretion membrane (gastritis/enteritis). Inflammation of secretion membrane of stomach induces pain felt as a diffused burning sensation. It is often referred to epigasrtic pain. Acute gastritis is characterized by inflammation of superficial layers of mucus membranes. Chronic gastritis involves inflammation of even the deeper layers. It results in the atrophy of gastric mucosa, with loss of chief cells and parietal cells of glands. Therefore the secretion of gastric juice decreases.[16] Loss of stomach secretion leads to achlorhydria (no HCl secretion) or hypochlorhydria (less HCl secretion). When HCl is not secreted or secreted in fewer amounts, pepsin remains inactive as it needs HCl for activation.[17] Inactivity of enzyme results in indigestion, anorexia (*Annadwesh*) and flatulence (*Aadhyman*). Inflammation of secretion membrane induces vomiting (*Chhardi*) that may be a neurogenic response triggered by reflex through irritation of abdomen.

Normal stomachal secretion contains a conjugated protein referred to intrinsic factor, secreted by the parietal cells. It's necessary for adequate absorption of vitamin B 12 from the small intestine. Factor combines with vitamin B complex twelve in abdomen and protects it from being digestible & destroyed because it passes into the small bowel. Then, once the intrinsic factor – vitamin B 12 reaches the terminal small intestine, the factor binds with receptor on the ileum epithelial surface. This successively makes potential absorption of vitamin B complex 12.[18] Loss of parietal cells leads to absence of factor in stomachal secretion. In absence of intrinsic factor adequate quantity of B-complex 12 vitamin is inaccessible for the food. It results in anemia as vitamin B complex twelve is critical for maturation of red blood cells. Typically anemia is related to neuropathies as a result of vitamin B complex twelve is additionally necessary for myeline synthesis in nerves therefore deficiency of vitamin B complex twelve results in neuropathies or medical specialty disorders. Often vitamin B complex twelve deficiencies results in nutritionary optic pathology (damage to optic nerve) that is related to drop in vision (Aandhy).[19]

Enteritis is characterized by inflammation of secretion membrane of small intestine. It causes malabsorption and diarrhea.[20] Malabsorption of vitamins and minerals results in deficiency of vitamins and minerals. Deficiency of vitamin A leads to night blindness. Vitamin A deficiency causes defective rodes and cones operate. Prolonged deficiency results in anatomical changes in rodes & cones and at last the degeneration of different retinal layers occur[21]. These conditions impede correct vision (*Aandhy*).

Malabsorption of calcium results in hypocalcemia. Hypocalcemia causes neuromuscular hyperexcitability, resulting in hypocalcemic tetany. When the calcium level falls below 4mg/dl, it becomes deadly. Throughout such severe hypocalcemic conditions, tetany happens therefore quickly that an individual develops spasm of various teams of muscles within the body. Pathetic indications area unit within the laryngeal and bronchial muscles that evolve respiratory arrest, leading to death (*Maran*).[22]

Poor absorption of water results in dehydration and induces thirst (*Pipaasa*). Inflammation of intestine may be a ground behind diarrhea. Diarrhea leads to loss of water and electrolytes. This results in dehydration and electrolyte imbalance. Dehydration additionally induces thirst. Chronic diarrhea leads to hypokalemia and metabolic acidosis[23] which can be deadly (*Maran*) in severe conditions.

Discussion

Srotas area unit undoubtedly distinct structures that secrete, flow into or transport completely different substances in our body. Among these *Srotas, Annavaha Srotas* has its characteristic functions because it conveys, assimilates and absorbs the food. Once observant its functions we are able to correlate *Annavaha Srotas* with a vicinity of gastrointestinal tract (stomach and small intestine). *Aacharya Sushrut* cited *Annavaha Srotas Viddh Lakshana* such as *Aadhyman, Shula, Chhardi* etc. means any injury in *Annavaha Srotas* manifests these symptoms. As gastrointestinal tract has broad area, both anatomically and physiologically so particular part of gastrointestinal tract is selected for study. According to contemporary science any injury in gastrointestinal tract evolves many symptoms or diseases in them one is inflammation of secretion membrane of stomach (gastritis) and small intestine

(enteritis). Gastritis leads to loss of gastric juice secretion which ends in indigestion, anorexia and flatulence. Deficiency of intrinsic factor leads to vitamin B12 deficiency which causes optic neuropathy and results in vision loss. Enteritis leads to malabsorption of mineral, vitamins and other nutrients. Malabsorption of vitamin A leads to drop in vision. Malabsorption of calcium leads to hypocalcaemia tetany that may be lethal in severe conditions. Poor water absorption induces thirst. Diarrhea also induces thirst as it creates dehydration. Electrolyte imbalance due to diarrhea leads to hypokalemia and metabolic acidosis that can be deadly.

Conclusion

Here we are able to conclude that *Annavaha Srotas Viddh Lakshan* cited by *Aacharya Sushrut*, ie: *Aadhyman, Shula, Annadwesh, Chhardi, Pipaasa, Aandhy* and *Maran* are pertinent with trendy science. As *Annavaha Srotas* is an expanded area therefore just some disorders associated with gastritis and enteritis are studied here to outline *Annavaha Srotas Viddh Lakshan*. It desires more studies to explore it a lot of.

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A CONCEPTUAL STUDY ON OJAS AND IT'S CLINICAL SIGNIFICANCE : A REVIEW

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ABSTRACT
Ayurveda is a great tradition with sound philosophical, experiential and experimental basis. Increased side effects, lack of curative treatment for several chronic diseases, high cost of new drugs, microbial resistance and emerging diseases are some reasons for renewed public interest in alternative medicine. It is a science of health & healthy living. Ayurveda has two main goals i.e. protection and promotion of health and cure from disease.
In Ayurveda, we find all the fundamentals of immunity and their utility to prevent and to cure the disease, respectively. Vyadhikshamatva (immunity) is illustrated as the power of resistance capable enough to check the progress occurrence or recurrence of the disease.
Ojas is considered as responsible for Vyadhikshamatva (immunity). Due to the loss of ojas, persons are susceptible to other intercurrent diseases. Hence, an adequate exposition of the concept of ojas concerning immunity is essential. Ojas It is an essence of seven dhatus and is responsible for the strength of an individual. It is one among the seats of prana. It is itself synonymized as bala. It is an independent principle of Ayurveda, the principle it supports life, which protects life from various diseases.
KEYWORDS- Ayurveda , Vyadhikshamatva, ojas, dhatus, bala.

INTRODUCTION
Many people are prone to disease due to their faulty dietary habits, change in climate, on the other hand, some people remain healthy in spite of breaking dietary rules or changes in climate and they do not get affected by many diseases. Many microorganisms enter the human body through air, water, soil but fail to produce disease due to immune response present in the living body. The most important thing in relation to health and disease is vyadhiksamatva(immunity) of the body.
Ojas is considered as essence of seven Dhatus or equivalent to Bala or Sleshma. Ojas can also be considered as living radiant energy present in human body. In Ayurveda literature the term Oja is not clearly explained by Ayurveda community.
Ojas is final and excellence of the product dhatu and vyadhiksamatva(immunity) depends on it. Innate immunity may be correlated to sahaja bala and kalaja bala may be correlated to acquired immunity. Here is a review of Ayurvedic texts regarding immunity and concept of Vyadhiksamatva which depends on normal dosa, equilibrium state of dhatu, normal agni bala and ojas etc.

Ojas in Ayurveda is considered as quintessence of all the seven Dhatus and represent the Bala or biological strength which include immune strength to.[i] Charka includes Oja in Dash Pranaayatan.[ii] Ojas is considered as resistance to decay and degeneration of body and immunity against the disease. The disease such as AIDS, Diabetes etc., manifest feature of decrease immunity or rather Oja Kshaya. In Ayurveda, Ojas has been considered vital in the defense mechanism of the body. In conditions like diabetes mellitus and malnutrition, where loss of Ojas is a constant feature, people are known to be susceptible to various other interrelated and degenerative diseases or recurrent infections.

In this changing scenario it is high time to study concept of Ojas in its totality for this purpose available Ayurveda literature on concept of Ojas, study of specific diseases involving Ojas in their pathophysiology, study of effect of treatment procedures used in these diseases on Ojas and utility of Ojas augmentation in treatment of these diseases are few aspects which are needed to be studied.

This will not only help to understand concept of Ojas but may also improve chances of better treatment options for managing these diseases. Role of Ojas in maintaining healthy status as well as positive health is also one of the important aspects in prophylaxis of diseases

MATERIAL AND METHODS

Present work has been done based on critical review of classical information, published research works, modern literature and research works conducted at various institutes. The possible correlation has been made between collected information and has been presented in systematic way.

AIMS AND OBJECTIVES

To study a conceptual review of Oja and it's clinical importance through ayurveda.

DISCUSSION

PROPERTIES OF OJAS

COLOUR:

According to Sushruta, it is Sukla Varna (clear white) whereas other Acharyas have mentioned three colours of Ojas i.e., a clear substance with the tinge of red and yellow.

ODOUR:[iii]

Lajagandhi i.e., with the smell of Laja. Taste: According to Charka, its taste is similar to that of honey i.e. Madhurasa (sweet) with slight Kashayatva (astringent).

PLACE OF OJA[iv,v]

The main seat of Ojas is heart from where it circulates in the whole body. There are two places where Ojas prevails.

1. Para Ojas - Hridya Sthan (in the heart)
2. Apara Ojas - Sarva Sharira Vyapi (all over the body) like ghee in milk or honey in flowers.

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FORMATION OF OJA [vi]

The best way to describe formation of Ojas is similar to the process of formation of honey. Bees collect the nectar or essence of thousands of fruits and flowers and store them into their hives for the formation of honey. Similarly, Ojas is also the nectar or essence and is the end product of various physiological process.

CHARACTERISTIC FEATURES OF OJAS[vii]

Somatmaka (cool like moon), Snigdha (unctuous or oily), Shukla (white in color), Sheeta (cool in nature), Sthira (stable or firm), Sara (flowing or moving and liquid in nature), Viviktam (clear or transparent), Mridu (soft in nature), Mritsnam (slimy).

QUALITIES OF OJA[viii]

Acharya Charak has explained ten qualities of Ojas which are similar to milk and ghee while totally opposite to Madya (Alcohol) and Visha (poison). They are as follows - Guru (heavy), Sheeta (cold), Mridu (soft in nature), Shlakashna (smooth), Bahalam (which spreads into the minute channels), Madhura (sweet in nature), Sthira (stable or firm), Prasanna (pleasant), Picchilam (sticky), Snigdha (unctuous or oily).

CLASSIFICATION OF OJA

According to Acharya Chakrapani there are two types of Oja found in the body.

1. PARA OJA[ix]-

Acharya Charak mentioned that Hridya (heart) is dwelling place of Para Ojas. It is best and most important. Its measurement is Ashta bindu (eight drops). This Para Oja is responsible for continuation of life, therefore whenever, there is any decrease or loss in the volume of Para Oja it would give rise to grave diseases and instantaneous death of that person.

2. APARA OJA[x]-

Apara Oja is also known as Shleshmika Oja as its properties are similar to that of Shleshma (Kapha). Apara Ojas is present all over the body. According to Acharya Charak, the quantity of Oja in a healthy individual is Ardhanjali. The seat of Apar Oja is the ten vessels connected with Hridya. Any diminution in the volume of Apara Oja will result in the absence of strength of the body and causes of various diseases.[xi]

AETIOLOGY OF OJA KSHAYA[xii, xiii,xiv]

1. Ativyayama (Excessive physical exercise)
2. Anashana (Fasting for long period)
3. Chinta (Constant worry)
4. Consumption of food which are dry – moisture less in nature
5. Pramitashana (Consuming very less quantity of food)
6. Vata-atapa sevan (Excessive exposure to heavy blows of wind and sun heat)
7. Bhaya (Grief and sorrow)
8. Rukshapan (Drinking strong wines)

9. Prajagar (Keeping awake at nights)
10. Excessive elimination of Kapha, Shonita, Shukraandmala.
11. Kala- due to old age.
12. Abhigata (Mental or physical Trauma or injury to Marma or vital parts of the body)
13. Kopa (Anger)
14. Ativyavaya (Excessive sex)

CLASSIFICATION OF OJOVIKRITI

Oja may get deranged or may suffer from quantity and qualitative loss. According to Sushruta Ojovikruti is observed in the form of these three types are Ojovisransa, Vyapata and Ojaksaya. Where the Lakshanas of Vishramsa indicate beginning of Karmahani, that of Vyapad indicate Dosh Dushti also that produces Ojogunahani and Kshaya indicates Pramanatahani.

Acharya Charak also explain the symptoms of Ojakshaya, the three stages of Oja Vikriti may occur in various conditions and diseases ranging from physical and mental fatigue to acute and chronic, mild and severe types of diseases.

I. Ojas Visransa Symptoms[xv]	**II. Ojas Vyapad Symptoms[xvi]**
1. Sandhi Vishlesh (looseness of joints)	1. Stabha Gurugatrata- (Stiffness and feeling heaviness in the body)
2. Gatra Sada (weakness of the body)	2. Vata Shopha (Swelling caused by Vata dosha impairment)
3. Dosha Chyavanam (provoked Tri doshas move away from their normal seats)	3. Varna Bheda (change in complexion or discoloration)
4. Kriya Sannirodha (inability to perform normal function)	4. Glani (exhaustion)
	5. Tandra (drowsiness or stupor)
	6. Nidra (sleep)

III. Ojas Kshaya Symptoms

According to Acharya Sushruta[xvii]	**According to Acharya Charak[xviii]**
1. Murchha (unconsciousness or fainting)	1. Bibheti (person is constantly suffer from fear complex)
2. Mansakshaya (decrease of muscles)	2. Durbalo abhikshanam (physical and mental debility)
3. Moha (mental disturbance specially in judgment)	3. Dhyayati (Worries always without apparent reason)
4. Pralap (delirium)	4.Vyathitaindriya (feels discomfort in the sense organs)
5. Mrityu (death)	5. Duschhaya (developed impaired or loss of complexion of body)

	6. Durmana (bad mentation or feeble mental stamina)
	7. Ruksha (dryness or roughness)
	8. Shama (skin becomes black)
	9. Kashya (Emaciation of the body)

CLINICAL SIGNIFICANCE

While explaining the pathology of Abhinyaasjwara, Acharya Susruta named it 'Hatojous' means in this disease due to different toxin produced in the body, oja decreases.[xix]

Oja is the final and excellent essence of sapta dhatu. Similar to sapta dhatu it gets nourishment by ahara rasa. Some scholars explain it as updhatu. But as we know, oja does not nourish the body, so cannot be explained under dhatu. Dissimilar to upadhatu, it circulates all over the body through mahadhamnis so cannot be explained under upadhatu. Although it is explained as essence of sapta dhatu, but due to its prana dharak Karma, cannot be explained as dhatu[xx].

In Astangasangraha, it is said as mala of shukra dhatu. Though located in hrdaya, it pervades all over the body and controls the working of body. By its loss or destruction, the destruction of body (life) is sure to happen and by its presence, the body is sure to survive and different state (condition, activity, etc.) concerned with the body are brought properly .[xxi]

Body is originally composed of dosas, dhatus and malas. As moola, i.e., root is the chief factor in stage of origin, sustenance and destruction of plants, in same way dosa, dhatu and mala for the body[xxii]. Beyond this dosa, dhatu and mala, there is one separate entity due to which every tissue of the body remains integrity in functions and structure for strength and vitality of human body is called as ojas. The physical, mental and spiritual strength totally depends on ojas. Ojas gets formed first in the body of living beings.[xxiii]

CONCLUSION

Oja is considered as vital essence of all the seven tissues which when sufficient in quantity there is health whereas its deficiency leads to diseases. The entire metabolic activities occurring in the human body throughout the lifetime are primarily dependent on Oja. Ojakshaya is seen in the etiopathogenesis of diabetes mellitus mainly in diabetes complications so the treatment should baseon increasing the Oja or immunity along with controlling glucose level of the patients.

Prakrut oja plays an important role in maintaining healthy status of healthy individual, i.e., normal physiological function of the body and Ojasvikriti plays an important role in pathogenesis of disease. Vyadhikshamatva ultimately depends on the status of ojas. Ayurvedic Rasayan treatment corrects the agni and thereby produce best Dhatus as dhatwagnis are also at their best ability; hence ojas can be produced at their optimum level which corrects ojovikriti.

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A REVIEW ARTICLE ON SANDHIVATA W.S.R. TO OSTEOARTHRITIS

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ABSTRACT-
Vata Vyadhi is a specific group of Vataja disorders, which can be produced only by the vitiation of Vata. Acharya Charaka has mentioned Nanatmaja Vyadhi of Vata, Pitta and Kapha, but a separate chapter has been contributed to only Vata Vyadhi.
Acharya Vagbhatta has considered Vata Vyadhi as a "Maharoga". This denotes that the Acharya has given importance to Vata as it dominates in the function and is supposed to be the leader of the remaining two Dosha. Acharya Sharangadhara states that Pitta and Kapha are action less (Pangu) unless and until they are activated by Vata. Due to this reason Vatika disorders are difficult to cure and some of them are serious in nature, while other take a chronic course and make the patient cripple thus burden to family and society.

Key words- Ayurveda, vatavyadhi, sandhivat, management.

Introduction-

Vata Vyadhi is a specific group of Vataja disorders, which can be produced only by the vitiation of Vata. Acharya Charaka has mentioned Nanatmaja Vyadhi of Vata, Pitta and Kapha, but a separate chapter has been contributed to only Vata Vyadhi. Acharya Vagbhatta has considered Vata Vyadhi as a "Maharoga". This denotes that the Acharya has given importance to Vata as it dominates in the function and is supposed to be the leader of the remaining two Dosha. Acharya Sharangadhara states that Pitta and Kapha are action less (Pangu) unless and until they are activated by Vata. Due to this reason Vatika disorders are difficult to cure and some of them are serious in nature, while other take a chronic course and make the patient cripple thus burden to family and society. Sandhivata is one of the "Vata Vyadhi", which is described as a separate clinical entity even though it is not included in 80 types of Nanatmaja Vata Vikara. Although Sandhivata cripples a large number of persons, it rarely kills any persons. Thus, there is not other disease which causes so much suffering for so long. Sandhivata is one of the "Vata Vyadhi", which is described as a separate clinical entity even though it is not included in 80 types of Nanatmaja Vata Vikara. Although Sandhivata cripples a large number of persons, it rarely kills any persons. Thus, there is not other disease which causes so much suffering for so long. Because of the tendency to cripple without killing Sandhivata belongs at the head of the list of chronic diseases from the stand point of social and economic important. Acharya Charaka has defined the disease that when provoked Vata locates in the Sandhi, it causes Shotha which on palpation

appears like beg inflated with air and the movements of extension and flexion are accompanied with pain.

2. Material and method –

The disease karkatarbuda reviewed from charak samhita , susruta samhita, astang hrudhya, bhavprakash and madhavnidan.

All information was critically analyzed, discussed, and concluded.

3. Observation -

The genesis of the disease by the specific action of vitiated Doshas responsible is causation called Samprapti[1]. Due to Nidana Sevana, the Vata gets Prakupita which gets accumulated in Rikta Srotasa leading to the various generalized and localized disease of Vata[2]. Sandhivata has no specific Samprapti as per the texts available. It is classified under the heading of the Vata Vyadhi. It is also a type of Vata Vikara, where the Dushita Vata involves the Sandhi and hence, the nomenclature – Sandhivata. Here Sandhivata is categorized as a localized disease of Sandhi as it is the disease of Sandhi due to Vata Prakopa, so it can be derived that all factors contributing to the aggravation of Vata Dosha in the body are liable to produce the disease Sandhivata. In Sandhivata early pathology starts with Vata specially Vyana Vayu, which is aggravated by different factors and takes it up to the Prasara stage. The Kha-vaigunya of Sandhi leads its Sthanasanshraya. The Prakopa of Vata may be due to two causes i.e. 1) Avarana and 2)Dhatukshaya. In the obese persons, Sandhivata is commonly seen. It may be due to Avarana of Kapha and Meda. Sandhivata being a Degenerative disease and mainly occurring in the old age may also be considered due to the pure Dhatukshaya. In such type of disorders Charaka mentioned that the Kha-vaigunya is mainly due to empty Srotasa[3]. According to Chakrapani this means the diminution of Sleshaka Kapha specially its Sneha guna in the joint involved. In other words, the vata Dosha is aggravated due to different factors and Vata flows out of its Ashaya to circulate in the entire body and its constituents. During circulation it gets localized in the roots of Majjavaha Srotasa, i.e. Asthisandhi. In the Majjavaha Srotasa the Khavaigunya may already present. Because unless there is Khavaigunya of Srotasa the Dosha will note take Ashraya. The chief qualities of vata are – Khara, Ruksha, Vishad and Laghu. Sandhi gives Ashraya to Sleshaka Kapha which has to following qualities Guru, Snigdha, and Mrudu. When aggravated vata gets localized in the Sandhi, it over powers Kapha as well adversely affects on its qualities. The chief task of the Kapha is to sustain or Dharana. This chief aim of Kapha is destroyed by the influence of aggravated Vata. When aggravated Vata is localized into single joint the disease will be reflected only in one joint, but if Vata is present in two or more joints the disease will be represented by multiple joints involvement. The disease Sandhivata occurs when the patients attains Vatika phase of life, say after 50 years of age. As in this period Vata Dosha is found predominant due to Dhatuhani, consequently Vatika disorders are more evident. Hence, it can be said that as this entity itself is a degenerative joint disease on the other hand, the diet regimen which is mainly dominated by Vatika qualities say, Vata Vardhaka Ahara Vihara can be envisaged as the predisposing factors in Sandhivata.

Due to all days i.e. Kalaja Nidana, it causes Ashtivaha Srotodushti and Kha-vaigunya in joints, with Vata Vardhaka Ahara Vihara, it leads to Vata Sanchaya and Agnivaishamya. Further Agnivaishamya

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cause Anuloma Dhatukshaya which ultimately results in Vata Prakopa and vice versa. Because of Anuloma Dhatukshaya the vitiated Vata moves in the body and settles down in joints.

Management-

The aim of Chikitsa is to remove causative factor or disease as well as restoration of the Doshika equilibrium. The elimination of the disease can be achieved by Shodhana and Shamana. Shodhana comprises of Antaha Parimarjana and Bahira Parimarjana. Bahira Parimarjana is achieved by Snehana, Swedana, Mardana, Lepana etc. Shamana types of Chikitsa cures disease without eliminating Doshas. In the management of Sandhivata, above three measures are taken into consideration in the classics. Acharya Sushruta was the first to explain the Chikitsa in detail. He preferred Snehana, Upanaha, Agnikarma, Bandhana, Unmardana in case of Vata located in Snayu Asthi and Sandhi.

Snehana : Snehana besides being the chief Purvakarma procedure for the Panchakarma therapy, happens to be a one of the most significant Chikitsa. Snehana therapy is administered to persons in two different ways as follows.

1) External application (Abhyanga)
2) Internal application (Snehapana)

Both external and internal Snehana are effective in Sandhivata.

Sneha Dravya possesses Drava, Sukshma, Sara, Snigdha, Manda, Mrudu, Guru properties, which are due to predominance of Jala and Prithvi Mahabhuta. Sneha alleviates Vata because properties of Sneha are just opposite to those of Vata. The Vayu, in its normal or undisturbed condition, maintains a state of equilibrium between Dosha and Dhatu. Similarly it exercises considerable influence on the functioning of Manasa. Hence, this Vayu should be kept in stage of equilibrium for the individual to be healthy and happy. Snehana helps in the promotion and regulation of the proper functioning of Vayu. It is stated that by the regular use of Abhyanga, all the changes of old age could be prevented and cured, if are already manifested. This Jarahara effect of Snehana is very important as far as Sandhivata is concerned. It replenished the diminished Dhatu, increases the Prana (vitality) and strength of Agni.

Upanaha : Upanaha is one of the four types of Sweda by Acharya Sushruta, Swedana is the procedure which relieves stiffness, heaviness, cold and induces sweating. It plays dual role of Purvakarma and Pradhana Karma. Upanaha is bandaging. Here a paste of the roots of the Vayu subduing drugs is prepared and is then applied on the affected joints.

The paste should be hot and mixed with Sneha. After applying the paste, the joint is covered with leaves and then it is bandaged with cotton and leather. The duration of the bandage is about 12 hours. The application of heat causes relaxation of the muscles and tendon, improves the blood supply.

Agnikarma : Agnikarma on the affected joint relieves pain. To perform Agnikarma on Sandhi, Kshudra, Guda and Sneha are to be used. Acharya Kashyapa has contraindicated Agnikarma on Shira Sandhi and Asthi. Here, Dalhana has elaborated the fact that there is no need to perform Agnikarma on Shira Ashti and Sandhi incase of disease affective them. To explain this thing he has quoted the reference of Bhadrasaunak that by performing Agnikarma on Mamsa, disease located in Shira Snayu and Asthi get alleviated. It is stated that diseases cured with Agnikarma will never relapse and that cured with Kshara Karma or Shastra Karma may recur.

Bandhana : Bandhana is bandaging tightly leaves of Vatashamaka drugs are bandaged tightly on affected Sandhi.

This bandaging does not leave any scope for Vata to inflate the Sandhi. In Sandhigata Vata Shotha appears like a bag inflated with air, Bandhana causes abatement in this Shotha.

Unmardana : This is the type of massage in which pressure is exerted on diseased Sandhi. It relieves Shotha and enhances blood circulation.

Basti : Since Sandhivata is disease of Madhyama Rogamarga, Basti is the treatment of choice. In Sandhivata, Sneha Basti is preferable considering the Dhatukshaya and old age of the persons.

Yogasana may help for some extent in preventing and curing of Sandhivata. The regular practice of Yogasanas improves the symptoms in different ways like decreasing overweight, decreasing laxity (Bhole – 1982). Posture will also be improved by Yogasana (Yogendraji – 1984), which is also an important predisposing factor in Sandhivata.

Discussion-

Here a very pertinent question arises why the vitiated Vata settles down only in joints ? The most ameliorate answer to this question is that there is inter-relationship between the Dosha and Dushya which is called Ashraya-Ashrayi Bhava Sambandha. Due to this relation only the drugs and dietetic regimens which augment the one Dosha also have the effect on their host Dhatu.

While commenting on Sushruta Samhita, the Gayadasa quoted the wording of an unknown author "Though the Vyana Vayu is functioning all over the body but its main site of action is Sandhis" [4]. It has also been stated that as Vata is mobile in nature so a particular seat can not be attributed to it and the sites which are more mobile can be considered as a site of Vyana Vayu. Hence, if we considered the seat of Vyana Vayu as Sandhi obviously Vyana Vayu may have close relation with Sleshaka Kapha because Sandhi is Upadhatu of Meda and Meda is Ashraya of Kapha Dosha thus, there is inter-relation between them.

Whenever, the Vyana Vayu gets vitiated than simultaneously Some Sthana Vikriti or Kha-vaigunya at joints may takes place. Because of this Kha-vaigunya at Sandhis, the vitiated Vyana Vayu settles down in joints and causes Asthi Srotodushti, which results in Asthigata Vata and Sandhigata Vata[5].

Both Asthigata and Sandnhigata Vata combinedly cause the symptom Sandhi Shula and Sandhi Shotha. Sandhistha Vata separately causes Sleshaka Kaphakahsya due to Ruksha and Khara Guna. Here the Ruksha and Khara Guna of Vata are considered as antagonizing for Sleshaka Kapha which eventually results in diminution of Sleshaka Kapha (synovial fluid). Due to this diminution of Sleshaka Kapha by Sandhistha Vata, the symptom Akunchana Prasaranajanya Vedana at joints takes place. Excessive accumulation of Vata at Sandhi by Sandhistha Vata can cause Vatapurna Dritivata Shotha. Thus, we can say collectively the Asthigata Vata, Sandhistha Vata, Meda and Kaphavrita .

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ARTICLE ON EFFECT OF MANJISTHA IN SKIN CARE WSR AYURVEDA CONTEXT

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ABSTRACT –

Ayurveda is an ancient medical science originated in India. Since the early age, human life has a great impact on the external appearance of an individual. Skin is the basic element of the external appearance. Beauty is generally depended on the type and texture of the skin one has. Ayurveda determined beauty by *prakriti, sara, sanhana, pramana, twak* and *dirghayu lakshana*. The concept of using herbs for beautification is well defined in Ayurveda. The cosmetic preparations are used for worship and for sensual enjoyment in India since Vedic period.Cosmetology is the science of alternation of appearance and modification of beauty.*Ayurveda* cosmetology starts from *dinacharya* and *ritucharya* with the use of herbal medicines. *Ayurvedacharyas* believe that toxins (imbalanced doshas) inside the body makes the person unhealthy and the unhealthy body leads to unhealthy skin (dull skin) etc. . Manjistha is considered to be one of the most valuable herbs in Ayurveda, the world's oldest health care system that originated in India.

KEYWORDS -Ayurveda cosmetology,Beauty, Manjistha, Skin care.

INTRODUCTION - Beauty is desired by every individual which give pleasure to the sense. Beauty is not only a source of joy but also gives immense confidence . . In Ayurveda the concept of using Aushadha Dravaya or herbs for beautification is well explained. Twacha cover of the exposed part of the body the sense of touch, over the entire body through skin. Healthy person with a well formed flesh which is firm, the skin is correspondingly firm, glowing hair is also closely related and part of beauty of the human beings.Ayurveda cosmetology started from mother wombs, dinacharya, ratricharya, ritucharya with the practice of medicinal herbs and minerals.. Cosmetology is the science of alternation of appearance and modification of beauty.Ayurveda focus on external and internal beauty.The secret of Ayurvedic cosmetology is in the surrounding nature. There are some secret way of physical beauty in Ayurveda like Ayurvedic therapies, treatment and advice. According to Ayurveda Ama (toxins) free body, improve cellular nutrition, smooth removal and the balance of the Dosha resulting health development, beauty management and healing. Ahar (Diet) and lifestyle are two major things which help to gain good health and beauty.Acharyas of Ayurveda state that the

function of Ayurvedic herb‟s is to purify blood and eliminate vitiated doshas (Vata, Pitta, Kapha) that causes skin disorders and other diseases.

Concept of Beauty in Ayurveda -

Ayurveda decides the beauty by Sara (Structural dominance), Prakriti (Body constitution) Sanhanana (Body density), Pramana (Measurement), Twaka (Skin complexion), and Dirghayu Lakshana (Signs of long life). According to Ayurveda, human body functions through various channel systems called "Srotamsi", containing both microscopic and macroscopic structures such as the respiratory system, lymphatic/ circulatory system, reproductive system and nervous systems, among others. These channels function as innumerable psychobiological processes such as enzyme production, neuro-transmitter secretion, hormonal intelligence, respiratory capacity and digestive assimilation/ elimination, immune power etc and responsible for wellness and beauty.

Ayurveda medicine as Cosmetics -

In Charaka Samhita Acharya Charaka mentioned cosmetic drugs as, Kushtaghna, Varnya, Kandughna etc. and many Pralepa (Poultice) are narrated in Sushruta Samhita by Acharya Sushruta and Ashtanga Hridaya by Acharya Vagbhatta. The very common and well accepted ones are Chandanadi Lepa, Kumkumadi Lepa, Dashanga Lepa, Kukummadi Taila, Himasagar Taila, Nilibringaraj Taila,etc. Buttermilk and goat's milk traditionally used in Indian face mask formulations have soothing and moisturizing properties. They also contain vitamin A, B6, B12 and E.

Manjistha (Rubia cordifolia) –

Rubia cordifolia, often known as Common Madder or Indian Madder, is a species of flowering plant in the coffee family, Rubiaceae.
The Manjistha, literally meaning "bright red" is of the coffee family and is most commonly known for its extremely effective cleansing and detoxifying abilities. The plant itself is a climber by nature, most commonly found and grown in the Indian subcontinent. A multipurpose herb, it is best used for people attempting to detoxify their bodies or for those eating a primarily toxic diet.

Ayurvedic Properties -

Rasa - Madhura, Tikta, Kasaya, **Guna** - Guru, **Vipaka** - Katu, **Virya** - Usna, **Karma** - Svarya, Vrsya, Varnya, Visa, Krmighna, Kaphapittasamaka, Sothaghna, Kusthaghna, Pramehaghna, Stambhan, Artavajanana, Rasanyana, Sonitasthapana.

Ayurvedic Indications Of Manjistha –

Since the Vedic period, Manjistha denoted as "Atreya Aranyaka" has been mentioned by the ancient Indian sage and physician, Charaka, as a "rejuvenative herb" that confers potent detoxifying effects. Several ayurvedic scriptures and journals mention this bright red root for various indications

which include Pandu (treats skin disorders), Raktadoshahara (blood purifying), Yakrit Vikara (prevents liver infections), Sangrahini (treats diarrhoea), Jvara (useful in fever), Kamala (prevents jaundice), Kasahara (Relieves cough), Amahara (treats indigestion), Dahahara (relieves burning sensation), Shwasha (relieves breathing difficulties), Deepana (enhances stomach fire), Pachana (helps in digestion), Rochana (stimulates appetite), Kupachan (prevents bloating, indigestion), Anulomana (improves breathing), Vayasthapana (prevents ageing), Shonitasthapana (prevents bleeding), Hridaya (treats heart problems), Vran Ropana (heals wounds), Mehahara (treats urinary tract disorders), Prameha (manages diabetes), Vamana (prevents nausea and vomiting), Trutahara (relieves excessive thirst), Pandu (treats anaemia), Balya (improves muscle strength), Hikkanigrahana (controls hiccups), Kantya (relieves sore throat), Triptighno (relieves pseudo-satiation), and Vamanopaga (treats emesis), Varnya (improves complexion), and Krimihara (relieves intestinal worms).

Benefits Of Manjistha For Skin

*Manjistha benefits for skin dryness

People who have dry skin can surely benefit from manjistha, especially if they develop dry skin flareup. Manjistha can help to soothe, soften, and calm the skin by reducing the flaking.

*Manjistha powder benefits to improve skin complexion

The powder can also be used to improve skin complexion and uneven skin tone. This powder can also help take care of other problems like brown spots, tan, dark spots, freckles, etc.

*Benefits of manjistha for acne-prone skin and acne scars

People who suffer from acne problems will surely see a difference if they use manjistha regularly. It is known for its anti-androgen, antioxidant, anti-inflammatory, and anti-bacterial properties.

*Manjistha benefits for wounds

The wounds that have not healed properly can lead to various skin problems and conditions. You can now take care of injuries, mild burns, and cuts naturally with the decoction of madder root powder benefits.

1) **Effect On Doshas**

This magical blood-purifying herb showcases Madhura (i.e. sweet), Kashaya (i.e. astringent) and Tikta (i.e. bitter) Rasa. It is blessed with Rukhsha (dry) and Guru (i.e. heavy) gunas. It has

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Ushna Virya (hot potency) and Katu Vipaka (pungent metabolic property). The bioactive ingredients in this Ayurvedic Properties

Rasa - Madhura, Tikta, Kasaya,

Guna - Guru,

Vipaka - Katu,

Virya - Usna,

Karma - Svarya, Vrsya, Varnya, Visa, Krmighna, Kaphapittasamaka, Sothaghna, Kusthaghna, Pramehaghna, Stambhan, Artavajanana, Rasanyana, Sonitasthapana.red root makes it a Kapha-Pitta Samapak dravya i.e., it actively balances the Pitta (fire and air) doshas and Kapha (earth and water) doshas and often an excess of it can aggravate the Vata (air) doshas.

Manjistha is widely available in the form of churnas, avalehas, kashayams and gutikas and even as dried root. Owing to its pungent-bitter taste, one can consume it alongside honey to mask the taste.

The precise therapeutic dosage of the manjistha may vary from person to person depending upon the age, severity, and condition of the patient. One must consult an ayurvedic doctor or practitioner, as he or she will thoroughly examine the indications and prescribe the effective dosage for a specific period of time.

Churna/ Powder - Take ¼ - ½ tsp of Manjistha Churna by mixing it in warm water and adding honey twice a day, after meals or as directed by the ayurvedic doctor or practitioner.

Gutika/ Tablet/ Capsule - Take 1-2 tab/ cap of Manjistha alongside water twice a day after meals.

Conclusion -

Ayurveda is an ancient medicinal science in which using herbs and other natural ingredients. Ayurveda products and Indian herbs are being sourced and tested for use in the cosmetics industry and practiced in beauty parlors. Manjistha is a drug used since ancient time as a colouring agent and promotes pigmentation of skin.

It is extensively used for treating a variety of skin conditions, enhancing lymphatic functions, remedying flu and feverish conditions, relieving liver problems, managing cough and cold, sore throat, treating respiratory diseases, preventing viral infections, promoting digestion and many more.

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AYURVEDIC MEDICINE PREPARATIONS WITHIN THE MANAGEMENT OF WHITE DISCHARGE

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ABSTRACT
Leucorrhoea is a terrible symptom within the lifetime of girls and is extremely usually ascertained symptom in currently day's gynecological practices. Once the discharge is pathological it causes associated complains like fanny cutaneous sensation, low aching, frequent wetting of under garments and restlessness. Thanks to the agitated schedule of girl in epoch there's lack of your time to keep up physical and psychological state standing. The trendy era, competitive milestones, fast food, late night meals, consumption of alcohol and inadequate sleep resulted within the trying conditions distrurbing the secretion balance inflicting discharge abnormalities ie. asrigdara, atyaartava,vandhya yoni etc.

Keywords- Leucorrhoea, asrigdara, yoni vyapada, vandhya.

INTRODUCTION

Ayurveda reveals twenty yonivyapadas. Leucorrhoea isn't considered as a unwellness in Ayurveda however it's an indication observed in a very numerous gynecological disorders. The root reason for yoni rogas is mithyaahara, vihara, artavadosha, beejadosha and daiva. There's no separate chapter revealing leucorrhoea or Shwetpradara in Ayurvedic texts. Sushruta explained physiological discharge throughout sexual issues as leucorrhoea. The far-famed commentator Chakrapani has explained the word Pandura-Asrigdaara (Pale channel discharge) as Shwentpradera.

Classification of Leucorrhoea :

1. Physiological - traditional secretions from female genitals, vagina, cervix increase underneath the subsequent conditions - At time of life thanks to endocrine effects, it corrects itself. Throughout organic process & early physiological condition. During sexual excitement. This more than secretion is typically enough to moisten the female genitals & sometimes pours bent on stain the underneath article of clothing.

2. Pathological

- General Factors
- Health and underneath nourishment.
- Dysfunctional (endocrinal, married dissonance & psychosomatic) Psychological.

2.2 pelvic factors Before time of life - vulvo redness, foreign body within canal when time of life in young virgin- poor general health, unclean personal hygiene, anemia, endocrine dysfunctions,

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autoeroticism. Nulliparous married women Trichomonas & monilial redness, cervicitis, Bartholinitis. The discharge is liquid body substance. Preserved contraceptive measures or sexual excess is also the causes. Mucoid or watery Leucorrhea are often an indication of girls with sterility & DUB. Gestation girls throughout the kid bearing amount - cervical erosion & chronic inflammation. Premenopausal- female internal reproductive organ polyps, ulceration in venereal prolapsed, female internal reproductive organ fibroid, female internal reproductive organ cancer. Post menopausal- cancer of venereal tract, venereal prolapsed and old redness.

As Per Ayurveda –

Definition-Excessive white discharge from canal and cervix thanks to nullification of Rasa, Kapha and ApanaVata.

- **Types**

1. Watery (tanu) KP+ a pair of. slippy (picchila) potential unit + three. large and thick (styana) sama K + four. Sticky and fibrous (avilatantula) muco-punilant sama Kapha and V + five. offensive yellow (durgandhipeeta). sama Kapha with P+. they need been enclosed under-various yoni vyapad conditions

Etiology:

trendy agitated way nourishment Late night meals Inadequate sleep Competitive milestones resulting in trying conditions unsanitary conditions of canal pathologic process – Vitiated Rasa and Kapha along side Vata have an effect on canal in addition as Cervix and turn out this unwellness. Leucorrhoea (ShwetaPradara) during this ill Kaphadosha is answerable for originating this unwellness. This ill is that the results of aggravation of Kaphadosha within the build thanks to sure diets and way. Aggravated Kapha contaminates the canal and produces viscosity and cutaneous sensation within the canal amid a thick white discharge Symptoms of Leucorrhoea (ShwetaPradar)

Following area unit the signs or symptoms that indicate the presence of this unwellness in females:

• Excessive discharge usually followed by foul odour.
• Pain in body part space of the rear • General unfitness
• Itching/burning sensation Excessive slippy white discharge per canal, severe cutaneous sensation with pain and low aching area unit outstanding symptoms

Investigations –

1) Haemogram & ESR to rule out anemia, acute or chronic infection.
1) Haemogram & ESR to rule out anemia, acute or chronic infection. 2) Gynecological check up - PV examination etc.
3) Body waste (R)
4) Stool (R) for ova & cyst.
5) Blood glucose (F & PP) to rule out DM.

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6) VDRL to rule out STD
7) Microscopic anatomy study from canal & cervical scraping.

Treatment

General treatment- Removal of cause, opposing Kapha diet and procedures, varti-channel suppositories, basti douches, dhooma-medicated application and to be followed.

Specific-treatment

For the symptomatic treatment use the subsequent –

JasadBhasmalTrivangaBhasmalPravalabhasma /Vangabhasma - one hundred twenty five mg. three times each day with honey.

Jeerakadirishta / Ushirasava /Ashokarishta —4 tablespoon with equal water a pair of times when meals.

ShatavariKalpa, shatavarighruta a pair of tablespoon with milk times each day. Askandalnagakeshara / lodhra /sariva /swetachandana / mocharasa / alum / gokshura powder five hundred mg bd3.

Laghumalini Vasant a pair of Tab. three times each day SukshamaTriphala a pair of Tab. three times each day LaghumaliniVasant a pair of Tab. three times each day Chandraprabha a pair of Tab. three times each day.

KamadudhaVati a pair of three times each day

Chandaprabha - five hundred mg. + Pushyanugachuma - one weight unit. + PradarantakaLoh - 250 mg. twofold day daily with Jeerakadyarishta. OR YashadaBhasma - one hundred twenty five mg. + Kukkutanandatwaka bhasma-250 mg. +Amla powder-500 mg. twofold day with honey

Kukuttandatvakbhasma oral intake is additionally smart for patients. Symplocosracemosa (Pathanilodhra) kalka along side Vata (Ficusbengalsis) kshaya (Shastri KN 2006).

Dalbergiasisso leaves are excellent remedy for patients littered with leuccorhoea Seed of fruit Emblicaofficinalis (Amlaki) mixed with mishri and honey (Shastri KN 2006)

Pushyanuga Churna, Pippali (Piper longum), Haritaki (Terminaliachebula) and lohabhasmaalong with rice water. Solely rice water is additionally smart remedy for leucorrhoea.

Powder of bark Symplocosracemos, Saracaasoca and Berberis extract, with rice water and honey

Local treatment

1. Yoni dhavana Slimy discharge -Triphala simmering Sticky & fibrous discharge- Dashamool simmering Offensive & yellow discharge -Sandalwood &Lodhra.

2. Medicated pichu cotton soaked in honey + genus Curcuma ought to be unbroken on cervix. For K+ Dhatakyadi oil (Woodfordiafruticosa) for severe cutaneous sensation, pichu of Karanja (Pongamiapinnata) oil.

3.Cauterization— Agnikarma is finished manually or by current four.

4.Varti —wick Prepare channel medication of Pippali, Black gram, Rock salt, Kushtha (Sausuralappa) and Shatahva (anis) and keep constant in canal. 5. Native application – Karanja oil, nimb oil, Vranashodhan oil, Vranaropan oil.

6. Yonidhupana– Dhatakipushpa + Vacha + Triphala, Dhatura (Dhhaturaalba), Ajamoda, Shatapushpa (Anethumsowa) and Guggulu.
Effective formulation four teaspoon honey and take this Leucorrhoea combine one teaspoon of Amalaki fruit (Indian gooseberry) powder with one tea mixture double on a daily basis.

Effective Remedies for mucous secretion (ShwetaPradara) Soak 5 grams of fenugreek seeds in 250 millilitre. Water (overnight or minimum of four hours). Boil and cut back it to one hundred fifty millilitre. Filter and drink heat once or double on a daily basis. Boil six cups of water. Add one cup rice and cook till rice becomes soft. Sieve the rice. The water is that the rice porridge. Take one cup rice porridge and add salt (according to taste), 1 / 4 teaspoon of black pepper. Drink warm.

Diet- Avoid sweet, sour, salty style. Recent fruits ought to be taken consistent with constitution. Non-vegetarian foods, excessive quantity of puddings, garlic, onion, pickles, potatoes, sour foods, and excessive cooked and greasy food should be avoided. Grains -Wheat, Rice, inexperienced gram; Lentils, Millet. Farm -Butter, drawn butter and milk. Recommendation to the Patient: sexuality throughout treatment should be reduced or avoided. Avoid reading, looking or listening which is able to stimulate gender. Bowels should be exhausted often

YOG ASANAS FOR LEUCORRHOEA

The patient ought to arise early within the morning and take 2 glasses of lukewarm water in empty abdomen. Then when 5 minutes she ought to begin asanas :

Sarbangasana
Mathsyasana
SuptaBajrasana
Pavanmuktasana
Bhujangasana
Pranayamas
Anulomviloom: - five minutes solely
Bhasrika:- five minutes solely

CONCLUSION:

Sweta Pradara not solely disturbs the physical health of girls however additionally affects the mental status. Writing has given range of effective remedies to treat white discharge. These Ayurvedic formulations have given miraculous results and may be utilized in treating varied gynecologic

conditions related to white discharge. Once the etiology has been dominated out it's terribly straightforward to treat the ladies with satisfying results and there is no repetition of the un wellness.

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Ayurvedic immunity boosting measures during COVID 19 pandemic

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Abstract
A worldwide pandemic causing virus i.e. Corona (COVID 19) is creating fatal problem for human race due to its lethal attack. Various attempts are under process to develop an effective vaccine. Any kind of infection or disease affects persons with low immunity; Indian Ayurveda is an ancient practice which can help us to boost immunity during this pandemic period. Ayurveda, being the science of human life, propagates the gifts of Mother Nature in maintaining healthy living. There are various natural resources are present in our day to day routine which may be used by us for boosting our immune system, and doing so could help us to prevent corona virus infection.

Keywords: COVID-19, ayurveda, immunity, medicinal plants

1. Introduction
Novel Corona virus Disease (COVID-19) is a highly infectious disease. The outbreak was first detected in Wuhan City, Hubei Province of China and become a pandemic due to its very high transmission rate [1].
Ayurveda is the oldest science of life and health care in the world, its antiquity going back to the ancient Vedas. Its classical ancient knowledge-base has survived up to the modern times through a set of six authentic ancient books consisting of three pre-Christian texts namely Caraka, Suśruta and *Samhitās*of Vāgbhatta popularly known as *Bhattrayī* besides three medieval texts namely *Mādhavanidāna, Śārangdhara samhitā* and *Bhāvaprakāśa* collectively called *Laghuttrayī.* Immunity is the central focus of modern immunology. Immunity is a biological expression that expresses a state of having abundant biological defences to avoid various disease, infections and other unwanted biological invasion [2]. Ayurveda's widespread knowledge base on preventive care, derives from the concepts of "*Dinacharya*" - daily regimes and "*Ritucharya*" - seasonal regimes to maintain healthy life. It is a flora-based concept of treatment. The simplicity of wakefulness about oneself and the harmony each human being can accomplish by elevating and maintaining his or her natural immunity is emphasized across Ayurveda's classical literature. Recently various worker documented COVID-19 situation on different countries like in Brazil [3], Africa [4], Italy [5], Nigeria [6] and world scenario [1, 7, 8].
In the wake of the corona virus outbreak, entire human race worldwide is suffering. Enhancing the human body's natural defence mechanism (immunity) plays acentral role in maintaining most advantageous health.
"All individuals are not equally and always empoweredwith immunity. – *CS. Sū.* 28.16"

2. Methodology
Extensive literature related Ayurveda and instructions of AYUSH ministry (AYUSH: Ayurveda, Unani, Siddha and Homoeopathy) were analysed for present output, medicinal plants were collected, identified and photographed. Extensive information regarding medicinal plants was also collected through interview with local inhabitants.

3. Results
We all know that prevention is better than cure. While there is no medicine for COVID-19 as of now, it will be good to take preventive measures which boost our immunity in these days.
Few measures were given by Indian AYUSH ministry out of which three major are as follows: 1. Drink warm water throughout the day. 2. Daily practice of Yogasana, Pranayama and meditation for at least 30 minutes as advised by Ministry of AYUSH and 3. Spices like Haldi (Turmeric), Jeera (Cumin), Dhaniya (Coriander) and Lahsun (Garlic) are recommended in cooking.

Ayurvedic Immunity Promoting Measures
Immunity boosting methods and herbal methods were also suggested by ministry i.e., Drink herbal decoction (Kadha) made from some medicinal plants such as, Tulsi (Basil), Dalchini (Cinnamon), Kalimirch (Black pepper), Ginger and Munakka (Raisin) - once or twice a day. Jaggery (natural sugar) can be used and fresh lemon juice to your taste. Milk with Half tea spoon Haldi (turmeric) powderonce or twice a day [9, 10]. Above mentioned medicinal plants contain, Curcumin ($C_{21}H_{20}O_6$), Cuminaldehyde ($C_{10}H_{12}O$), Cuminic alcohol ($C_{10}H_{14}O$), Limonene ($C_{10}H_{16}$), Borneol ($C_{10}H_{18}O$), Camphor ($C_{10}H_{16}O$), Allicin ($C_6H_{10}OS_2$), Methyl chavicol ($C_{10}H_{12}O$), Eugenol ($C_{10}H_{12}O_2$) and Linalool ($C_{10}H_{18}O$). Piperine ($C_{17}H_{19}NO_3$), Gingerols ($C_{17}H_{26}O_4$), Resveratrol ($C_{14}H_{12}O_3$), Cinnamaldehyde (C_9H_8O), Catechin ($C_{15}H_{14}O_6$) and Citric acid ($C_6H_8O_7$) as the major compound. (Table 1)

Fig 1: Photographs of some selected plants and materials (1-Turmeric, 2- Lemon, 3- Jiggery, 4-Cumin, 5- Black pepper, 6- Resins, 7- Garlic, 8- Basil, 9- Coriander, 10- Ginger)

Table 1: List of medicinal plant suggested for daily use during COVID 19 period to boost immunity.

Botanical name	Common name	Habit	Part used	Medicinal properties	Principal constituents
Curcuma longa	Haldi, Turmeric	Herb	Rhizome	Cardiovascular and anti-diabetic effects, gastrointestinal effects, anti-cancer effect, antimicrobial activity, hepatoprotective and renoprotective effects, photo-protector activity and in the treatment of inflammatory and edematicdisordersand Alzheimer disease etc [11].	Curcumin
Cuminum longa	Jeera, Cumin	Herb	Fruit	Digestive stimulant action, antidiabetic effects, anti-inflammatory effects, antioxidant and antimicrobial activity, anti-cancer properties, chemopreventive effects, cardio-protective influence through hypolipidemicand hypotensive effects, ameliorative effects on dyslipidemia, analgesic activity, immunomodulatory action, gastroprotective effect, pulmonary-protective activity and anti-asthmatic effect etc [12].	Cuminaldehyde, cuminic alcohol
Coriandrum sativum	Dhaniya, Coriander	Herb	Leaf/fruit	Antioxidant activity, hypoglycemic activity, hypolipidemic activity, insecticidal effect, aflatoxin control, antibacterial activity, antimutagenic potential, control of swellings, treatment of diarrhea, mouth ulcers, anemia, menstrual disorders, small pox, eye care, conjunctivitis and skin disorders etc [13].	Carvone, geraniol, limonene, borneol, camphor, elemol, and linalool
Allium sativum	Lahsun, Garlic	Herb	Bulb	Carminative, gastric stimulant, antimicrobial, antiviral properties, broad spectrum antibiotic and reduce cholesterol level etc [14, 15]	Allicin
Ocimum basilicum	Tulsi, Basil	Herb	Leaf	Antioxidant, anti-aging, anticancer, antiviral, antimicrobial properties, immunomodulatory activity, immunomodulatory activity, antipyretic activity, anti-arthritic activity, treatment of gum ulcers, kidney problems, earache, menstrual irregularities, arthritis, anorexia and malaria and used as a haemostypticin childbirth etc [16].	Methyl chavicol, eugenol and linalool.
Cinnamomum zeylanicum	Dalchini, Cinnamomum	Tree	Bark/ leaf	Anti-microbial properties, anti-parasitic effects, effects on blood pressure, anti-oxidant properties and glycaemic control etc [17].	cinnamaldehyde (bark),eugenol (leaf) and camphor (root)
Piper nigrum	Kalimirch, Black Pepper	Climber	Fruit	Treatment of fever, malaria, respiratory diseases, gastrointestinal disorders, neurological, broncho-pulmonary and gastrointestinal disorders, anticancerigenousetc [18, 19]	Piperine
Zingiber officinale	Adrak, Ginger	Herb	Rhizome	Anti-inflammatory and analgesic activities, anti-emetic activity, anti-diabetes activity, cancer preventive activity, equivocal activities and used in Dysmenorrhea etc.[20]	Gingerols
Vitis vinifera	Munnakka,	Climber	Dried fruit	Antioxidant property, anti-infectious property, anti-carcinogenic activity, anti-obese property, anti-aging property, anti-atherogenic property, anti-diabetic property and immunomodulatory effect etc [21].	Resveratrol, catechin.
Citrus limon	Nimboo,	Shrub	fruit	Stress reliever, reinforce body defenses and prevent numerous illnesses, antimigraine, depurative property, diuretic effect, anticancerigenous, improve energy and alertness, astringent effects and used in aromatherapy etc [22]	Citric acid

4. Conclusion

Present study clearly guides humans for better immunity through traditional methods that we can fight strongly with all kind of pandemics. The whole scientific world is trying to develop a tool against Corona virus but till this great discovery we need to develop great immunity against these viruses, time witness many pandemics and we the human

race overcome with all of them soon we will defeat corona as well.

5. Acknowledgement
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CHALLENGES OF SANSKRIT TEACHING IN INDIA

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Abstract –
The ancient and classical creations of the Indo-Aryan tongue each in quality and in body and abundance of excellence, in their potent originality and force and sweetness, in their substance and art and structure, in grandeur and justice and charm of speech and at intervals the peak and breadth of the reach of their spirit stand very plain at intervals the front rank among the world's nicest literatures. The language itself, as has been universally recognized by those competent to make a judgment, is one among the foremost good, the foremost glorious and splendidly spare literary instruments developed by the human mind, quickly majestic and sweet and versatile, durable and clearly-formed and full and spirited and delicate, and its quality and character would be of itself a spare proof of the character and quality of the race whose mind it expressed and additionally the culture of that it had been the reflective medium.

Keywords-Sanskrit,Challenges,opportunities,India

Introduction-
Sanskrit language was the medium of instruction in ancient Asian country. highlight importance of learning of Sanskrit, the Indian academic Policy 1913, urged institution of a Central analysis

Institute, that was to be unbroken "open to students from all components of {india|India|Republic of Asian country|Bharat|Asiancountry|Asian nation} which it ought to as way as doable mix its activities with those of facultys|the colleges} of India associate degreed completely different seats of learning" and will "attract within the course of your time panditsandmaulvisof

eminence to the institute so to market an interchange of the upper scholar¬ship of each the previous and therefore the new school of orientalists throughout India".(Govt. of India-under British Rule 1913, pp. 43-44). Importance of Sanskrit education has been distinguished by several educationists. Sri Aurobindo discussing concerning Indian culture expressed that "The nice mass of literature may be a literature of human life..."(Sri Aurobindo 1997, p.126),After independence, at intervals the year 1956-57, the Central Government appointed a Sanskrit Commission to a lower place the berth of faculty member. Suniti Kumar Chatterjee. a handful of important suggestions of this Commission are:

1. Development of Sanskrit pedagogy courses for employment of teachers of Sanskrit language at intervals the high colleges and in recognised pathasalas.
2. Initiate employment for Sanskrit graduates of the colleges
3. employment in trendy ways in which for Sanskrit teaching for pundits;
4. institution of Sanskrit Universities in varied sq. measureas- that ar to

a) Perform as centre of higher studies and analysis in Sanskrit;

b) Have Sanskrit as its sole medium of instruction;

c) end up literature in Sanskrit

5. institution of Central Sanskrit Board.

The problems that ar moon-faced in Sanskrit teaching ar nearly equal in each Asian country and India. Still the intensity of such issues is a lot of in {india|India|Republic of Asian country|Bharat|Asiancountry|Asian nation} than in India for several reasons like relatively smaller geographical size of India, its land-lockedness, abundance of mountain surroundings, influence of non-Aryan racial teams and therefore the increasing interest of society in Western education. a number of the putting major issues ar given here under:

* Losing interest of the individuals in Sanskritlearning.
* EnmityofnonAryanracestowardsAryancultureandSanskrit.
* Shortage of employment opportunities for Sanskritscholars.
* False information that Sanskrit is beneficial solely in ancient ritual activities and profession.
* Passiveness of Administration(Government).
* Economic unfit land of commonpeople.

* TraditionalteachingmethodsadoptedintheSanskriteducationalinstitutions.

* Noattemptsforreconcilingeasternandwestern(modern)theoriesofknowledge.

* Absence of Sanskrit popularizationactivity.

* tolerance of Sanskrit academics to show in Sanskritmedium. Opportunities of Sanskrit Teaching in india n country Thefollowingideasmayhelpinincreasingthepublicinteresttowards Sanskrit.
Introduction of Yoga within the Curriculum: within the method of Nature cure for solidification several diseases Yoga is popularly accepted by many folks. By providing Yoga within the education individuals can grow their interest forSanskrit.
Throughthesy llabusofAyurvedapeoplewouldliketolearnSanskrit.

ItistheopinionofthescholarsthattheassociationofSanskritwithComputerwill stand out all alternative branches of learning. By creating Sanskrit-Computer learning obligatory individuals can grow their interest forSanskrit.
numerous coaching Programmes: the subsequent short term programme packages to show Sanskrit-based religious writing rituals, Buddhist rituals, Jyotiṣa, Palmistry, Purāṇa recitation,Classicaldance,Sculptureandvariousscriptswillhelptogrowinterestfor Sanskrit.
Practicalandjob-orientedcoursesinthesubjectssuchasĀyurvedaandComputers in connection to Sanskrit might higher thesituation.
AccessforSanskritistsalsotoenterGovernment,Administration,Managementand cademicservicesonaparwithothermodernsocialSciencefacultymembersshould beprovided.NecessarychangesinSanskritcoursetothateffectshouldbebroughtin.
there's a idea among the people who Sanskrit is confined to pattern activitiesonly.Toremovethismisconceptionmanyexplorativeprojectsrelevantto SanskritandScienceshouldbeundertakenandtheoutcomeshouldbedemonstratedto thepublicwithempiricalproof,whichinturnwillwipeoutexistingmisconception.

The political leaders do a lot of hurt to the Sanskrit field with associate degree interest to realize the support of the anti- Sanskrit vote. the govt. fashioned by the teams of such leaders can naturally and indirectly work for the autumn of Sanskrit solely. To avoid this within the several states necessary steps ought to be taken for the protection of Sanskrit learningenvironment.
Astheacademicprogrammeisverydifficultforunderstandingandlearningandas it's extremely tough to urge employment through such exhausting Sanskrit courses, common peoplearenotshowinginteresttolearnSanskrit.Todrivepovertytheyareclingingto learn another easy disciplines of learning for his or her immediate bread and butter. Therefore, to draw in the eye of such individuals some simplified and job-oriented courses ought to bedesigned.
typically the trendy Sanskrit academics ar adopting the standard ways of teachingonlyagainstthepsychologyofthestudents.Theirwayofteachingiskeeping off even such those who have some interest for Sanskrit learning. To rectify this a course ought to be conducted for such

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Sanskrit academics. From time to time programmes in fashionable teaching ways ought to be introduced. On the trendy curriculumprinciplesnewtextbooksshouldbeauthored/broughtout.

the dearth of reconciliation between oriental and fashionable theories is another hindrance during this respect. Some topics prescribed within the teaching programmes ar pseudoscientific. for example within the within the within the ar prescribed. Those treatises say that the SunmovesintheskywhentheEarthisstatic,
theMercurymovesnearbytheMoon,theSunisoneamongthenineplanetsandother such matters. however fashionable scientific ideas ar against these notions. they assert that the planet is dynamic, the Sun is static, the Mercury moves near and around the Sun, the Sun may be a star however not a planet so on. The those who observe this could get confused.Hence,thefactshouldbeexaminedwhileprescribingsuchtests.

AnotherseriousproblemistheshortageofstudentsforhigherlearninginSanskrit within the Universities. As Sanskrit popularization activities ar nearly absentnowadays, this shortage of scholars results. Therefore, Government ought to undertake such programmes,whichcanhelpforthegrowthofSanskritlearnersintheUniversities.

teaching Indo-Aryan through different language media is additionally one amongst the reasonsfor the fallofpublicinterestinSanskrit;presentlymostoftheSanskritteachersareteaching Indo-Aryan through their several mother tongues. By this deed the academics square measure step by step turning into incapable of teaching through Indo-Aryan medium. With a concept that it's tough to achieve sensible information of Indo-Aryan underneath the steerage of such academics,thestudentswhogetadmissionintheVidyapeethasareinnotimeshiftingto

otherfaculties.TofacethissituationSanskritteachersshouldbewelltrainedthrough varied coaching programmes rising their teaching skills to show Indo-Aryan through Sanskritmedium.

Conclusion-

In view of the substantial distinction between the quality and non-traditional styles of Indo- Aryan education and to induce obviate the classification mentioned more than, there is wish for a national level agency that's to place down, maintain and co- ordinate the academic standards for Indo-Aryan education as whole by conveyance regarding pregnant interaction between non- traditional and ancient designs.

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14. Making ICT in Sanskrit Schools as a part of Rashtriya Madhyamik Shiksha Abhiyan (RMSA) (p.30)Improving skills of Sanskrit teachers through in-service programmes (pp.29-30)

15. Establishing centres to teach Yoga through Sanskrit and Sanskrit through Yoga (p.29).

16. Financial support for internship in learning Sanskrit in Sanskrit institutions to unravel the scientific knowledge hidden in Sanskrit literature for students of IITs, NIITs, IISERs, IIITs, IISc and ACITE approved technical colleges (p.29)

THE EFFECTS OF ARTIFICIAL INTELLIGENCE ON SOFTWARE TESTING: A REVIEW

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Abstract

AI assumes a significant function in our life and connects the greater part of our encompassing applications and frameworks. A large amount of data is made each day from a wide range of sources that should be observed and investigated appropriately and report results and takes activities. A more intricate programming application have been manufactured, time is turning into a basic factor to deliver applications that must be completely tried and follow Business Requirements. Artificial intelligence assumes a key part in Software Testing and can get more precise outcomes and spares time. This paper talks about the Artificial Intelligence key factor that can be utilized in Software Testing. It likewise opens a window on how the future will look like regarding Artificial Intelligence and the Software Testing. The outcomes show that AI can accomplish better outcomes in Software Testing and AI-driven testing will lead the new period of the Quality Assurance (QA) work soon. AI Software Testing will take less time to showcase and will expand the productivity of the association to deliver more modern programming and will make more brilliant mechanized testing.

Keywords — Artificial Intelligence, Software Testing, Test Automation.

Introduction

AI began assuming numerous functions in the applications around us and soon it will be a fundamental aspect of our social orders and our life. The oxford meaning of AI is: "The hypothesis and improvement of PC frameworks ready to perform undertakings ordinarily requiring human knowledge, for example, visual observation, speech reorganization, decision-making, and interpretation between dialects" [1]. The most important key of AI are: ML, deep learning, natural language processing (NLP), master framework and others. Artificial intelligence covers numerous regions like: data investigation, prediction, decision making, intelligent systems and many others.

Lately, AI, deep learning, NLP and the related algorithm and methods have accomplished extraordinary achievements in numerous fields and explicitly in robots industry. Machines began understanding verbal orders, assessing data, perceiving pictures, driving vehicles, examining information and messing around in a way that is better than we do.

Because of the expanding development of AI's calculations and procedures, and because of the outstanding advancement in the innovation and PC equipment that speed up and gave a large space memory, AI began acting a significant function in numerous areas and one of them is software testing. Software testing is a basic cycle that guarantees business prerequisite satisfaction and lead to consumer loyalty during the product improvement lifecycle. AI, profound learning and nature language preparing calculations and strategies are the vital participants in software testing. In the following area we will give a diagram of AI and programming testing.

Basic Introduction to Machine learning

As per Arthur Samuel, ML algorithms empower the PCs to gain from information, and even develop themselves, without being expressly customized.

ML is a class of a calculation that permits programming applications to turn out to be more precise in foreseeing results without being expressly modified. The essential reason of AI is to construct algorithm that can get input data and utilize measurable investigation to foresee a yield while updating outputs as new data becomes available.

ML is the study of getting PCs to learn and act like people do. It utilizes calculations and numerical models to continuously improve their exhibition on a particular assignment. ML has the accompanying three primary classifications and sub classifications that are appeared in Figure 1.1:

- Supervised learning: is to utilize a calculation to take in the planning capacity from the contribution to the yield. Characterization and relapse are models on the subcategories of administered learning.
- Unsupervised learning: is attempting to discover shrouded structure in unlabeled information. Bunching and dimensionality decrease are the sub classes for unaided learning.
- Reinforcement learning: It permits programming operators to naturally decide the ideal conduct inside a particular setting, so as to augment its presentation.

Basic Introduction to Software Testing

Software testing is a superiority state of development of software. The main aim of testing is not to productivity only but also support to enhance the quality of software product from small scale to large scale. In fact we test the software until the product is valid and verifiable. As increasing the software complexity, the requirement of test coverage need for generated test case increases gradually [2]. Testing is an activity where the remaining error from all the previous phase must be detected. The main focus of a tester during the testing of software is that they must know about minimizing of large number of test case into manageable test set, and be able to take the calculated risk about what are important to test and what are not. The intent of automated verification is to reduce the worth and time while minimizing test case. In Software Development Life Cycle (SDLC), test process is the most important phase to check the Software System validation. It is mainly completed by running test and inspection of these processes. The whole Test process complete in three processes:

1. Generation of Test Cases.

2. Execution of Test cases.

3. Evaluation of Test cases.

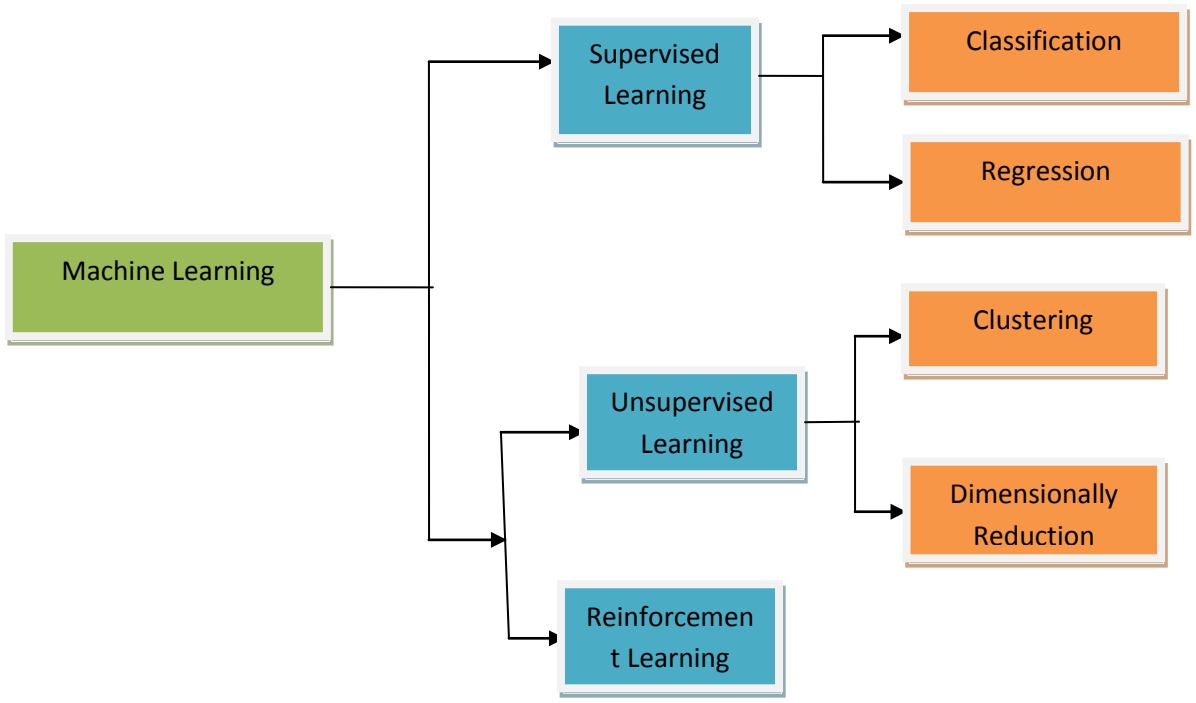

Figure 1.1: Classification of Machine Learning

The main aim of testing should be conveying advice to change and modified if needed, by computing value to integrated test process. The intention of laying out the test case is to rectify the distinctive set of error in least time and effort. Software reliability and quality are mainly depends on the collection of data during testing. Software Testing performs a cycle as well as Software Development. Software Testing Life Cycle (STLC) divides the testing process into a sequence of steps [3].The major parts of STLC involve the tester at the early stage of SDLC. The whole process of STLC shown in Figure 1.2-

The given diagram contains four stages to complete the STLC. These four stages define the specific task.

(i) Test Planning – It defines the test strategy; estimate the number of test cases, their duration and cost. Also identify the areas of risk and completion criteria.

(ii) Test Design – It determines the test objectives and their prioritization, prepare the list of items to be tested, map the items to test cases, create test cases and test data etc.

(iii) Test Execution – In it test cases are accomplished along with authentication and acceptance. The outcome of test cases are cited in the test incident reports, test logs, testing status.

(iv) Test Review – This stage defines the bug associated affairs and gives assessment so that greatest amount of bugs can be rectified in minimum time and less effort.

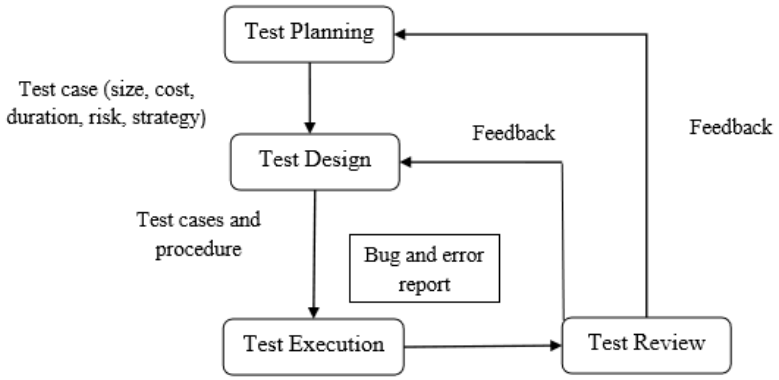

Figure 1.2: Process of STLC

The meaning of testing as per the ANSI/IEEE 1059 standard is the way toward dissecting a product thing to identify the contrasts among existing and required conditions (that is bug/errors/faults) and to assess the highlights of the product thing [4].

Software testing is the training and cycles to check whether the product real outcomes coordinate the normal outcomes according to the necessities and details and guarantee that the product is without deformity. The objectives of the product testing are to distinguish mistakes, blames, holes and missing functionalities according to the prerequisites and details. Programming testing types are as following:

- Manual testing: Testing of the product physically without utilizing any robotized apparatus or contents [4].
- Automated testing: It is otherwise called "Test Automation", is the point at which the analyzer composes contents and uses another product to test the product [4].

Testing is done all through a few levels and stages as appeared in Figure 1.3, coming up next are the primary levels:

Development Testing: it comprises of the accompanying kinds:

- Unit Testing: Testing fundamental units, for example, strategy or class and focusing on usefulness.
- Component Testing: Integrating software units and testing them, focusing on testing the components interface.
- System Testing: Integrating segments from various groups and reusable code and outsider code at that point testing the entire framework.

Release Testing : it comprises of the accompanying kinds:

- Requirements Testing: Inventing experiment from every necessities.
- Scenario Testing: Inventing scenario of the system and using and testing this scenario.
- Performance Testing: is intended to watch that the framework can deal with its planned burden.

User Testing : it comprises of the accompanying sorts:

- Alpha Testing: is done by development environment.
- Beta Testing: is done in the user environment.
- Acceptance Testing: is performed by customer.

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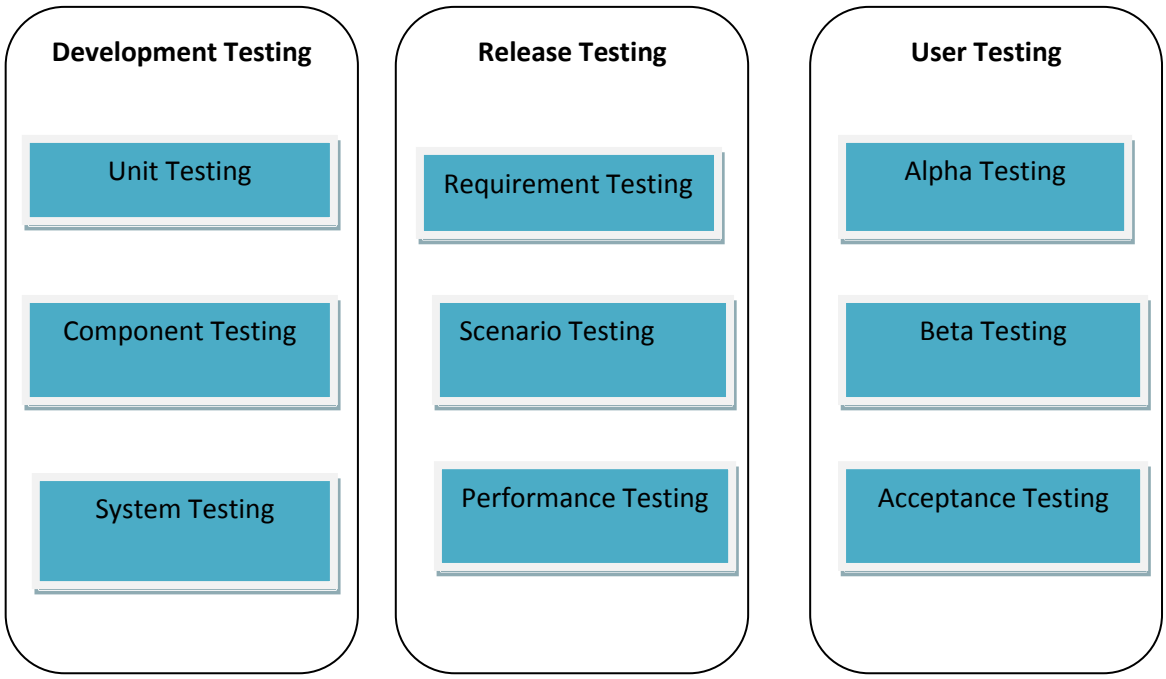

Figure 1.3: Levels of Testing

The central point of contention is the way quality confirmation can encourage the Software Testing and produce more experiments that are exact and simple to execute with serious time span while as yet meeting the business prerequisites and the customer's desire. AI and its key factors like Machine learning and NLP can assume a significant function in this and can encourage the product testing in the vast majority of the regions.

Automate testing will take less time and improve the accuracy. Auto generation of the test cases and execute them consequently is turning into a significant subject to the product advancement industry. One of the key motivations to automate testing is to ensure that your testing is fruitful and you get the most extreme return on investment (ROI). By utilizing AI there, associations can upgrade the testing quality and create smart and more exact experiments for frameworks and improve the testing inclusion by utilizing AI, profound learning and NLP algorithm and techniques.

Critical Literature Review

Some critical review of AI and Software testing is represented in Table 2.1 beneath. This review basically highlights the algorithm and techniques used in this selected paper.

Reference_No.	AI Algorithm / Techniques Used	Software Testing
5	C4.5 (Decision Tree Algorithms)	Refine Black-Box test specification and improve the category-partition specification
6	Huber Regression, Support Vector Regression (SVR) and multi-layer perceptron	Predicting the coverage in automated testing
7,8	Hybrid Genetic Algorithms (HGA)	Automatically test GUI, including test sequence optimization and test case optimization
9	K-Means Clustering	Test case classification to enhance regression testing 9
10	General Classification Methods (SVM and others)	Software Fault Prediction
11	Support Vector Machines (SVM)	Identifying infeasible GUI test cases
12	Random trees, Naïve bayes, Ordinal classifier and others	Change Proneness

Artificial Intelligence & Software Testing

As found in the writing survey, AI has assumed a significant part in software testing. AI and NLP spread many testing territories as featured in Table 2.1. Specialists have utilized and joined numerous algorithms and methods to target explicit positions in programming testing and accomplished serious outcomes. Quality confirmation is an excursion that QA group and test engineers drew in with completely. There are numerous difficulties all through this excursion uniquely when there is a manual testing that the QA needs to deal with all through the testing life cycle.

Manual testing requires devoted HR which is exorbitant and tedious and less dependable contrasting and the brilliant mechanized testing. Furthermore there are numerous progressions in both manual and customary computerized software testing including:

getting necessities, testing inclusion, testing arranging and time to execute, refreshing the test contents and cases, relapse test inclusion and numerous others.

Quality Assurance experts and test engineers began considering the AI programming testing is a key factor for testing their product. By performing quality control checks utilizing AI models, calculations and methods, associations open another time in programming testing and began delivering a serious applications that surpass desires.

In the event that we investigate the product testing, we find that all connected software parts are information. The source code is information; sites, data sets, data sources and yield are simply information. AI can deal with enormous information effectively and viably by applying its calculations and strategies and can reaction to information successfully contrasting with human. Computer based intelligence can apply techniques on information for programming testing purposes like groupings, relapse, bunching and dimensionality decrease. Man-made intelligence can joins various calculations all together to improve and promising outcomes from examination and forecasts.

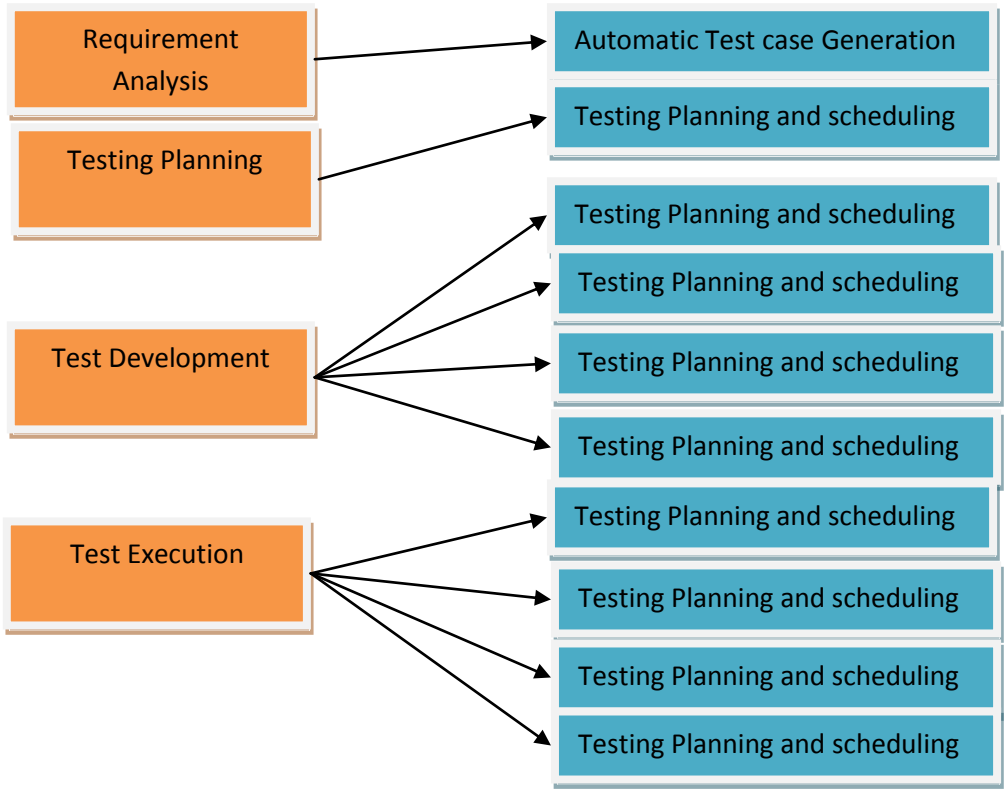

Figure 3.1: AI Software Testing Coverage

As should be obvious from Figure 3.1, AI as of now covers numerous regions in the product testing from necessities investigation stage till test execution and terminations. This is the thing that right now in the market for the AI commitment in the product testing.

The AI patterns in progress in the product testing industry are exceptionally encouraging and AI will drive this industry with an extraordinary outcomes going ahead. This is the future and organizations previously began putting resources into this industry. Coming up next are the key anticipated commitments sooner rather than later (4 to 8 years) for the AI in programming testing territory, this depended on our exploration examination and expectation study:

- The AI programming testing will turn into a free industry and will assume a significant part in IT. We expect that AI programming testing will supplant the QA and analyzers engineers. QA group and analyzers architects will assume another part in tuning and checking the AI results.
- AI will drive the product testing and will cover all testing stages from test arrangements to arranging, execution and revealing without human intercession and mistakes.
- AI programming testing industry will deliver more precise outcomes and will abbreviate the product advancement lifecycle than customary testing procedures. When building programming arrangements, fulfilling time constraints will be challenge extraordinarily that we probably won't have the option to stay aware of the staggering programming request, so AI will overcome this issue and will encourage this test by abbreviate the necessary testing time.
- AI will inevitably have committed apparatuses to viably test the new innovation like Cloud Computing, IoT, Big Data and other future advancements. Consolidating the new advancements will carry development to the AI programming testing since AI will assume the integrator part in creating the necessary testing information for a particular item.

- We expect that there will be specific programming and equipment arrangements that can run AI profound learning and other AI calculations and strategies to accomplish more precise testing brings about a serious time periods.
- AI will cover the greater part of the product items testing in all zones including: application advancement, site improvement, information base applications, portable applications, games industry, ongoing basic applications, inserted arrangements and others.
- The new AI programming testing instruments will be imaginative, lithe and savvy. They will give more prominent outcomes to the recipients and end clients.
- By utilizing AI calculations and procedures, associations and organizations will improve the client experience, upgrading their items offering and increment the nature of the offered types of assistance and will carry programming soundness to their items.
- The AI prescient investigation will assume a significant function in finding all conceivable experiments and will make the product items more vigorous, dependable and will surpass client desires.
- AI, profound learning, NLP and other AI territories are considered as a main edge of the vast majority of the advances around us. As we featured and examined, carrying AI to programming testing will deliver the incredible intensity of the keen programming testing mechanization and will move and push the product advancement and testing industry in another time zeroing in on development and deftness.

Conclusion

Artificial intelligence previously demonstrated that it can accomplish better outcomes in programming testing. Man-made intelligence driven testing will lead the new period of the QA work soon. It will oversee and control the greater part of the testing zones and will increase the value of the testing result and will create more exact outcomes in a serious time period.

It is normal that AI will assume a key function in programming testing in the end. The new job and extension for the analyzers will zero in on truing the AI models, calculations strategies to get more brilliant. Simulated intelligence Testing calculations will likewise associate with new advances later on (like Cloud innovation, IoT, Big Data and others) and will separate the accepted procedures strategies that suit the customer application to get more precise and shrewd experiments and will produce immaculate outcomes. Profound learning alongside the NLP and different procedures will assume a significant part in the product testing and will have some specific instruments (Software and Hardware) to use in all product testing lifecycle.

Future Work

Future work can investigate different regions in the AI and programming testing. Profound learning is one promising territory in the AI that can give preferable outcomes over conventional AI calculations. This zone can be examined to perceive how profound learning can assume a part in programming testing.

Another region is to cover more examinations to explore other testing territories that haven't been shrouded in this exploration.

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IMPLEMENTATION OF SECURITY ISSUES IN CLOUD COMPUTING AND RESEARCH CHALLENGES IN CLOUD COMPUTING

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Abstract

Cloud computing is information that grants access to the services anywhere, anytime and paying for the services that are being used. This permits cloud users to apply the data and purpose, if needed somewhere but must have admittance to the internet. The main task to be handled is the examines arriving at the server for service. It is compulsory to switch all services by doing suitable scheduling mechanism so as to offer they service in well maintained manner. Better Quality of Service has to be provided to all clients. This strategy is used to schedule multiple users' services which start at any time and the QoS requirements are major consideration. Two scheduling algorithms i.e. First Come First Serve and Round Robin scheduling algorithms have been executed. Experiments have been done to timetable services of fixed length as well as variable length. In both the cases this has been proved that First Come First Serve shows less average waiting time as compared to Round Robin Scheduling. The main important phases of character recognition include pre-processing, segmentation, feature extraction and classification. Diverse feature extraction techniques and organization techniques have been surveyed in this paper.

Keywords: Cloud computing, Experiments, mechanism, Round Robin scheduling

Introduction: Cloud computing is utility based computing as it presents right of entry to the services on exact and then one has to pay for the service that is being used. The main concept of cloud to be introduced was to circumvent overutilization and underutilization of resources**.** It will allow cloud users to use the data and application, if needed anywhere but must have access to the internet.

Maintenance of quality of service is the main issue

as all cloud customers are to be satisfied and one has

Quality of service is principally concerned with the scheduling technique that has to be used on the cloud so that the services approaching the cloud should be satisfied with the least waiting time and providing them better response time.

Cloud computing is recognized as a alternating to traditional in order information due to its intrinsic resource-sharing and low-maintenance characteristics. In the cloud computing the cloud service suppliers supply miscellaneous types of services such as Infrastructure, data storage etc. There have been many attempts to recognize cloud computing and illustrate the security issues involved with such technologies. It also poses an important risk to the confidentiality of those stored files. Specifically, the cloud servers supervised by cloud suppliers are not fully trusted by users while the data files stored in the cloud might be sensitive and confidential, such as business plans.

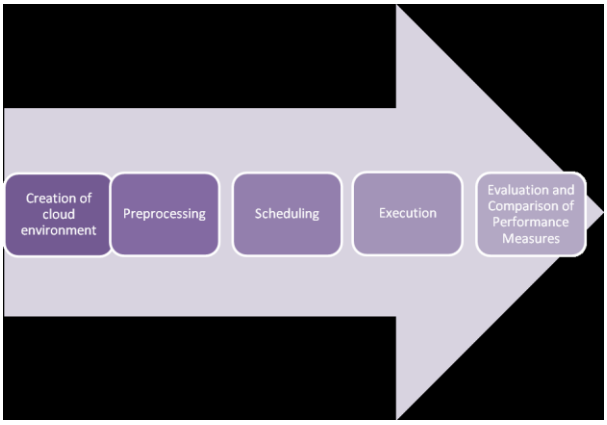
Characteristics of cloud computing

1. On demand self-service – computer services like the e-mails, applications, or server examine can be provided lacking requiring human communication with each service provider. 2. Broad system access – Cloud Capabilities are obtainable over the system and accessed through typical mechanisms that promote use by heterogeneous thin or thick client platforms. 3. Resource pooling – In cloud computing the provider's in the computing resources where pooled together to serve multiple customers using multiple-tenant model, with unusual physical and virtual resources which are dynamically assigned and reassigned according to consumers demand. The resources encompass among others storage, processing, memory, virtual machines and the email services. Pooling altogether of the resource builds economies of measure. 4. Rapid elasticity – the Cloud services can be expeditiously and flexible provisioned, in some cases automatically, to immediately scale out and rapidly released to immediately scale in. To the client, the capabilities existing for formularization often appear to be unbounded and can be purchased in any amount at any time. 5. Measured service – the Cloud computing resource usage can be controlled, measure and reported by providing transparency for both the provider and the consumer of the utilized service. Cloud computing services can use a metering capability which enables to manage and optimize the resource. This may implies that just like electricity or municipality water IT services are charged as pay per use. The more you utilize the higher will be the bill. 6. Multi Tenacity - it is the 6^{th} characteristics of cloud computing advocated by the Cloud Security intimacy.

Conception of cloud computing: cloud computing knowledge is one of the majority concerned new computer technologies, often referred to as "cloud"[5]. It is a interactions of on-demand freedom resources and allege by using. It makes the objective of computing services clearer, at the same time promoting high efficiency and low cost of such services. Its openness has attracted more developers and researchers, and recognized by the market. Firstly, we recognize cloud forensics as a cross-discipline among cloud computing and digital forensics. Cloud computing has five essential characteristics, on-demand self-service, broad system entrance, supply pooling, rapid elasticity and measured service.

Proposed Procedure

The major purpose of improving Quality of examine is that clients arriving at cloud should be provided with least waiting time. So cloud surroundings have been created and scheduling of clients according to both approaches *i.e.* FCFS and Round Robin scheduling algorithm has been done. Time full during execution has been taken into consideration and assessment of both scheduling criterion has to be done. The approach we are following to pursue that process is shown below:



Creation of Cloud Environment: The Cloud surroundings have been created by creating servers and clients. Server supplies the check of sorting. Different measures are taken into consideration when server is being called. Servers are created to serve the need of clients so as soon as demand from client side approaches at the server, it creates performing sorting. Time taken by server to fulfill the need of clients is recorded.

Preprocessing Method: When there arises want of sorting, pre-processor is the first section to be called in. At the time of pre-processing values are created by clients that are to be sorted. Tasks are created from client side which need sorting. After the pre-processing there comes the need of scheduling that which type of scheduling algorithm is implemented on it. Every time when one of the client is being served then there comes the turn of pre-processor to check if added services are there and if yes, then array of that much values is created which are to be sorted.

Scheduling Method: In this there are two scheduling algorithm have been executed to assess different measuring parameters. First Come First Serve and Round Robin scheduling algorithm are used in our computing environment to measure dissimilarity in the parameters. FCFS algorithm provides the service to the clients in the position in which they arrive. Round Robin algorithm provides time quantum to each clients which arrive at the servers.

Execution Task: Scheduling algorithm being chosen is implemented so as to estimate its constraints that how they are executed by two dissimilar algorithms. Based on the algorithm being used its execution is done. When there arises the need of a diverse client after execution of one, then again there is turn of pre-processor to start its working. This process repeats until all of them have been served.

Evaluation and Comparison of Performance Measures: Waiting time, Arrival time, Burst time of every procedure is evaluated on the basis of their arrival time in cloud environment.

Cloud computing is a way to supplement the capability or add capabilities dynamically devoid of investing in new infrastructure, training new personnel, or licensing new software. It extends in series technology's existing capabilities. A new model targeting at improving features of an existing model have to not risk or threaten other significant features of the current model.

Parameters For Analysis

There are definite inherent requirements that have to be met by any Security protocol developed for the cloud computing. We present these parameters below:

Access control: The requirement of admittance manages is twofold. First, group members are clever to use the cloud resource for data operations. Second, unauthorized users cannot right to use the cloud resource at any time, and revoked users will be incapable of using the cloud again once they are revoked.

Data confidentiality: Data confidentiality requires that unauthorized users including the cloud are unable of learning the content of the stored data. A significant and challenging subject for data confidentiality is to preserve its availability for dynamic groups. Specifically, new users should decrypt the data stored in the cloud before their participation, and revoked users are unable to decrypt the data moved into the cloud after the revocation.

Anonymity and traceability: Anonymity guarantees that group members can admittance the cloud without revealing the real identity. Although anonymity symbolizes an effective defense for user identity, it also poses a potential inside attack risk to the system. For example, an inside attacker may store and share a mendacious information to derive substantial benefit. Thus, to tackle the inside attack, the group manager should have the capacity to reveal the real identities of data owners.

Efficiency: Any group associate can accrue and split data files with others in the group by the cloud. User revocation can be achieved without involving the remaining users. That is, the remaining users do not need to notify their private keys or re-encryption operations. New granted users can learn all the satisfied data files stored before his participation without contacting with the data owner.

Analysis

In this section we will analyses the dissimilar protocols that have been developed for Security touching the parameters discussed in the previous section.

Access Control: To access the cloud, a user involves computing a group signature for his/her authentication. The employed cluster signature scheme can be regarded as a variant of the short group signature, which inherits the inherent enforceability property, anonymous authentication, and tracking capability.

For achieving the access control, we use the notion of Dynamic Broadcast Encryption. An essential property very much desired in broadcast encryption is that the group should be dynamic in the sense that the group manager can invite new members to join or permanently revoke undesired members in a very efficient way. Although long term revocation necessarily implies a modification of the keys, there is no such theoretical requirement when a new member joins the group. In this respect, we say that a broadcast system is dynamic when

The arrangement setup as well as the cipher text size is completely self-determining from the expected number of users or an upper bound thereof,

A new user can link anytime without implying a modification of preexisting user decryption keys

A dynamic broadcast encryption organization involves two authorities: a group executive and a broadcaster. The group manager grants new members access to the group by providing to each new member a public label labi and a decryption key dki. The generation of (labi, dki) is performed using a secret manager key mk.

Advantages of Cloud Computing

1. **Accommodation -** You can influence your information anywhere you can also meet to the Internet.

2. **Security -** Most companies use industrial level protection software which makes it harder for hackers to get at your in sequence.

3. **Backups -** You have a backup of your material in case your local computer crashes.

4. **Collaboration -** With your permission, others can approach, view, and modify your documents.

5. **Environmentally friendly -** It takes fewer resources to cloud, thus excepting energy. Some dealing takes it a step further and incorporate cloud computing into their telecommuting strategies.

6. **Easy Approach to data -** Once you register yourself in the cloud, you can accessible the data's and information's.

7. **Fast Deployment -** it gives you the advantage of fast deployment. Once you operate for this method of functioning, your whole channel can be fully dynamic in a minutes the amount of time taken here

Will depend on the exact kind of technology that you need for your business.

8. **Availability**- we can Access the information anytime and where ever we want. The Internet cloud infrastructure maximizes enterprise productivity and

Efficiency by ensuring your application is always acquirable. This permits for simple complicity and communion among users in multiple locations.

9. **Flexibility for development** - The cloud is easily scalable so companies can add or subtract resources based on their needs. As companies develop, their system will develop with them.

10**. Efficient improvement** - Cloud computing delivers faster and more accurate retrievals of demand and data. With certain time, it is the most achieved development plan.

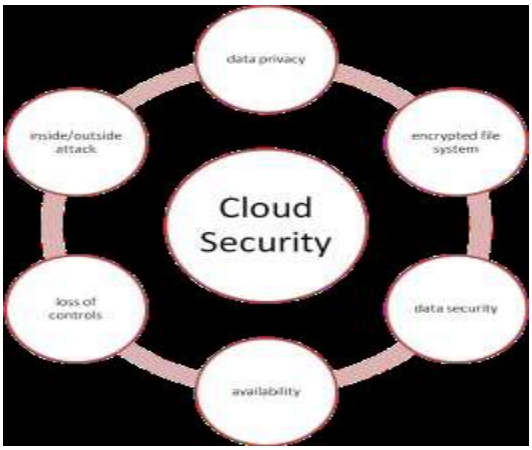
Issues and Challenges

Cloud computing has been widely accepted by the industry, but the cloud computing research is quite at the early stage. Numerous irreducible issues are not been fully addressed, while new challenges keep emerging from trade applications. Here we will now summarize several of the challenging research issues in cloud computing.

In the cloud protection is an evolutionary sub division of domain of workstation security network and, more considerably, information security. It conclude to a huge set of, techniques, and controls deployed to secure data, applications, and the associative infrastructure of cloud computing

Security and privacy

It is understandable that the protection issue play the significant role in hindering Cloud computing acceptance. There are numerous security threats which comes from inside or outside of cloud providers/consumers atmosphere which has classified into the outsider threats, and the insider adverse attacks, data loss, issues concerned to multi-tenancy, loss of control, service break-down. In a cloud environment the security features has to take possession to defend cloud illusory infrastructure. presentation and Availability, outside attacks, inimical Insiders, Loss of Control, Service Disintegration and Multi-tenancy are the attacks that have to be mainly addressed. The adventitious venture is possessed by a variety of persons and institutions.



Security issues like the phishing, data loss pose severe threats to organization's data and software, the joint computing and the multi-tenancy sculpt resources in cloud computing has deputize new security challenges that require novel techniques to deal with. For ex, hackers can use Cloud to manage bonnet as Cloud frequently provides more authentic communications services at a relatively cheaper price for them to create an attack. Cloud clients' data stores in data centers that cloud providers diffuse all over the globe within hundreds of servers that correspond through the Internet have several well-known potential risks within them. since cloud services are using the Internet as their communication infrastructure, cloud computing involves numerous kinds of security risks.

Resource availability and reliability

Reliability indicates how often resources are existing without dislocate and how often they fail. Reliability stays a confront for cloud overhaul providers everywhere Cloud providers still lack round-the-clock service. It is significant to observe the service being provided using internal or third-function device. It is necessary to have plans to handle manipulation, presentation, and business dependency of these services. The significant chapter that form solid difficulty for the reliability of cloud computing is down time. One way to achieve reliability is dispensable resource utilization. Availability can be unstated as the possibility of obtaining the resources whenever they are needed with the consideration to the time it takes for these resources to be supplied. Regardless of assigning planning having property for high reliability and accessibility, the services in the cloud computing can knowledge denial of favor rush, stuff outages and natural accident.

Interoperability and portability

Interoperability is the aptitude to use the similar tools or submission there on various cloud service providers programs. A possible solution to the resources availability trouble is the use of multiple clouds to ensure the required quantity of resources. Portability and interoperability both are relate to the facility to build networks from re-usable components. Portability and interoperability of communications components are achieved by hardware and virtualization architectures. The major types of cloud computing portability to are application portability, platform portability and data portability. These are the portability in that arrange of submission platform and data factors. Cloud users must have the flexibility of migrating in and out and switching to clouds whenever they fancy without no vendor lock-in time. The cause for the current bad portability and limited interoperability between clouds is the lack of standardized API's.

Performance

Presentation is the second major issue in cloud environment. The cloud provides enhanced presentation when a user moves to cloud computing messages. Performance is commonly on reason by capabilities of applications working on the cloud system. Imperfect presentation and non-availability of in order to an end user means the same as the services required are not in working order. Highlighted some factors in control of bad performance in cloud computing atmosphere. These include: limited bandwidth, disk space, memory CPU cycles, web connection and the majority forcefully delay which reduces the end to-end reaction time. Many times users prefer to use services from more than one cloud where some applications are located on private clouds while some other facts or implementation being on public or system cloud.

Virtualization

It is a method, which allows sharing single physical example of an application or resource among multiple organizations or tenants (customers). It does so by assigning a logical name to a physical Resource and providing a pointer to that physical resource when demand. In computing, virtualization denotes to create a virtual version of a device or source, like the storage devices, server system or even an operating system where the framework holes the resource into one or more presentation environments. Operating system virtualization is the use of software to allow a piece of hardware to run multiple operating system images at the same time. Virtualization software was adopted faster than anyone imagined, including the experts. In the field of IT there were three areas where the virtualization is making, system virtualization, storage virtualization, head roads and server virtualization. It can be part of an overall trend in enterprise IT that includes autonomic enumerating, a circumstances in which the IT conditions will be able to manage itself based on perceived profession, and benefit computing, in which computer processing power is seen as a efficacy that clients can pay for only as needed. Virtualization makes communications organization more compounds, and huge automation is required in organization to support the key aspects such as mechanization, on-demand and flexibility necessity.

Conclusion

Cloud computing is a representation, where dissimilar tests and issues are there like the solitude, security, virtualization, bandwidth cost, resource availability, performance, portability etc. Cloud computing be able to be seen as being a new phenomenon which can be set to revolutionize just how we search online, there is certainly much for being careful of. There are different technologies emerging at a express rate, every with technological advancements and with the potential of creating human's lives easier. So, one should require to identify about the security risks and challenges that are posed in utilizing.cloud computing technologies. Cloud computing is not any exception. Cloud examine providers must notify their potential customers for the level of security that they can provide on their cloud.

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EFFECT OF INDIVIDUAL SPORT VERSUS TEAM SPORT ON QUALITY OF LIFE, FUNCTIONAL INDEPENDENCE AND PSYCHOLOGICAL WELL-BEING IN PARAPLEGICS: A COMPARATIVE STUDY

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Abstract

Background and aim: Spinal cord injury along with the motor and sensory impairments results in psychological and functional problems. Recent studies have shown that participation in wheelchair sports improves functional psychological well-being and life satisfaction. The aim of this study was to assess and compare the effects of individual versus team sport on quality of life, functional independence and psychological well-being.

Methods: 40 paraplegics (age between 17-47 years) were participated in individual sport (n=20) and team sport (n=20) on alternate days for 6 weeks (21 sessions). Quality of life, functional independence and psychological well being were measured with RAND 36, SCIM and PHQ-9 respectively, pre intervention and post intervention. A comparison between the scores was done after intervention.

Results: In quality of life (QOL) individual sport induced significant improvements in three parameters, physical functioning, bodily pain and general health and in team sport significant improvement was seen in all eight domains ($p<0.05$) of RAND 36. Significant improvement was there in team sport in all three parameters of SCIM and highly significant improvement was noticed in both the sports (basketball and table-tennis) in the scores PHQ-9.

Conclusion: Team sport (basketball) is highly effective than individual sport (table-tennis) for improving quality of life, functional independence and psychological well-being in paraplegics.

Keywords: Paraplegia; team sport; individual sport; Quality of life; functional independence; psychological well-being.

Introduction - Life expectancy for individuals after spinal cord injury (SCI) is approaching that of the able- bodied population, the ultimate goal of rehabilitation for this group has shifted from extension of life expectancy to enhancement of independence and quality of life [(8).] The importance of regular physical activity on the course and success of rehabilitation after SCI has been increasingly recognized, especially with respect to the physical benefits of exercise for promoting functional independence and psychological well-being The sportive practice in the hospitalization condition, in turn, complements the medical and physiotherapeutic care, reduces the hospitalization time, increases the independence degree and the initiative capacity, and contributes for the education and the adoption of behavioral procedures in order to assure the continuity of the process aimed at the physical and mental health and social welfare [(16)]

Sports can play an important role in people with disabilities. They not only are benefited physically by participating in sport activities, but also psychologically and socially. Their quality of life improves and they are more likely to integrate into the community. Although sports also have some disadvantages such as the risk of injuries and concerns unique to the people with disabilities, these should not stop them from participating [(9).] Muraki (2000) and colleagues compared a group of wheelchair basketball players with a group of varsity college players and a control group of college men. The participants who used wheelchairs were found to have significantly better mental health profiles than the two comparison groups.

Nemunaitis et al (2003) compared 19 individuals with SCI on a wheelchair basketball team to 38 individuals with SCI who were not members of a team. They concluded that membership in a wheelchair basketball team was correlated with improved community integration, based on increased Community Integration Questionnaire (CIQ) productivity subscale scores among the wheelchair basketball team members. However, Foreman et al, failed to show any significant difference of psychological measurements between sports participants and non- participants with spinal cord injury. Thus, there has been a notable discrepancy of psychological benefits among previous studies.

Sonja A. McVeigh *et al*., (2009) studied on influence of sport participation on community integration and quality of life. Author reported that the CIQ and QOL scores were higher among sport participants compared to non-sport participants. Elizabeth Campbell (1994) examined (a) the psychological well-being of wheelchair sport participants and wheelchair sport non participants, and (b) the influence of competitive level on the psychological well-being of wheelchair sport participants. Psychological well-being was evaluated by considering mood, trait anxiety, self-esteem, mastery, and individual self-perceptions of health and well-being. Author reported that wheelchair sport participants exhibited an iceberg profile of positive well-being with lower tension, depression, anger, and confusion and higher vigor than the sport nonparticipant group sport participants group

showed significantly greater levels of mastery and more positive perceptions of their health and well-being than the sport nonparticipant group. International athletes had (a) higher levels of vigor than the national and recreational groups; (b) lower levels of anxiety than the regional and recreational groups; (c) higher levels of self-esteem than the national, regional, and recreational groups; (d) higher levels of mastery than the regional and recreational groups; and (e) more positive perceptions of their well-being than the national, regional, and recreational groups.

For many decades, social scientists have been interested in the potential psychological wellbeing benefits that result from group memberships and identification with others [(3)]. Wann (2006) recently developed the Team Identification–Social Psychology Health Model to account for the positive relationships between sport team identification and well-being. According to this framework, team identification leads to well-being benefits because it results in increased social connections with others.

Theorists and practitioners believe that participation in team sports contributes to the development of team behavior in the workplace because they require a similar work ethic, sense of loyalty and responsibility, and development of goal setting skills [(12)]. *Garlick, D G,(*2002) studied on psychosocial effects on women playing a team sport compared with women playing non-team sports and found better stress management and better body image indicating useful effects of team sport as compared with non-team sports for women. Jessica R. Eagleton *et al.,* (2007) studied on extraversion and neuroticism in team sport participants, individual sport participants, and nonparticipants and found that team participants scored higher on extraversion than both individual sport participants and nonparticipants.

Sports participation is an indispensable method of modern rehabilitation. Especially after medical rehabilitation is completed, sports have an invaluable therapeutic value in renewing the spinal cord injury patient's lost powers, helping coordination, and maintaining stamina. Today, individuals with paraplegia participate in all types of sports for competition, enjoyment, and to improve overall fitness. [(22)]

Many sports are available for the wheelchair user, including: archery, basketball, bowling, cycling, football, flying, golf, horse riding, motorcycling, power lifting, quad rugby, road racing, scuba diving, shooting, skiing, softball, swimming, table tennis, tennis, triathlon and water skiing[(15).]

Earlier researches have been conducted to analyze the effects of sports in improving the functional independence, psychological well-being and quality of life in SCI population. To date, no study has been done that determine the effects of team and individual sport on quality of life, functional independence and psychological well-being in paraplegics. The present study would be an addendum to them, as it analysis the effect of individual and team sport in paraplegics. Henceforth, such experimentation may provide a new paradigm to understand the major factors governing functional independence, psychological well-being and QOL in paraplegics.

Methods

Participants and Recruitment

A sample of 40 SCI patients who met the inclusion criteria (Paraplegics with level of injury of T5 – L4 [(10)], age 17-47 years, able to propel the active wheelchair, post one year injury, subject must not participate or involved in any kind of game or sport after injury) through the physical assessment were included in this study. Patients were excluded with any other uncontrolled neurological (except SCI), cardiac, musculoskeletal or psychiatric impairment and with complications such as pressure sores, autonomic dysreflexia, urinary tract infection, orthostatic hypotension and heterotrophic ossification [(11)]. 40 patients were divided in two groups (individual and team sport), each group comprised of 20 subjects. The subjects were explained about the study. An informed consent was taken.

Procedure

Subjects were the divided into two groups (basketball and table-tennis). Before the intervention RAND 36, SCIM and PHQ-9 questionnaire were administered to both the groups. First group participated in individual sport (table tennis). The subjects were told to void before participating in the session. Braces were allowed to wear while playing. Warm up exercises and stretching exercises were done for 10 minutes. Safety straps were used by participants for safety measures. Table-tennis was played between two subjects at a time. Tables-tennis was played for 30 min. Cool down exercises (2 rounds of basketball court and stretching exercises) were done for 10 minutes after the sport.

Second group participated in team sport (basketball). Like in individual sport, subjects were told to void before participating in the session. Braces were allowed to wear while playing. Warm up exercises (2 rounds of basketball court and stretching exercises) were done for 10 minutes. Safety straps were used by participants at leg and abdomen levels. 10 participants were divided into 2 groups (5 participants each team). Wheelchair basketball was played by two teams of five players each. The aim of each team was to score in the opponent's basket and to prevent the other team from scoring. Basketball was played for 30 min. Cool down exercises were done for 10 minutes after the sport.

Frequency of sport participation was playing the sport in alternate days that was more than 3 times per week[(17)] Post- test questionnaire were administered after six weeks. Quality of life, functional independence and psychological behavior were measured by RAND 36, SCIM and PHQ-9 respectively. Total scores were then calculated for each individual to allow comparison between the two groups.

Data analysis: The age of two independent groups (Group A: individual sport, Group B: team sport) were compared by independent Student's t test while sex proportion were compared by Fisher's exact test. The pre and post outcome measures (Quality of life, Functional independence and Physical well being) of two independent groups were compared by repeated measures analysis of variance (ANOVA) using general linear models (GLM) and the significance of mean difference within and between the groups was done by Newman-Keuls post hoc test. A two-tailed (α=2) probability $p<0.05$ was considered statistically significant. All analyses were performed on SPSS (version 15.0).

Results: The proportions of males and females found no significant difference between the two groups (15/5 vs. 18/2, p=0.4075) also the mean age of two groups was not significant (29.35 ± 8.65 vs. 30.95 ± 7.42, p=0.5337).

In RAND 36, group A (table-tennis) showed significant improvements in three parameters- physical functioning, bodily pain and general health of the patient (Table 1 and Fig. 1a). Group B (basketball) showed significant improvement in all the eight parameters of RAND 36 (Table 1 and Fig 1b). There was significant difference in team sport v/s individual sport (Table 1 and Fig. 1c) in four parameters of RAND 36 - Vitality (62.00 ± 18.02 vs. 76.00 ± 20.04, p=0.0140), social functioning (65.63±13.98 vs. 76.88 ± 10.94, p=0.0103), bodily pain (70.50 ± 14.90 vs. 82.50 ± 14.80, p=0.0111), and general health (66.50 ± 16.63 vs. 77.20 ± 11.90, p=0.0249).

In SCIM, group A (Table 2 and Fig. 2a) showed non-significant improvements in all three parameters but Group B (Table 2 and Fig. 2b) showed significant improvement in all three parameters. There was significant difference in team sport v/s individual sport (Table 2 and Fig. 2c) in all parameters of SCIM- self-care (4.65 ± 0.29 vs. 4.89 ± 0.32, p=0.0212), respiration and sphincter management (6.75 ± 1.12 vs. 7.50 ± 0.98, p=0.0336) and mobility (2.21 ± 0.32 vs. 2.52 ± 0.28, p=0.0050)

In PHQ-9, both group A (Table 3 and Fig 3a) and group B (Table 3 and Fig 3b) showed significant difference in improving depression levels of the participants. There was significant difference in team sport v/s individual sport in improving depression levels (Table 3 and Fig 3c). in other words both table-tennis (0.53 ± 0.23 vs. 0.35 ± 0.16, p=0.0010) and basketball (0.52 ± 0.26 vs. 0.18 ± 0.14, p=0.0022) improves depression levels of paraplegics.

Discussion: For the present study, we divided our sample populations into two groups (group A and Group B). 20 patients were taken in each group where the proportions of males and females found no significant difference between the two groups (15/5 vs. 18/2, p=0.4075). also the mean age of two groups was not significant (29.35 ± 8.65 vs. 30.95 ± 7.42, p=0.5337).

In the study, the statistical observation reveals the pre and post sport RAND 36 of two groups. There was improvement in all the parameters of RAND 36 for both the groups. In group A, there was a noteworthy improvement in all the calculated parameters of RAND 36. However there were significant improvements in the response values for physical functioning, bodily pain and general health of the patients. This finding can be correlated with a study done by Hick *et al.,* (2003) who also found that physical activity led to less pain in patients with SCI. It is seen that sports activities give more leisure and patient shows more interest and perceived less pain than any other activities.

Semerjain (2005), concluded that exercise program of twice weekly for 10 weeks (20 sessions) can significantly increase the health and functioning of SCI patients. In this study, all participants (N=12), reported significant improvements in their health and physical activity that they attributed to exercise. In our study, there was improvement in general health and physical functioning after 6 weeks (21 sessions) of participation.

In Group B, there was a significant improvement in all the eight domains of RAND 36 which revealed that team sport is much effective than individual sport in improving overall QOL. There was substantial improvement in team sport, with 4.5 fold change in VT, 3.0 fold change in SF, 2.8 fold change in BP, 2.6 fold change in GH, 2.1 fold change in MH, 1.7 fold change in RE, 1.5 fold change in RP and 1.4 change in PF.

Positive health status and superior community participation were found in highly physical activity group compared with low or inactive groups of people with mobility and limitations (Angela Crawford *et al*, 2008). There was also improvement in all the eight domains of RAND 36, who were involved in high physical activity. In our study, high frequency of sport activity performed by all participants (≥ 3 times/week) and improvement was seen in all eight domains of RAND36 who were involved in team sport.

Table 1: Pre and post QOL parameters summary (Mean ± SD, n=20) of two groups

Parameters	Groups	Pre sport	Post sport	p value	% mean change	Fold change (Group B/Group A)
PF	Group A	20.15 ± 12.67	27.55 ± 13.96	0.0189	36.7%	
	Group B	20.80 ± 12.26	31.75 ± 17.27	0.0005	52.6%	1.4
	p value	0.8854	0.3534	-	-	-
RP	Group A	17.50 ± 16.42	26.25 ± 23.61	0.1074	50.0%	
	Group B	18.75 ± 19.66	32.50 ± 11.75	0.0064	73.3%	1.5
	p value	0.8306	0.2866	-	-	-
RE	Group A	78.33 ± 29.17	91.67 ± 18.33	0.0638	17.0%	
	Group B	73.33 ± 33.51	95.00 ± 16.32	0.0182	29.5%	1.7
	p value	0.5354	0.6796	-	-	-
VT	Group A	58.50 ± 15.65	62.00 ± 18.02	0.7687	6.0%	
	Group B	59.75 ± 16.18	76.00 ± 20.04	0.0073	27.2%	4.5
	p value	0.8226	0.0140	-	-	-
MH	Group A	63.40 ± 13.12	69.40 ± 13.93	0.3228	9.5%	
	Group B	64.05 ± 15.18	77.00 ± 17.74	0.0089	20.2%	2.1
	p value	0.8922	0.1159	-	-	
SF	Group A	59.38 ± 14.55	65.63 ± 13.98	0.1107	10.5%	
	Group B	58.43 ± 14.16	76.88 ± 10.94	0.0003	31.6%	3.0
	p value	0.8244	0.0103	-	-	-
BP	Group A	63.36 ± 14.04	70.50 ± 14.90	0.0033	11.3%	
	Group B	62.55 ± 13.59	82.50 ± 14.80	0.0002	31.9%	2.8
	p value	0.8600	0.0111	-	-	-
GH	Group A	59.50 ± 15.30	66.50 ± 16.63	0.0899	11.8%	
	Group B	59.25 ± 14.80	77.20 ± 11.90	0.0005	30.3%	2.6
	p value	0.9575	0.0249	-	-	-

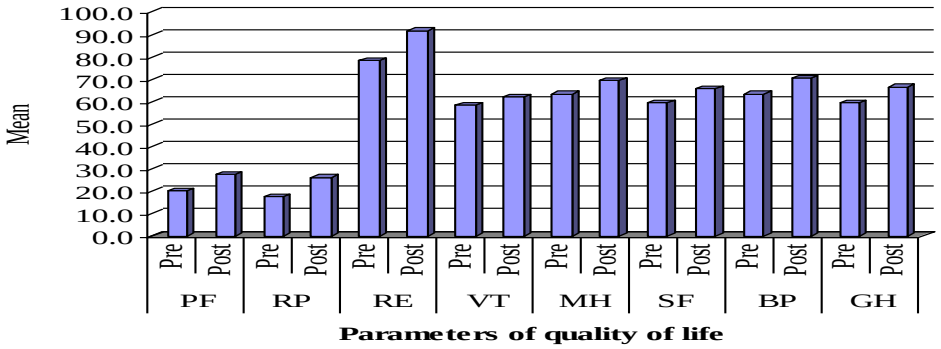

Fig. 1a. Bar graphs shows pre and post mean (± SD) QOL parameter scores of Group A (Individual sport).

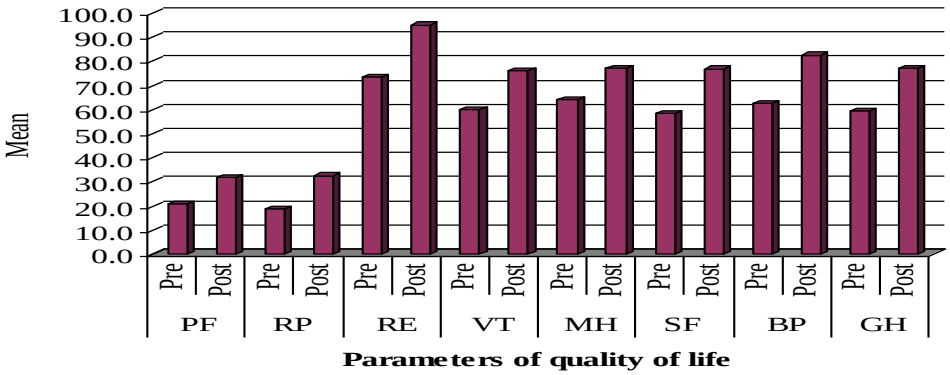

Fig. 1b. Bar graphs shows pre and post mean (± SD) QOL parameter scores of Group B (Team sport).

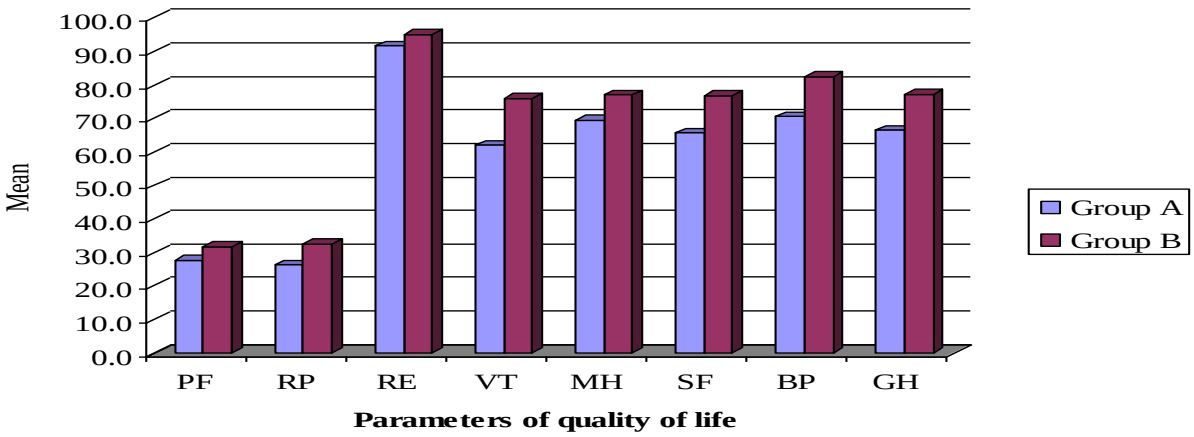

Fig. 1c. Bar graph shows post mean (± SD) QOL parameter scores of Group A (Individual sport) and Group B (Team sport).

Table 2: Pre and post functional independence parameters summary (Mean ± SD, n=20) of two groups.

Parameters	Groups	Pre sport	• Post • sport	p value	% mean change	Fold change (Group B/Group A)
SC	Group A	4.55 ± 0.33	• 4.65 ± 0.29	0.4770	2.2%	
	Group B	4.58 ± 0.34	• 4.89 ± 0.32	0.0022	6.8%	3.1
	p value	0.8046	• 0.0212	-	-	-
RSM	Group A	6.63 ± 1.13	• 6.75 ± 1.12	0.7025	1.9%	
	Group B	6.55 ± 1.14	• 7.50 ± 0.98	0.0278	14.5%	7.7
	p value	0.8236	• 0.0336	-	-	-
M	Group A	2.13 ± 0.31	• 2.21 ± 0.32	0.4190	3.7%	
	Group B	2.00 ± 0.43	• 2.52 ± 0.28	0.0002	26.3%	7.1
	p value	0.2179	• 0.0050	-	-	-

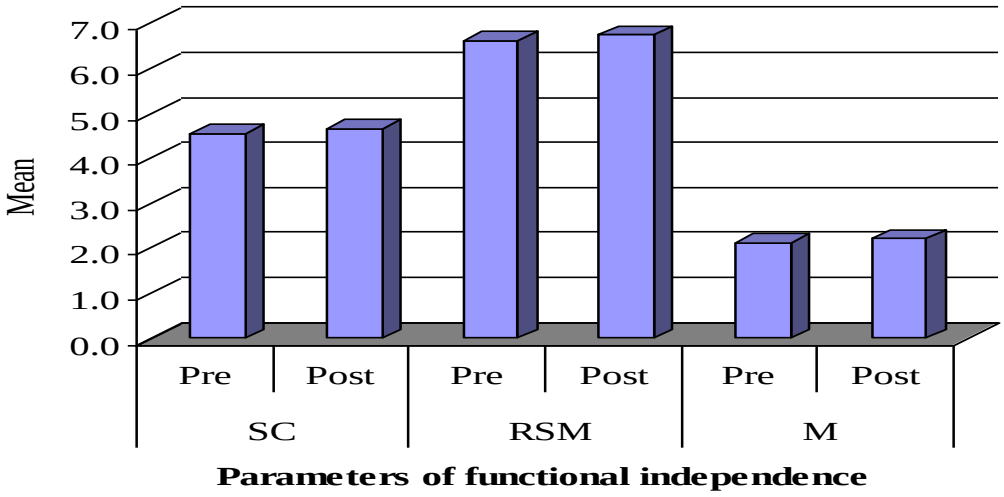

Fig. 2a. Bar graphs shows pre and post mean (± SD) functional independence parameter scores of Group A (Individual sport).

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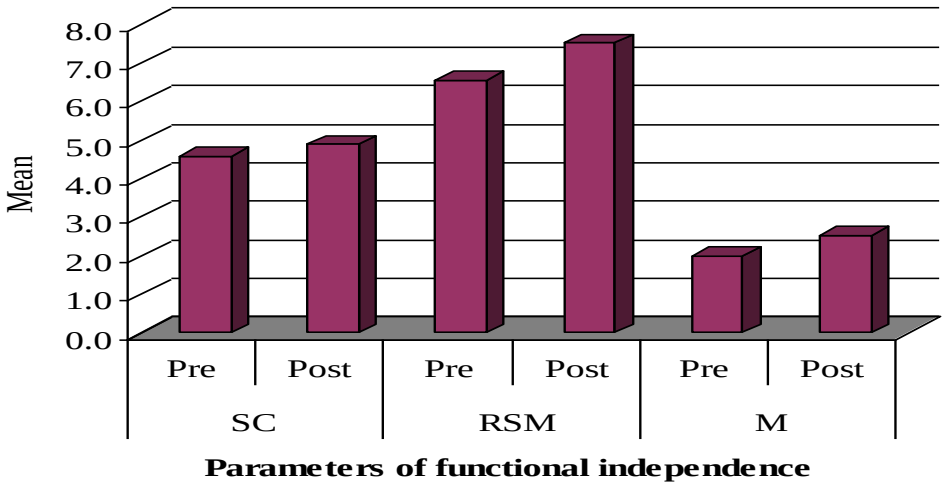

Fig. 2b. Bar graphs shows pre and post mean (± SD) functional independence parameter scores of Group B (Team sport).

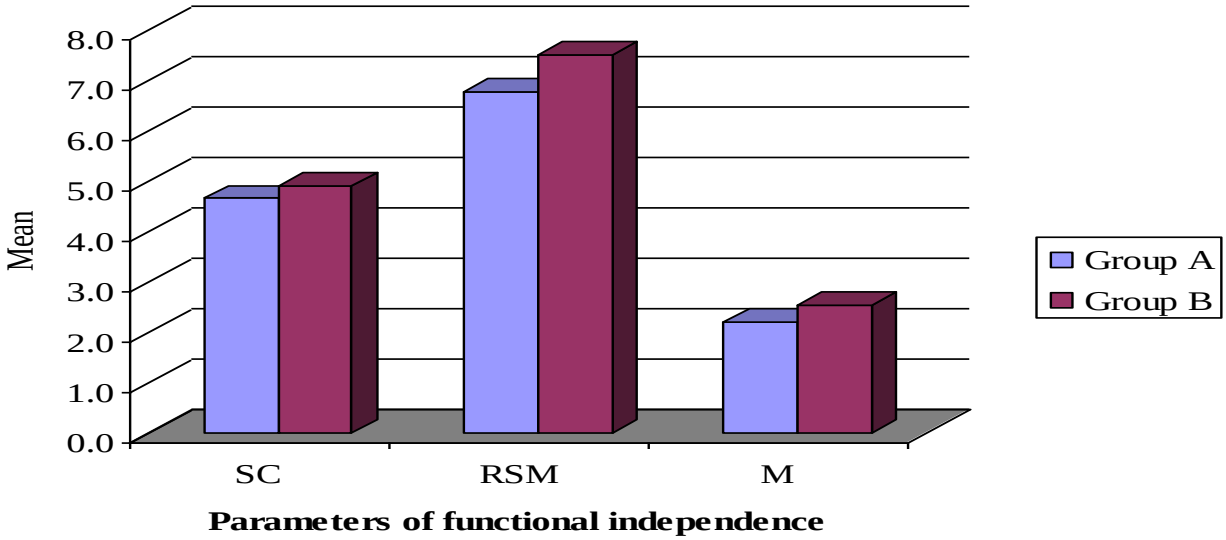

Fig. 2c. Bar graph shows post mean (± SD) functional independence parameter scores of Group A (Individual sport) and Group B (Team sport).

Table 3: Pre and post PHQ-9 scores summary (Mean ± SD, n=20) of two groups

Groups	Pre sport	Post sport	p value	% mean change	Fold change (Group B/Group A)
Group A	0.53 ± 0.23	0.35 ± 0.16	0.0010	34.7%	
Group B	0.52 ± 0.26	0.18 ± 0.14	0.0001	66.4%	1.9
p value	0.9307	0.0103	-	-	-

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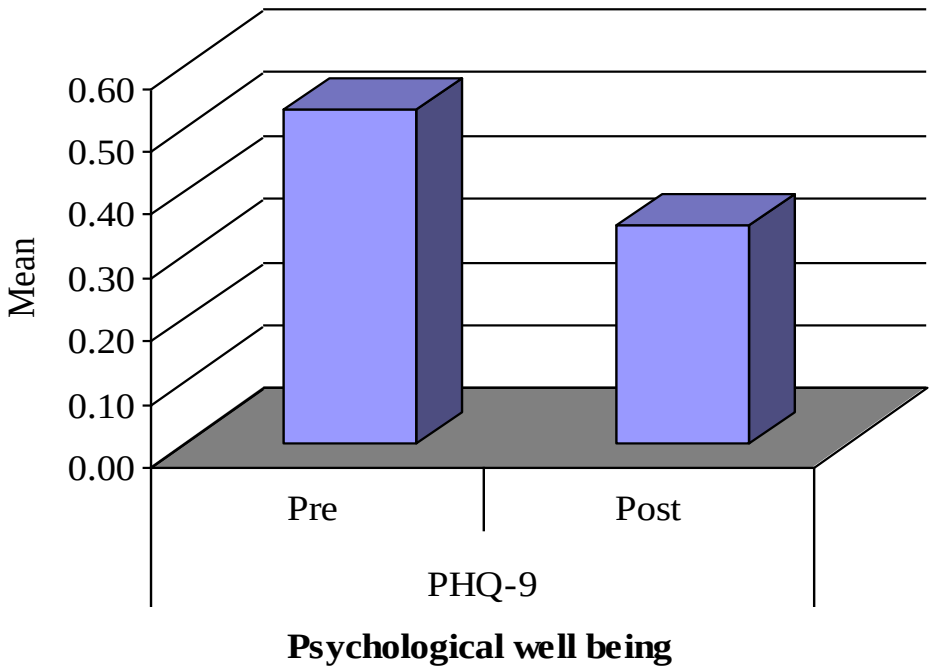

Fig. 3a. Bar graphs shows pre and post mean (± SD) PHQ-9 scores of Group A (Individual sport).

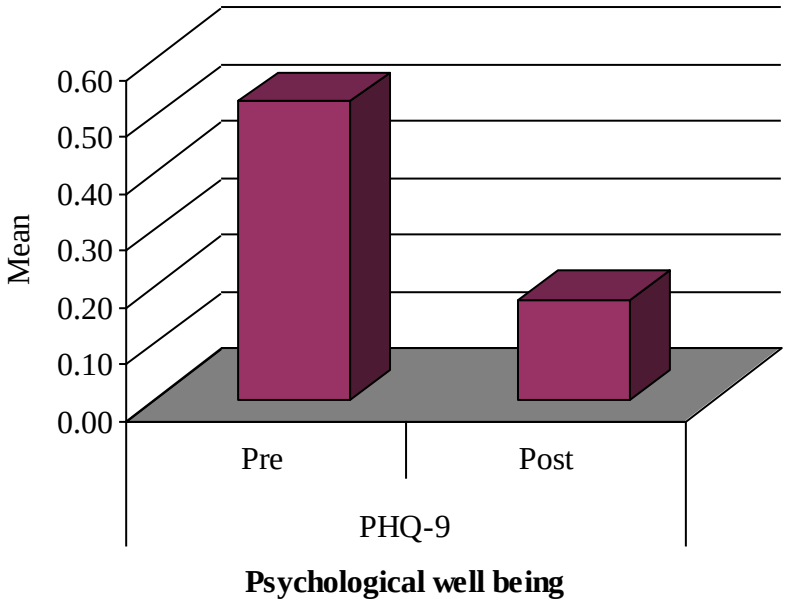

Fig. 3b. Bar graphs shows pre and post mean (± SD) PHQ-9 scores of Group B (Team sport).

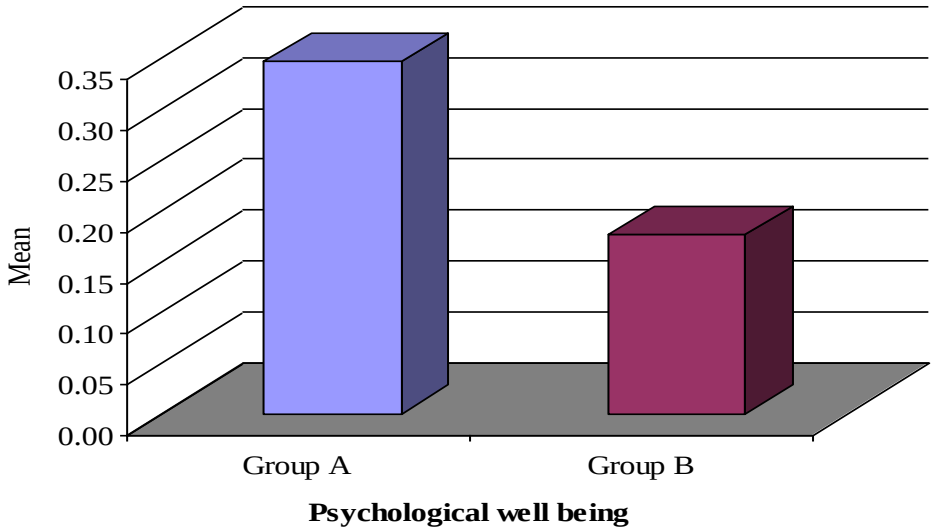

Fig. 1c. Bar graph shows post mean (± SD) PHQ-9 scores of Group A (Individual sport) and Group B (Team sport).

Comparing both the groups, there was significant improvement in team sport than individual sport VT, SF, BP and GH. These results indicate that participants were benefitted more in team sport. Garlick DG (2002) did a study and concluded that there was significant improvement in women playing team sport when compared to non-team sport in terms of displaying better social characteristics, better stress management and body images. These results provide a strong support to our study. So in other words, we can say that both the sports improve RAND 36 but team sport improve it effectively.

In this study, statistical observation revealed pre and post sport functional independence scores of two groups. In Group A, there was some improvement seen in functional independence but the improvement was non-significant. In Group B, there was improvement in all the 3 parameters (SC, RSM and M) and it was highly significant.

Hanson *et al.*, (2001) did a study and measured the effect of sports on level of community integration in spinal cord injury patients. In this study, Forty-eight participants with physical disabilities as well as from SCI support groups. He reported that athletes scored significantly higher on four of five subsections of the CHART (physical independence, mobility, occupation, social integration) which indicates sports can lead to improvement in activities of daily living (ADL).

If we compare both the groups, there was significant improvement ($p<0.05$) in all three parameters- SC (4.65 ± 0.29 vs. 4.89 ± 0.32, $p=0.0212$), RSM (6.75 ± 1.12 vs. 7.50 ± 0.98, $p=0.0336$) and M (2.21 ± 0.32 vs. 2.52 ± 0.28, $p=0.0050$). This may be because the activity in team sport needs more physical activity (basketball) than individual sport (table-tennis).

This study was highly significant in improvement ($p<0.01$ or $p<0.001$) in psychological well-being in both Group A (0.53 ± 0.23 vs. 0.35 ± 0.16, $p=0.0010$) and Group B (0.52 ± 0.26 vs. 0.18 ± 0.14, $p=0.0022$). The results were consistent with previous literature reporting that individual with disability who participates in sports have higher level of psychological well-being. SCI patients who did not participate in sports obtained higher anxiety scores and lower extraversion scores than the sports participants (Gioia *et al*, 2006). This effect probably resides in the increase in endorphins levels of the participants as a result of sports activities and may liven up animate persons by affecting the central nervous system.

Exercise brings about both short and long term psychological enhancement and mental well-being (Dishman, 1985, 1986; Morgan and Goldston, 1987). In present study the results revealed highly significant scores for psychological well-being. Both the groups were effective in improving the scores for depression.

When comparing both the groups, the scores were less in group B than group A (0.35 ± 0.16 vs. 0.18 ± 0.14, $p=0.0103$) showing better and significant psychological benefits in team sport. This may be because groups counter stress by providing members with social sport: personal action and resources that help them cope with minor aspects of every day living, daily hassles, and more significant life crises. Social support is particularly valuable when stress levels increases.

Since findings of this study are in agreement with findings of many other researches,. We strongly recommend that paraplegics should involve in sports to improve their quality of life, functional activity and mental health. Team sports should be prescribed to spinal cord injury patients and they should be incorporated in the rehabilitation. There were some limitations to this study.

The sample size of the participants was small. This study includes two sports but other sports might also influence the quality of life, psychological behavior and functional independence. The sample was limited to a defined area so the results cannot be generalized. Depression levels of the patients were not recorded and braces (TLSO) might affect the performance of players.

Conclusion

This study concluded that sports are highly effective in improving quality of life, functional independence and psychological well-being in paraplegics. Team sports have more benefits than individual sports and these sports improve quality of life, functional independence and psychological well-being in much better way than individual sports.

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APPENDIX – H GLOSSARY

Key Words

SN	-	Serial number
AGE	-	Age in years
SEX	-	1. Male, 2. Female
SCIM	-	Spinal cord independence measure
SC	-	Self-care
RSM	-	Respiratory and sphincter management
7) M	-	Mobility
8) QOL	-	Quality of life
9) PF	-	Physical functioning
10) RP	-	Role limitation due to physical health
11) RT	-	Role limitation due to emotional health
12) VT	-	Vitality (Energy/Fatigue)
13) MH	-	Mental health
14) SF	-	Social functioning
15) BP	-	Bodily pain
16) GH	-	General Health

"ROLE OF PHYSIOTHERAPY FOR COVID – 19 PATIENTS"

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Abstract

Coronavirus disease 2019 / COVID-19 a infectious disease is initially found in Asia (Hubei ,China). Later on it called as Middle East respiratory syndrome corona virus, or MERS - CoV and also known as Severe Acute Respiratory Syndrome (SARS). COVID-19 disease spreads universally. plan creators, researchers, health care management, authority, intensive care unit (ICU) specialists have to reinforcement for increased in volume of significant for COVID-19.

Physiotherapists and other healthcare proffessinals are involved with care and treatment of COVID-19 patients and show an important part in expectant treatment and care , functional mobility, posture. Objective of the study is discover current research authentication for the PT Rx for COVID-19.

Keywords :- Physiotherapy [PT] , Physiotherapy treatment [PT Rx], COVID-19, SARS

Introduction

Corona virus disease is severe acute respiratory syndrome coronavirus-2, (SARSCOV-2),which is appeared in 2019 it is a infectious disease. It is different from previous respiratory virus in a manner that it seems to have approximately 2-10 days human to human transmission before a person is becoming symptomatic[1]. virus is transfer from one person to another by respiratory emission. Respiratory *droplet* transmission can occur when a *person* is *in* close contact ... *infected person* who has respiratory symptoms (e.g. *coughing* or *sneezing*) possible modes of transmission for SARS-CoV-2, including contact, droplet, airborne, fomite, fecal-oral, bloodborne, mother-to-child, and animal-to-human transmission. Possible modes of transmission for SARS-CoV-2, including contact, droplet, airborne, fomite, fecal-oral, bloodborne, mother-to-child, and animal-to-human transmission[2]. COVID-19 involved symptoms like fever, body ache, dry cough, fatigue, chills, headache, sore throat, loss of appetite, and loss of smell and in severe patients may involved more severe symptoms like high fever, severe cough, and shortness of breath, which often indicates pneumonia. COVID-19 individuals may have influenza-like, respiratory tract infection symptoms such as pyrexia-89%, coughing-68%, extreme tiredness-38%, increased mucus-34% and shortness of breath (SOB)-19%[3] This new coronavirus was linked to a wet seafood market, recognized as etiologic agent who is presently named as SARS-CoV-2[4,5]. According to recent studies the corona virus has spreading at the time of writing this total number of corona virus cases 7,307,097, deaths held 111,311 and number recovered are 6,383,441 occurs in the INDIA. The Global Surveillance Interim guidance developed by WHO[6]. (1)Restricting large gatherings has helped in limiting the spread of the virus. As some countries begin to allow gatherings again, it has never been more important to remain vigilant. For organizers of mass gatherings, the key planning recommendations from WHO outline the necessary precautions and safety measures when hosting large crowds of people. (2) the person is required to admit in hospital if person have symptoms like fever, cough, sneez etc. or the person may have visited china in past days. (3) If the person have any respiratory syndrome from past 14 days :

(i) Contacted a positive or possible COVID-19 infected patient or (ii). Served or appeared in medical canter where cases with positive or possible COVID-19 acute respiratory illness individuals were being treated. A individual with acute respiratory illness (ARI) having pyrexia with coughing & SOB along with one of the succeeding: (i) Travel history to China within 14 days preceding to symptoms. (ii) A close bodily contact within 14 days with a COVID-19 positive patient. The novel COVID-19 guidelines document[8] the person should admitted in the isolated ward for the treatment with in the 14 days as symptoms may persist. health-care workers, physical-therapists, especially respiratory therapists, are also playing an important role in managing and caring novel COVID-19 patients. They are involved in conservative care, posture correction, mobilization and while training to wean of from the weaning from invasive mechanical ventilator support[7]. Physiotherapist is a key element of the madical team of active hospital services and intensive care unit. Physiotherapy may be useful in the treatment of respiration, in the treatment of COVID-19, to proven work to prevent or delay critical care. Therefore, our aim is to provide worldwide evidence of physiotherapists involvement in managing COVID-19 infected patients.

Purpose

This document has been prepared to provide information to physiotherapists and acute care

Health care facilities about the potential role of physiotherapy in the management of hospital admitted patients with confirmed and/or suspected COVID-19. COVID-19 is a disease caused by a new coronavirus, primarily impacting the respiratory system. Symptoms of COVID-19 can range from mild illness to pneumonia. Some people will have mild symptoms and recover easily, while others may develop respiratory failure and/or become critically ill and require admission to ICU. Physical therapy might be applicable for COVID-19 patients presenting with profuse airway discharges which patients cannot clear individually. Patients having associated diseases (like neuromuscular disease, respiratory diseases, lung fibrosis etc.) leading to increased secretion or weak cough may also be benefited from physical therapy. Physical therapists working in ICU can help in clearing airways for patients who are ventilated and provide assistance in placing them in proper position[2].

Materials and Methods

This is by looking in the PubMed, Scopus and Pedro databases to neglect the physiotherapist's work in serious reflection units in the management of non-invasive ventilation (NIV) without neglecting the risk of contamination for health experts.

Friendly approach

A global specialist in cardiorespiratory physiotherapy met to quickly prepare clinical recommendations for the management of COVID-19 physiotherapy. The Creator group met for the first time on June 10, 2020 to investigate the imperative for the global alignment of physical therapy for the purpose of acute consideration according to COVID-19. There have been immediately made efforts to create an explicit guide for physical therapists in acute viewing situations. The capacity includes acute and intensive hospital physiotherapy (all), rehabilitation mediation in the intensive care unit (all), organization of physical therapy

Web search and individual records established recently established rules for the management of COVID-19 for primarily sick patients from universal offices (e.g., World Health Organization), social regulations responsible for physiotherapy until June10, 2020. These have been used to provide rules advice on transaction proposals on the main evaluation of the introductory meeting[8].

Integration Criteria

Patient who takes physiotherapy

- Infective exacerbation of COPD with acute deterioration
- Controlled asthma with evidence of infection, retained secretions, increased work of breathing
- Infective exacerbation of bronchiectasis or cystic fibrosis with difficulty managing retained secretions
- Significant consolidation with compromised respiratory status
- Atelectasis causing respiratory insufficiency
- Resolving and productive pneumonia with ineffective cough
- Recent estuation with associated retention of sputum and deteriorating ABGs/SaO2 or significant risk of deterioration of respiratory status

Result

PART 1: Orientation to physiotherapy considerations, detection and management

Orientation to physiotherapy

Follow your hospital's rules and regulations regarding referral to physical therapy for patients who have been admitted to physical therapy in an acute setting[9].

Detection and disposition of reported patients

1. The physiotherapist must perform an in-depth assessment of cases using the documentation framework.
2. Patients should be classified according to "Management of patients in physiotherapy for acute care COVID 19,
3. Patients who are approved for the airway without indication should maintain routine physical therapy care in accordance with standard contamination control precautions[10].
4. Patients who have had respiratory side effects but who have doubts about COVID-19 (low isolation) should be classified as "suspected COVID 19" until two tests are reported that determine that the tests are negative. .
5. Patients who have been approved for other reasons (heart, injury, orthopedics or neurology) and who have indications for the respiratory tract must be classified as "suspected COVID 19" until two test determinations are reported in each case. which are negative.
6. Patients with respiratory diseases (e.g., shortness of breath, hacking, fever, sputum formation) must always be classified as "suspicious COVID 19", in any case two provisions for negative laboratory test reports.

Considerations on the management of physiotherapy

All suspected or confirmed cases must be reported to the director / supervisor through the group leader with regular updates so that they can be recorded very well on a COVID physiotherapy tracker / database accessible to all physiotherapy managers and the head of the Department[11].

Suspicious or positive cases of COVID-19 should be assigned to the "COVID-19 Physiotherapy Group" for review. This will help limit / prevent the spread of contamination by making ideal considerations[12].

Part 2: Physiotherapy management categories

TYPE A: ventilated, calm / incapacitated patients

It contains patients who generally do not feel well, who are calm, unable to act and possibly bowing. Patients with gadgets ECMO (extracorporeal membrane oxygenation): the understanding of ECMO devices depends on their level of sedation and loss of movement control.

The main goals of promoting physical therapy at this stage are

- Limit the confusion of lying on your back.
- Promote oxygen supply.

1. Physical therapy management may include (but not be limited to) distance-from-motion (ROM) activity and a recovery situation. (Trials are limited on the use of a wide range of exercise practices in anticipation of muscle weakness ICU.)

2. Physiotherapists should limit presentation to these patients to avoid unnecessary use of PPE and the risk of cross-contamination.

3. Collaborate with MDT to implement common restoration and insurance methods to limit or stop the presentation.

4. The decision for physiotherapy treatment should be based on the patient's ability to rehabilitate himself and consideration of the risks in relation to the benefits.

5. Regular correspondence with MD T relating to the physiotherapy management.

TYPE B: patients evacuated with negligible ventilation / sedation

Develop an individual treatment plan based on the patient's level of knowledge, participation and hemodynamic status.

2. The main objectives of supporting physiotherapy mediations in this phase are:

3. Prevent tangles from lying down

4. Promote oxygen supply.

5. Improve freedom of supply

Physical therapy management can include drug implementation, ROM activities and dynamic activation[13]. Limiting the aerosol production process and physiotherapists must assess the risk versus the benefit to start these processes. In case of essential and extraordinary precautionary measures should be taken followed by these procedures.

TYPE C: Non-precisely ventilated patients

1. The ESE patients classifications isolated based on a conscious level, and practical freedom.

2. The basic goals of physical therapy intercession are

- Reduce craftsmanship through relaxation.
- Improve the lung limit.
- Promote oxygen supply.
- Improve the useful limit.

TYPE C.1: unconscious and out of service patients

- The intercession of physical therapy can integrate latent ROM activities and a recovery situation.
- The movement and recurrence of physical therapy treatment depend on the patient's rehabilitation potential.
- Regular recovery from MDT if the patient adheres to the practice program.

TYPE C.2: conscious, dynamic and ward patients[14]

The physical therapy mediations may include ROM exercises, dynamic strengthening exercises, dynamic assembly and activities to improve coordination and balance.

- Develop a plan individual treatment depending on the oxygen dependence of the patient, the muscle performance and functional freedom, the limit functional advanced and advanced autonomy.
- Mobilization should be considered a flight production technique because it can cause piracy or expulsion. The most extreme warning must be followed when implementing these strategies.
- Special portability allows you to stay in the isolation area for use by patients with COVID 19 in particular.
- Make sure you have the necessary resources (by hand - at work as a device) before starting the activation.

- The necessary mobility aids must be labeled and left in the patient's room, or cleaned and disinfected, if they are to be reused for different patients.
- Avoid the use of specific large devices as reasonably expected or disinfect them carefully every time they are used in patients with COVID 19.
- Regular recovery from MDT if the patient adheres to the practice program.
- Strict adherence to contamination control procedures and precautions during preparation.

TYPE C.3: conscious, dynamic and free patients[15]

- Physical therapy intercession can include ROM exercises, dynamic walking exercises and breathing.
- Develop an individual training program that depends on the patient's endurance.
- Restrict or limit the presentation by instructing the patient in a protected training program and asking him or her to freely continue the training program.
- Regular monitoring of the MDT to ensure patient compliance with the training program and changes based on FITT rules (repetition, performance, duration and type).

PART 3: Tips for best therapeutic practices.

Respiratory mediation advice[16,17].

- Intercession of the respiratory tract as postural infiltration, respiratory exercise strategies and methods of emissions released to the process of aerosol production.
- Avoid / limit this intercession and physiotherapists must weigh the risk with the benefits deriving from the initiation of these mediations.
- If breathing needs to be observed precautions in the air are. Before entering the patient's room, you need to use the personal protection equipment, such as items for the head, the veil breathing N95 suits cleaned using disposable, clothing uses disposable, eye protection (goggles or face shield), gloves and shoe covers.
- The N95 respirator should be at their ease at the point where the customer must adapt (eg a seal suction), to limit the amount of particles that bypass the channel through the holes between the skin of the customer and the seal of the breathing mask .
- The respirator must be worn (worn) and removed (removed) effectively and worn during introduction.
- For all personal defense equipment (PPE) must meet the pollution control requirements, according to respects the appropriate strategies for extraction and transportation are.
- During patient preparation, physiotherapists must follow the back method (if possible) and be ≥ 2 m away from the patient (if possible) to be outside the "impact zone" cut line.
- In patients with acute hypoxicity they can dyspnoea even in the presence of an organization of oxygen > with a 10-15 l / min bearing cap remaining. In this situation, the use of high flow nasal oxygen (HFNO) or continuous positive pressure (CPAP) or non-invasive ventilation (NIV) can be helpful during all physical therapy procedures.
- When preparing patients with HFNO / NIV, consider the possible natural distribution of vaporized particles of infection.
- The facial veil / deposition veil is ideal for the nasal cannula when a patient is assembled (facial cover with oxygen flow up to 5 l / min, revised cover up to 10 l / min of O2 or Venturi veil up to 60 % FiO2) to distribute the limit accounts. A careful blanket covers the patient's face. If this veil is dirty, remove it according to the anti-pollution regulations and use a different cover.
- If the nasal cannula is the primary alternative, it should be fine in the nostrils and the cannula should be carefully covered. A similar standard is the material when the patient uses HFNO treatment.
- If the patient is ventilated noninvasively (CPAP / BIPAP), make sure that no air is released before starting a physical therapy session. In addition, it must have care to ensure that no separate allocation of circular machines.
- The VIN cover attached to a circulatory T-barrel can be used for patients with respirators to improve oxygen immersion during training.
- Limit or a strategic distance from the use of mechanical devices, such as pulse spirometers, PEEP, seaming, retaining the armor that these processes can theoretically produce in the air and the increase occurs during breathing.
- In ventilated patients with tracheotomy and precise, only if necessary recommended aspiration in closed circuit. Bronchial traction movements must be performed with severe signs.

Positioning to improve oxygenation: The patient is best positioned in a semi-sitting or sitting position while moving from the reclined position. Variations in parallel pressure ulcers, in semi-inclined or inclined positions can be very useful. The positions

should be resolved in fixed movements to reduce and the muscle of the jewels to relax to the ventilation / perfusion ratio to promote . Pads / pads can be used to achieve ideal (eliminated) rest positions.

Advice on preparing mediations[18]

- Mobilization should be seen as a vaporized production system because it causes piracy or expulsion. It also requires close contact of the physiotherapist with patients. In this sense, it should be a serious alarm are active in the realization of these methods are and precautions to be followed in the air.
- When assembling carefully ventilated patients, outrageous considerations must be made to maintain the ventilation circuit during activation.
- If the patient is not mechanically ventilated (CPAP / BIPAP), make sure that no air is released before starting a physical therapy session. We must also pay attention to maintaining the machine allocation circle.
- Patients not exactly ventilated Wear a veil during physical therapy sessions. If this veil gets dirty, it should be removed immediately in accordance with the disease control standards and covered with another cover. Make sure the appropriate resources (hand - in - the - job as a hardware, such as portability), before starting preparation. Avoid sharing material between patients.

Advice on Infection control rehearses[19]

Examine and follow approaches to control hospital contamination.

1. Remove, by way of example, any device / object close to home that contains earrings, watches, cables, mobile phones, acoustic signals and pens before entering the clinic area.

2. The reusable faculty defense equipment must be cleaned and disinfected before use.

3. In order to avoid cross-contamination, an immediate section of the area to be treated and locally defined documents are needed .

4. Physiotherapists who treat patients with COVID 19 are encouraged to wear clean coveralls or one-way coveralls that need to be cleaned daily before starting treatment.

5. Counsellors need to tie their hair and male specialists are asked to lose facial hair.

6. All physiotherapists must undergo an N95 fit test to determine the correct veil size.

7. All physiotherapists must complete the "use and remove" skill of the portable PSA and hand cleaning.

Procedures should be applied during the acute phase with a blatant alarm[20]

It is essential that physiotherapy procedures do not lead to weight gain during the manufacture of breathing. In COVID-19 patients, the primary goal of respiratory physiotherapy is to reduce the signs of shortness of breath and improve lung capacity, neutralizing the discomfort caused by respiratory illusions and immobilization, reduction of disability, improvement of personal satisfaction and reduction of the level of nervousness and discouragement of balance. After completing a physical therapy assessment, such as examining airway conditions, the physiotherapist must decide questions that are useful in the patient's treatment process based on clinical purposes. The point of administration of physical therapy at this stage of the infection movement may include:

- Reduce unnecessary respiratory activities (for example, with respiratory strategies and places that reduce wheezing, the oblique position, the course).
- clean the rest of the program,
- increase in the lung limit,
- improve the gas trade,
- gradually mobilize and expand the campaign,

General well-being acts, prevents the effects of immobilization and increases resistance to physical movements.

Postural situations to reduce shortness of breath Shortness of breath caused by cheating breathing can decrease and immobilize the patient's limit of activity. By placing the patient in a forward tilted position, we can rationalize the effects of the respiratory muscles and reduce the impression of dyspnea. It is recommended to prepare the patient out of bed if the persistent limit allows it.

Respiratory system to reduce shortness of breath[21]:

Breath control - this is supposed to be done. In the case of the patient's condition does not take such a position into account, act on a semi-reclining position (as above). It is important that the patient relaxes the inspiratory flying muscles, in particular those of the arms and neck, at this point he begins to breathe through the nose (warms and hydrates the air), at this point he plays a moderate relaxation and widens at the expiration with the establishment of adequate airways (lower thoracic breathing and stomach). Breathing should be calm (shallow, slow).

The conclusion must be made with the alleged relaxing lip of the lips. This method can be added for normal breathing while you rest and keep this movement in mind. It serves to slightly fix the lips while you exhale.

Physiotherapists work in a variety of environments and regardless of how the CPI can be the same for everyone and in all environments, the rest of the work will help reduce the need to do is in clinical centres, able to distinguish the activity of a physiotherapist in any context. In the basic idea (e.g. private offices, joint specialist studies or general practitioners), the highlight will be the rapid and visible identification and confirmation of cases. In taking care of society (e.g. at home), the supplement is to show patients and healthcare professionals. In serious reflection (for example, in the clinical centre), the complement will be in the organization of respiratory reactions.

Discussion

The current epidemiological situation is an excellent test for any clinical expert. Now it is estimated that about 15 to 20 percent of patients with Covid-19 need to be hospitalized and 5-6 percent need a serious consideration for a period of time longer. As is common with this type of pandemic, the clinical staffs themselves are particularly contaminated and must take satisfactory measures to verify it.

Physiotherapists are an essential element in the multidisciplinary group of active hospital services and intensive care units. Early rehabilitation after the acute period of respiratory pain can limit the discomfort of stability in this way and promote rapid practical recovery. The expectation of this proposed good practice is to soften and improve the care physical therapy of patients with acute COVID and, at the same time, focus on the need to adhere to the undeniably well-established welfare rules[1,19,20,21].

Conclusion

The written survey showed the importance of physiotherapists in treating patients who are fundamentally critical in ICU. The ICU is a unique field in which physiotherapists are an essential part of the multidisciplinary group; the base camp offers various types of mediation, from physiotherapy in the thoracic phase, to the prevention and recovery of lack of strength. The primary goal of intensive care physiotherapy is the type of remote regeneration rather than temporary resistance, and physiotherapists do a lot of work to achieve this. It also seems essential to characterize teaching methods for healthcare professionals in order to receive adequate teaching, as well as for patients who require training on the use of equipment, if common rules can be established. Finally, due to the contamination of flight routes, the use of PSA should not be neglected, since in physiotherapy procedures, in which mist concentrates are generated, there is a high risk of transmission due to the contamination that is now Observe the coronavirus SARS 2 and in this way a risk is conceivable by the physiotherapists who use them.

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PREVALENCE OF UROPATHOGENS IN REPRODUCTIVE AGE GROUP FEMALES AND THEIR ANTIBIOTIC RESISTANCE PATTERN

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Abstract

Introduction: Urinary Tract Infection (UTI) remains the most common bacterial infection in human population. The prevalence of UTI is much higher in females as compared to males. The present study was planned with the aim to find out prevalence of uropathogens and their antibiotic resistance pattern in reproductive age group females.

Materials and Methods: The present study was carried out in department of microbiology, Jayoti Vidyapeeh Women's Universiy, Jaipur from Jan. 2020 to September 2020. Total 105 urine sample were processed for culture and sensitivity testing. Isolation of organism were done by inoculation of samples on Mac-Conkey Agar and Blood Agra media. After 24 hour of incubation at 37^0 C, each isolates were identified on the basis of morphology of colony in culture media, Gram stain, motility and biochemical reactions. Antibiotic sensitivity testing were carried out on Mueller Hinton Agar by Kirby Bauer method.

Results: The prevalence of uropathogen was found 35%. The Gram-negative bacteria were most common isolates in comparison to Gram- positive bacteria. E. coli was the most common isolates followed by S. saprophyticus. Gram-negative organism were found more sensitive to Amikacin, Piperacillin Tazobactum, Ampicillin sulbactum, Cefoperazone sulbactum and Nitrofurantoin. Gram-positive bacteria were found more sensitive to Piperacillin Tazobactum, Tetracycline, Ampicillin sulbactum and Linezolid. E. coli were found more sensitive to Amikacin, Ampicillin sulbactum, Piperacillin Tazobactum and Cefoperazone sulbactum.

Conclusion: Changing antimicrobial resistance pose challenge in treating urinary tract infections. Appropriate and judicious selection of antibiotic would limit the emerging drug resistant isolate in the future to treat this clinical condition successfully.

Keywords: Urinary Tract Infection, UTI, Uropathogens, reproductive age group females. Pregnant women, Antibiotic resistance, E. coli

Introduction

Urinary Tract Infections (UTI) frequently occur in both community and hospital environment are of the most common bacterial infections in humans. The outcomes of urinary tract infections are increase hospitalization, increase patient treatment cost and mortality.[1] Bacteria can invade and cause UTI via two major routes ascending and heamatogenous pathway. Ascending route is most common route of infection in females. Urinary tract infections are characterized as either upper or lower UTI primarily on the basis of anatomical location of infection. The lower UTI affecting the bladder and urethra and the upper UTI affecting the ureter and kidneys mainly.

Women are at three times greater risk for UTI then man because of short, straight anatomy of the urethra, and termination of female urethra beneath the labia resulting in colonization by colonic gram negative bacilli.[2] Most of the UTI are caused by gram-negative bacteria like E. coli, Proteus species, Klebsiella species, Pseudomonas aeruginosa, Acinetobacter, Serratia and Morganella morganii. UTI also caused by gram positive bacteria like Enterococcus, Staphylococcus specially coagulase negative Staphylococci and Streptococcus agalactiae.[3]

E. coli are one of the most prevalent pathogens among gram-negative bacteria capable of causing complicated and uncomplicated UTI.[4] UTI during pregnancy leads to low birth weight babies, increase perinatal mortality and premature births along with acute and chronic sequelae in mothers.[5] Diagnosis and definitive treatment of UTI mainly based on bacteriological culture and antibiotic sensitivity. In past Decade, indiscriminate use of antibiotics resulted in word wide rise of multidrug resistance cases.[6]

Hence, present study planned to find out the prevalence of urinary pathogens and their antibiotic resistance pattern in reproductive age group females to provide better cost effective treatment to female patients.

Aim-: To Detect the micro-organism & to make people aware for the causes of uropathogens

Review & literature

The Cochrane Review by Villar et al assessed the effects of different durations of treatment for asymptomatic bacteriuria and concluded that there was insufficient evidence to evaluate whether a single dose or longer-duration doses were equivalent in treating asymptomatic bacteriuria. Ten studies were included that compared single dose treatment with 4-7 day treatment. The risk of failing to cure asymptomatic bacteriuria was higher for 1 day treatment than for 7 days of treatment although the difference was not statistically significant.

Historically, ampicillin has been the drug of choice, but in recent years E.coli has become increasingly resistant to ampicillin. Ampicillin resistant found in 20 to 30% of E.coli cultured from urine in the outpatient setting. Currently, 30-50% of E.coli are

ampicillin resistant, and 20-30% are cephalosporin resistant.

Fosfomycin trometamol which is a derivative of phosphonic acid is a new antibiotic that can be taken as a single dose 3g sachet orally which is equally effective as 7-10 day course of nitrofurantoin, norfloxacin or cotrimoxazole. This drug is active against E.coli, enterococci and Citrobacter, Enterobacter, Klebsiella and Serratia species .

The incidence of extended spectrum β lactamase (ESBL) producing strains among clinical isolate has been steadily increasing over the past few years, resulting in the limitation of therapeutic options. Microorganisms responsible for urinary tract infection (UTI), especially Escherichia coli and klebsiella spp. have the ability to produce ESBLs in large quantities. These enzyme are encoded by transferable conjugative plasmids, which often code resistance to cephalosporins as well as to other antibiotics. The most frequent co-resistances found in ESBL producing organisms are to aminoglycosides, fluoroquinolones, tetracyclines, and sulfamethoxazole- trimethroprim .

There is a rising incidence of urinary tract infection (UTI) with ESBL producing bacteria. In hospitalized patients with positive cultures for ESBL producing Escherichia coli, the majority of the isolates are attributed to a clinical infection rather than colonization. The commonest clinical specimen to yield the organism was urine, which was positive in 57.8% of patients .

Supriya S.et al in their study found that of the 217 isolated, 87 were cephotaxime resistant Gram-negative bacilli. Of these, 42 (48.3%) were found to be ESBL producers. Escherichia coli, Klebsiella pneumoniae and Acinetobacter were ESBL producing species.

In India antimicrobial susceptibility pattern of uropathogens vary widely by region. High resistance rates to oral antibiotics have been observed, probably due to uncontrolled consumption of these antibiotics. Resistance to amikacin, piperacillin tazobactum and meropenem are low, likely reflecting lower usage of these drugs.

In 2002, SV Lavanya et al , in their study reported that 35.7% of cases were sensitive to Cephalexin, 28.5% to Nitrofurantoin, 23.8% to Amoxicillin and 11.9% to Norfloxacin.

Aziz Marjhan et al From Pakistan in 2006 stated that Escherichia coli showed 66.67% resistance to ampicillins and sulphonamides. Enterobacters showed 100% resistance to ampicillins, cephalosporins and nitrofurantoin. Staphylococcus saprophyticus showed 66.67% resistance to ampicillins and sulphonamides .

R J Girishbabu from Tumkur in 2011 found that Pipercillin-Tazobactum, amikacin and nitrofurantoin were found to be the most effective antibiotics against the urinary isolates. Akinola B. Ajayi from Nigeria found that Staphylococcus aureus, the commonest isolate showed good sensitivity to gentamicin and nitrofurantoin with 75% and 77.8% of the organisms respectively. Proteus spp showed good sensitivity to gentamicin, nalidixic acid, ceftazidime and cefuroxime. Most of the organisms showed good sensitivity to nitrofurantoin and gentamicin.

C. Obirikorang in Ghana in 2012 also showed that most of the E. coli isolated were sensitive to nitrofurantoin and gentamicin

Materials and Methods

A cross sectional study was carried out in the department of microbiology,Jayoti Vidyapeeth Women's University, Jaipur from January 2020 to September 2020. A total no.of 105 urine samples were collected from female patients clinically suspected of urinary tract infection. The women in reproductive age group 16 to 45 years with history of urinary tract infection were included in the study and only one sample was collected from each patient. The exclusion criteria were leaky or dirty container, delay in transportation of sample more than 2 hours, previous history of antibiotics, surgery or operative procedure. Midstream clean catch urine samples were collected and transported to microbiology laboratory for processing. Urine culture and antibiotic susceptibility testing was performed in laboratory.

The urine culture was done using a sterile calibrated loop of 4 mm diameter delivering 10 microliter volume of urine. A loopful of well mixed un- centrifuged urine was inoculated on the Mac-Conkey Agar and Blood Agar media plates. All plates were incubated at 37^0 C aerobically for 24 hours. The bacterial growth was identify by Gram stain, motility and a set of biochemical test including catalase, coagulase, oxidase, indole, methyl red, Voges Proskauer, citrate, urease and triple sugar iron medi Antimicrobial susceptibility testing was performed by using Kirby Bauer disc diffusion method as described by the national committee for clinical laboratory standard (presently called clinical laboratory standard institute).[8] Interpretation as sensitive or resistant was done on the basis of diameter of zone of inhibition of bacteria growth on Mueller Hinton Agar plate as recommended by Hi Media disc manufacturer. Antibiotic discs used for susceptibility testing for gram negative bacteria were Amikacin (30 µgm), Ampicillin sulbactam (10 / 10 µgm), Ceftriaxone (30 µgm), Cefotaxime

(30 µgm), Ciprofloxacin (5 µgm), Cefixime (5 µgm),

Ceftazidime (30 µgm), Cefoperazone sulbactum (75 / 30 µgm), Co-trimoxazole (25 µgm), Norfloxacin (10 µgm), Nitrofurantoin (300 µgm), Ofloxacin (5 µgm), Piperacillin tazobactam (100 / 10 µgm) and Imipenem (10 µgm). Antibiotic disc used for gram-positive bacteria includes Ceftazidime (30 µgm), Ciprofloxacin (5 µgm), Cloxacillin (100 µgm), Co-trimoxazole (25 µgm), Gentamicin (10 µgm), Norfloxacin (10 µgm), Nitrofurantoin (300 µgm), Penicillin (10 U), Piperacillin tazobactam (100 / 10 µgm), Tetracycline (30 µgm), Vancomycin (30 µgm) and Linezolid (30 µgm). Data collected and analysis was done using appropriate statistical methods.

Results and Discussions

In present study, the frequency of uropathogens in reproductive age group female was found to be 36% (Table 1). B. Shanthi et al. (2018)[9] was found the higher percentage due to their large sample size. The maximum number of cases was found in the age group 16 – 30 years and minimum number of cases was found in the age group 31 – 45 years (Table 2). The reason being women in this age group are more sexually active and more prone to develop UTI probably due to characteristic anatomy of the urethra and the effect of normal physiological changes that affects the urinary tract – short urethra, its close proximity to the anus, urethral trauma during intercourse, dilatation of urethra and stasis of urine during pregnancy.[10,11]

Out of 105 cases, 13 females were found pregnant and 92 were found non-pregnant. All 13 pregnant women were found culture positive due to a number of factors including urethral dilation, increase bladder volume and decrease bladder tone, along with decrease urethral tone, which contributes to increase urinary stasis and vesicoureteral reflex and up to 70% of pregnant women develop glycosuria, which favors bacterial growth in the urine.[12]

Gram-negative bacteria dominated over gram-positive bacteria as the etiological agent for UTI as shown in Table 3.

E. coli was the most common isolates both in non-pregnant and pregnant women followed by Staphylococcus saprophyticus. The other micro-organisms isolated were Staphylococcus aureus, Klebsiella pneumoniae, Proteus mirabilis, Citrobacter freundii, Enterococcus faecalis. Out of total isolates, 52% were E. coli and 17.4% were Staphylococcus saprophyticus. Similar results were foundby Goyal Ankur et al. 2015[13] Agersew Alemu et al. 2012[14] and Geeta Gupta et al. 2019.[15]

The gram-negative bacteria were found more sensitive to antibiotics Amikacin, Piperacillin Tazobactum, Ampicillin sulbactum, Cefoperazone sulbactum and Nitrofurantoin (Table 4). Similar results were found by B. Shanthi et al. (2018)[9] and Obiogbolu et al. (2009).[16] The gram-positive bacteria were found more sensitive to antibiotics Piperacillin Tazobactum, Tetracycline, Ampicillin sulbactum and Linezolid (Table 5). The most effective antibiotic for the E. coli was found to be Amikacin and Ampicillin sulbactum, Iram Shaifali et al. (2012)[17] observe Nitrofurantoin followed by Amoxicillin, Nalidixic Acid and Co-Trimoxazole were sensitive. The most effective antibiotic for the S. saprophyticus was Tetracycline and Levofloxacin. Adedeji BA et al. (2009)[18] found Gentamycin and Ofloxacin were the most active antibiotics and isolates showed high resistance to Co-Trimoxazole and Amoxicillin, The reason behind different antibiotic susceptibility pattern of isolates from other studies because sensitivity varies widely by region, OPD and IPD patients included in the study.

Table 1: Showing growth pattern among pregnant and non-pregnant women

S. No.	Growth	Pregnant	Non-Pregnant	Total
1	Present	13	28	41
2	Absent	-	64	64
Total		13	92	105

Table 2: Showing age group wise distribution of pregnant and non-pregnant women

S. No.	Age Group (Yrs)	Pregnant	Non-Pregnant	Total
1	16 – 30	13	29	42
2	31 – 40	-	35	35
3	41 – 45	-	28	28
Total		13	92	105

Table 3: Distribution of isolated micro-organisms in culture

S. No.	Micro-organism	No. of Women		Total
		Pregnant	Non-Pregnant	
1	E. coli	06	15	21
2	S. saprophyticus	04	03	07
3	S. aureus	--	04	04
4	Proteus species	--	02	02
5	Citrobacter freundii	--	02	02
6	Enterococcus	--	01	01
7	Klebsiella pneumoniae	02	01	03
8	CONS	01	--	01
9	No Organism Isolated	--	64	64
Total		13	92	105

Table 4: Antibiotic susceptibility pattern of Gram-negative organisms. (N=23)

S. No.	Antibiotic	Sensitive N (%)	Intermediate N (%)	Resistant N (%)
1	Ampicillin	13 (56.52)	0 (0)	6 (26.08)
2	Piperacillin	13 (56.52)	1 (4.34)	0 (0)
3	Ceftriaxone	2 (8.69)	1 (4.34)	0 (0)
4	Ceftazidime	5 (21.73)	0 (0)	9 (39.13)
5	Tetracycline	7 (30.43)	0 (0)	10 (43.42)
6	Nitrofurantoin	8 (34.78)	2 (8.69)	2 (8.69)
7	Ciprofloxacin	1 (4.34)	1 (4.34)	4 (17.30)
8	Amikacin	16 (69.56)	1 (4.34)	0 (0)
9	Levofloxacin	3 (13.04)	2 (8.69)	4 (17.30)
10	Co-Trimoxazole	6 (26.08)	0 (0)	5 (21.73)
11	Meropenem	2 (8.69)	1 (4.34)	4 (17.30)
12	Imipenem	3 (13.04)	1 (4.34)	0 (0)
13	Cefoperazone sulbactum	12 (52.17)	2 (8.69)	0 (0)

Table 5: Antibiotic susceptibility pattern of Gram-Positive organisms. (N=13)

S. No.	Antibiotic	Sensitive N (%)	Intermediate N (%)	Resistant N (%)
1	Amoxicillin	2 (15.38)	0 (0)	0 (0)
2	Co-Trimoxazole	5 (38.46)	2 (15.38)	3 (23.07)
3	Ofloxacin	4 (30.76)	0 (0)	1 (7.69)
4	Linezolid	9 (69.23)	0 (0)	0 (0)
5	Vancomycin	2 (15.38)	1 (7.69)	0 (0)
6	Ampicillin sulbactum	10 (76.92)	0 (0)	1 (7.69)
7	Tetracycline	11 (84.61	0 (0)	1 (7.69)
8	Levofloxacin	9 (69.23)	0 (0)	0 (0)
9	Piperacillin Tazobactum	1 (7.69)	0 (0)	0 (0)
10	Ciprofloxacin	9 (69.23)	1 (7.69)	1 (7.69)

Conclusion

The present study raised awareness regarding high vulnerability of women in reproductive age group for urinary tract infections. The pregnant women were found more prone to develop UTI in comparison to the non-pregnant women. The study provide information regarding uropathogens and their antibiotic susceptibility pattern. Gram-negative bacteria were found more common isolates in comparison to gram positive bacteria causing UTI. Analyzing antibiotic susceptibility pattern of uropathogens will help to overcome the therapeutic dilemmas and to guide in selection of appropriate antibiotics for empirical treatment to the patients**Funding:** Nil.

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WORKPLACE HARRASMENT OF WOMEN

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Abstract

Women in our society play a vital role in the development of our country. She is not only a homemaker, she is a person who is the backbone of the whole family. She performs all household functions and along with this she fulfills all the obligations in her office being the employee of the office. Our society is developing day by day but still the mindset of the society members have not broadened up. They still think that the women in just meant for household works. But still a few ratio of people help in the upliftment and development of a woman's future. A woman plays many roles in her life for instance she plays a role of a daughter, wife, mother, daughter-in-law and after performing all her roles perfectly, she also works as an employee. Our Constitution provides equal opportunities for women and had made no discrimination between men and women. If male members are given more priorities than females, then it is against Fundamental Rights and thus it is declared as violation of Article 14 of Constitution. Both men and woman are getting equal treatment but still there are few places where women is still seen with a bad eyes and they don't think women capable to work efficiently as compared to men . They appreciate women not only because they encourage their work but because they want favors from women.

Harassment at workplace has become a wide issue which is very common globally and which leads in degrading the society. Women have become so modern and energetic in the fields of jobs and business. Many women's have proved it that they are not less than men still women is been harassed. Women are also free to live her life without any discrimination and continue her life with dignity. Generally men believe that they are superior to women but they have no reason to prove it. We all agree on the contention that a man also plays a very important role in the family as he handles all the financial matter and also acts as a protector for the whole family.

We cannot deny with the fact that the man is the head of the family but still a man alone cannot handle all the responsibilities including his job, handling household activities, nourishing the child and taking care of his parents even, so we can say that a man is incomplete without his wife and he cannot manage everything alone. He also needs a house lady who can handle him and can even take care of his family.

Every man needs his wife to be educated so that she can be a good guide for their children. After struggling with the issues of her family and taunts of her in-laws, she move forward to build her future and make optimum utilization of her knowledge. As soon as she enters the workplace, she gets harassed. She is not just appreciated and given first priority because of her good work, sometimes she gets fast success because male members of the firm wants favors from her.

Workplace harassment is a direct torture on the females who works in the firm, factories or different organization. It is generally a common problem which majority of women faces, but they never report the matter in the Court of law or to the higher authorities due to various fears. Instances of fears can be losing their jobs, family and their goodwill in the society. Thus, there should be a safe and positive environment in the working area so that a woman should work efficiently and ultimately help in the instant development of the organization rather than having a fear to safe herself from the bad intentions of the few male members who thinks a girl just as a product.

Key Words – Workplace, Harassment, Sexual Harassment, Woman

Introduction

Sexual harassment at a work place environment means the infringement of the ladies rights and she has the right to live her life. It also includes few acts which are not genuine, for instances physical contacts with the lady, a request or a demand for providing sexual favors, showing porn movies, saying something or acting in a way through which a lady becomes uncomfortable. A woman gets so uncomfortable with such unwelcome acts but still she do not take any action against the person who has a malicious intention because she need to save her job to earn her livelihood and to provide a good survival to her family and in result she has to survive in the negative environment.

Sexual harassment refers to the forceful pleasures demanded by male members from female employee which includes the mental and physical harassment of a female employee. It is illegal in the eyes of law which involves the exchange of sexual desires in return of job opportunities.

The employer offers a job and in return demands for a sexual pleasure and to please him which in result will lead to the upliftment of a woman. In past times, females were not employed as they were only meant to do their household work but now in the present era, women has become independent and has raised in every field for instance, a women has proved her talent in the fields of medical sciences, law, etc. She has proved that she is not less than a man. She started from riding an auto-rickshaw to flying a plane. Thus, the harassment of women at her workplace is termed as "WORKPLACE HARRASMENT OF WOMEN".

On one hand, a woman is been harassed by demanding sexual favors by her Bosses or her seniors and on the other hand she is given less remuneration for her work as compared to the male employees. There is a biasness done amongst the male and female employees regarding their salary which results to the gender inequality. A woman is been harassed at her workplace by listening to the various taunts, unpleasure acts, showing pornography, sending unpleasant mails and messages which makes the woman uncomfortable. It degrades the inner confidence of a woman and lowers down her strength and capabilities.

In the present era, many laws are been made for the protection of a woman at her workplace. It's the duty of an employer that a woman should get a safe working environment at her workplace and she should feel comfortable. Harassment directly have a negative impact on the woman's mental, physical and emotional health. After the enforcement of many laws for the protection of a woman, still she is been facing a number of issues at her workplace. This should be totally stopped and a man should think a woman as a respected personality that she handles both her household work and works in the office, rather than thinking her as a product.

Objectives

Sexual Harassment at a work environment is thought about infringement of ladies entitlement to correspondence, life and freedom. Its objectives are:-

- To make working place safe for the women and there should be no threatens at her workplace, which affects the social and financial strength of the women.
- To explore the working number of ladies this results in the empowerment of women.
- To make her financially stable if she is comfortable with the working environment.
- To provide her a dignified life as she respects deserve for performing her functions of a home maker and a working lady.

Methodology

I have performed my research through various methods:-

- Telephonic Interviews
- Surveys
- Observations
- Documents and records
- Case studies
- Reports of organization
- Reports of Non Government Organization

Definition Of Workplace Harassment

Workplace harassment is termed as threatening or torturing an employee or a group of employee on the workplace. Harassment at workplace includes both mental and physical torture.

Aggrieved Person

A woman irrespective of any age, caste, married or not, employee of an organization or an outsider if harassed becomes a victim or an aggrieved person.

Types of Workplace Harrasment

Discriminatory Harassment

It includes harassment due to racism, age based discrimination, gender harassment, religious based harassment, disability based harassment, sexual based harassment, etc.

Personal Harassment

It is a type of harassment which does not depend on a particular caste, creed, age , religion. It includes comments which are not appropriate, taunts which makes the women uncomfortable, Malicious remarks, humiliation, etc.

Phsical Harrasment

It is a type of harassment which involves physical violence, attacks or threats. It may also lead to assault in serious cases. It is also termed as workplace violence. For instance, kicking , hitting, threat to hit him comes under the head of physical harassment.

Power Harassment

It is characterized by a power disparity between the harasser and the harassed. It includes extreme demands which an individual cannot fulfill.

Phychological Harassment

It has a negative impact on a person's psychological well being. It lowers strength and confidence of an individual. It affects a person's physical health, social and works. It includes saying wrong terminologies about the person.

Cyberbullying

In this they share humiliating things about the victim by mass emails or chats. It includes rumors about the women and spread it on social media.

Retaliation

Retaliation harassment occurs when a person harasses someone else to get revenge and to prevent the victim from behaving in such a way again. For instance an employee complains about the other employee to lower down his image in the office.

Sexual Harassment

It includes unwanted sexual favors demanded by the employers from the employee. For example sharing sexual photos, inappropriate sexual gestures, entering in someone's personal life, bad jokes and taunts which makes the girl comfortable.

Quid Pro Quo Sexual Harassment

It is a type of exchange based sexual harassment. If a job is been offered to a woman, in return she is been ask to provide some sexual pleasures to her Boss and please him. For instance, It can be asked if the employer give a job offer or a promotion to a woman employees, in return he asks for some sexual favors.

Third Party Harassment

It is a type of workplace harassment which is done by a third party i.e. someone who is outside of the organization.

Verbal Harassment

It includes things like insulting or saying bad words to an individual, making her uncomfortable either in public/ private.

Harassment is illicit just on the off chance that it depends on some ensured normal for the representative, for example, his or her age, race, national root, sex, religion or incapacity. What's more, badgering must be serious or unavoidable keeping in mind the end goal to damage the law.

Case Analysis- Vishaka And Others V/S State Of Rajasthan

(Bhanwari Devi Case)

Vishaka and others V State of Rajasthan was a 1997 Indian Supreme Court where Vishaka and other women's groups filed Public Interest Litigation (PIL)against the State of Rajasthan and the Central Government of India to enforce fundamental rights of working women under Article 14, 19 and 21 of the Constitution of India. The petition was filed after Bhanwari Devi, a social worker in Rajasthan was brutally gang raped for stopping a child marriage.

Conclusions and Suggestions

According to me, workplace harassment has become a very serious problem; still women are not making complaint regarding harassment. I think they should not take this problem so lightly. The few tricks to handle it are as follows:-

- A woman should not ignore the harassment she faces. She should be so strong and fight back.
- She should keep records of time and duration of phone calls, messages, emails, CCTV footage in which she gets such messages which makes her uncomfortable.
- The woman should report the complaint against the person who harasses her. She should not take her complaint back in fear of losing her job or goodwill. Her family members should also cooperate rather than asking her to be quiet regarding the harassment faced by her.
- A woman should resort to law if she feels that the investigation was not fair. If she thinks that injustice happened with her, then she can also move to the higher authority for redressing her grievance.
- No problem last for a lifetime. This is a crucial stage which a woman must face with full confidence and she must take care of her physical and mental health.
- If we feel that we cannot handle all this alone, then take help from your family members ad fight for justice. You should not run with the problems, because switching to another job is not the solution. Harassment is a common issue and its spread all over.
- We should say a big "NO TO SEXUAL HARASSMENT".

One of every five ladies approx is been sexually harassed in the working environment. But still they do not report the harassment in fear of losing their job, or in fear that there will be a scar on their image. Majority of the family members even after knowing

their problem just pretend to support her. They merely advised to either switch the job or either ignore all this and just focus on their work. But no one help them to find the solution.

It's not easy to leave a job of Rs. 1 lakh per month, but according to my opinion she should take strict action against the person who harassed her and fight for justice because money is just a medium of survival and its definitely not big than our self respect.

It's not a crime against one individual; it's a crime against humanity. If today a girl who is a victim will not complain, then it will become a habit of the accused to molest every girl in the workplace, because he is aware that no one will report against her. It is a request to all women to raise your voice if you are facing any such harassment, because nothing can be bigger than our SELF RESPECT.

To conclude workplace harassment is an old phenomenon. Being a woman you are been given opportunities to fight for the wrong that happened to you and get a chance to give your contribution in Stopping Workplace Harassment and help in the development of our society providing a safe environment at the workplace.

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EFFECT OF NATUROPATHY AND PREKSHA MEDITATION ON RHEUMATOID ARTHRITIS PATIENTS

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Abstract

Aim- Present study was aimed to find out the effect of yoga (Yogic kriya of whole body) Preksha Meditation and naturopathy in improvement of joint movement and disability by measuring Range of Motion (ROM), Health Assessment Questionnaire (HAQ) and Rheumatoid Factor (RF) in patients with Rheumatoid Arthritis. The goal of treatment was regression of symptom like Joint pain, swelling, muscle weakness.

Method and Martial- Total 60 rheumatoid patients were enrolled and divided into two groups Group 1 included 30 patients taking medicine. Group 2 included 30 taking Yoga, Preksha Meditation and Naturopathy. Range of Motion in finger and wrist was assessed bilaterally in terms of degree. Disability was assessed by using HAQ, a self-reporting method and an observational method. They were trained for 4 months of Yoga, Naturopathy and Preksha Meditation. All the data was collected before onset of study and after 1 month and analyzed statistically with student 't' test.

Results- Finger joint movability, wrist joint up movability, wrist joint down movability were significantly increased, and Health Assessment Questionnaire and RA Factor were significantly decreased in subjects after undergoing four months of Yoga, Preksha Mediation and Naturopathy treatment.

Conclusion- Yoga, Preksha Meditation and Naturopathy may be used as a non-pharmaco therapeutic and safe modality as an effective lifestyle adjunct to medical treatment to improve quality of life of patients. It is to be emphasized that it is very effective for prevention as well as management of all-pervading stress and stress related disorders.

Keywords- Range of Motion, Health Assessment Questionnaire, Rheumatoid Factor, Naturopathy. Preksha Meditation

Introduction

Rheumatoid arthritis (RA) is the most common inflammatory, autoimmune disease that cause pain, joint stiffness-especially in the morning-and loss of function. This autoimmune disease results in progressive joint destruction and deformity leading to varying degrees of limitations in daily activities [1]. It affects the structural integrity and function of musculoskeletal joints and eventually the entire body [2]. Rheumatoid arthritis affects the whole body, including several organs, and so is described as

a systemic disease. The disease generally presents in a symmetrical (both side of the body) pattern, most often involving the hand joints. progressive and irreversible joint damage is caused by the immune system attacking its own body tissues, particularly those lining the joints. joint pain and swelling lead to structural deformities and disability, causing a reduction in joint movement and muscle use. In the longer term without effective treatment the disease causes much damage and disability[3]. Rheumatoid arthritis affects most 18 of the joints of the body but certain joints, particularly those of the wrists, hand and feet, are more likely to be affected. At initial diagnosis, the joints on both hands and feet are found to be affected in almost half the cases. Both shoulders and knee are also involved initially in about one-quarter of cases, and both ankles and elbows in about 1 in 6 cases. As the disease progresses, all the joints are likely to be affected [4].

In rheumatoid arthritis, the immune system targets synovial membrane and attacks it. The synovial membrane secretes synovial fluid into the joint. Synovial fluid is the joint fluid that lubricates and nourishes the joints. Other tissues can also be targeted by the immune system in rheumatoid arthritis, but the synovium, or synovial membrane, is generally the primary target. When the synovial membrane is attacked, it becomes inflamed (synovitis) and can thicken and erode. As the synovial membrane is destroyed, the synovial fluid is also and not secreted. The surrounding structures can also become involved leading to the joint deformities as can be seen in rheumatoid arthritis [5].

Material and Methods

Purposive Sampling technique was used. Total 60 subjects of Rheumatoid Arthritis patients were enrolled and divided into two groups termed as experimental group and control group. The subjects of experimental group were given treatment of Naturopathy twice in a week and practice Yoga and Preskha Meditation for 30 minutes every day. All the parameters i.e. Rheumatoid factor (RA

factor), Finger Joint Movability, wrist joint up movability, wrist joint down movability, Helath Assessment Questionnaire were recorded two times i.e. pre-phase (before experimental intervention), post phase (after 4 months).

Treatment

- Naturopathy Treatment
- Hand & Foot bath
- Tub bath
- Local steam
- Hot Compress

Yoga Therapy

The yoga therapy includes practice of Yogic Kriya of Whole body,

Preksha Meditation

- Kayotsarga
- Leshya dhyana.

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The total treatment period for each patient was four months.

Parameters

There may not be one best test for measuring disease activity of RA, but over years a number of methods have been devised. These include patient questionnaires, joint counts, lab tests etc. In this study, therapeutic effect of yoga was finally assessed with the following parameters.

Rheumatoid Factor (RF)- The blood samples were taken for Rheumatoid factor (RF) prior to the intervention and after a period of 4 months [6].

Health Assessment Questionnaire (HAQ)- HAQ is measurement of functional Disability. Functional improvement in Activities of Daily Living was studied by the hindi translation of Health Assessment Questionnaire (HAQ) [7].

Range of Motion (ROM)

Joint Affected- Rheumatoid arthritis affects most of the joints of the body (wrist, hands and feet) but certain joints are more likely to be affected like metacarpophalangeal joints and Proximal interphalangeal joint. It was measured by standard measurement tool Goniometer.

Statistical method:

Results are expressed as mean ± standard deviation (SD). Student's paired t test (two tailed) from baseline to 4 months was computed.

Result

The obtained data were statistically analyzed, and we found a significant decrease in the level of RA which was 30.170 at the time of pre-experimental stage in experimental group which decreases to 18.517 after 4 months of experimental intervention where as there is no significant change in control group.

A significant increase in the level of finger joint movability which was 29.470 at the pre-stage of experimental group After practice for 4 month as experimental intervention, the mean was seen to be increasing and reached to 37.176 showing statistical significance and there is no significant change in control group after 4 months.

The flexibility of wrist joints up and wrist joint down in the experimental group of subjects were recorded as 55.588, 51.176 after four months of experimental intervention the mean value increased up to 67.352, 60.882 however in the case of control group no significant improvement was observed.

In Health Assessment questioner a significant improvement was observed in experimental group at the level of $p \leq 0.01$ as compared to control group.

Sr. no	Parameters	Group	Pre- Stage Mean± SD	Post Stage Mean± SD	Co-relation	T	P value
1.	RA Factor	Control Group	63.50±51.64	66.06±50.40	0.986	1.382	NS
		Experimental Group	30.17±25.35	18.51±14.48	0.748	2.759	0.05
2.	Finger Joint Movability	Control Group	25.00±13.25	27.81±14.38	0.852	1.742	NS
		Experimental Group	29.47±16.59	37.17±16.13	0.945	5.853	0.01
3	Wrist joint up Movability	Control Group	60.86±14.35	62.50±17.16	0.675	0.592	NS
		Experimental Group	55.58±12.63	67.35±12.60	0.873	7.628	0.01
4.	Wrist Joint Down Movability	Control Group	56.59±15.99	62.95±15.63	0.890	4.018	0.01
		Experimental Group	51.17±16.97	60.88±18.33	0.960	7.778	0.01
5.	Health Assessment Questionnaire	Control Group	0.302±0.226	0.254±0.177	0.824	1.741	NS
		Experimental Group	0.505±0.578	0.338±0.441	0.957	3.417	0.01

Discussion

Drug treatments for RA have improved markedly in the last few years. Despite this, arthritis cannot be cured and even the best medical care may be of little help. There is a great need for additional activities that patients can do themselves to reduce pain and disability.

Naturopathy and yoga exercises that are less traumatic for the joints can be beneficial in maintaining flexibility and strength in RA patients. While traditional guidelines have restricted RA patients to only gentle exercise, research suggests that more intense exercise may not only be safe but may produce greater muscle strength and overall functioning and does not exacerbate pain or worsen the disease. In treatment group, there was a significant reduction in immunological marker, RA factor and patients had good relief in pain, swelling and stiffness of muscles.

The present study included meditation and yoga therapy as the psychological benefits of yoga such as stress reduction contribute to greater overall health. Yogic techniques involve isometric contraction which is known to increase skeletal muscle strength and reduce stress and anxiety [8], improve autonomic functions by triggering neurohormonal mechanisms by the suppression of sympathetic activity. Yoga may serve as a valuable adjunctive therapy for improving physical function, mental wellness, and overall quality of life among individuals with rheumatic disease. In their study Evans et

al [9] have reported that yoga for 6-10-week duration, carried out twice or thrice a week resulted in statistically significant improvement in pain, disability index, general health, mood.
The warmth decreases muscle spasm, relaxes tense muscles, relieves pain, and can increase range of motion naturopathy and yoga can provide important additional physical and psychological health benefits and help in the better management of chronic rheumatoid arthritis condition in a scientific manner [10]. Since studies of naturopathy and yoga have suggested potential benefits therefore the practice may have particularly strong appeal if it is capable of eliciting and maintaining patient adherence [11, 12, 13].

Conclusion

For treatment of RA, naturopathy and Yoga Therapy can be used effectively as an additional therapy to allopathic medicine. The overall improvement in movement, pain and general health of RA patients by Naturopathy and Yogic techniques used in the study may be because of

improvement of mental health, muscle strength and blood circulation. Naturopathy and yoga, the cost-effective treatment may offer the best hope for arresting arthritis condition.

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