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Dr. Madhu Gupta

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STABILITY INDICATING RP-HPLC METHOD DEVELOPMENT AND VALIDATION FOR THE ESTIMATION OF CILNIDIPINE IN BULK FORM AND MARKETED PHARMACEUTICAL DOSAGE FORM

Subhashchand Gupta*

ABSTRACT:-Novel stability-indicating isocratic Reverse Phase High-Performance Liquid Chromatographic (RP-HPLC) method was developed for the quantitative determination of Cilnidipine drug substance samples in Bulk Form and Marketed Pharmaceutical Dosage Form. The developed method was developed using Phenomenex Luna C_{18}, 150 mm x 4.6 mm and 5µm Column with mobile phase containing a isocratic mixture of Methanol: Phosphate Buffer in the ratio of 25:75% v/v and pH was adjusted to 3.4 with orthophosphoric acid. The eluted compound was monitored at 270nm; the run time was 7min within which Cilnidipine was well separated. Cilnidipine was subjected to the stress conditions of acid, base, thermal and photolytic, oxidative degradations. Cilnidipine was found to degrade slightly in oxidative and photolytic stress conditions and stable in acidic, base and thermal degradation conditions. The degradation products were well resolved from main peak and its impurities, proving the stability-indicating power of the method. The developed method was validated as per ICH guidelines with respect to specificity, linearity, limit of detection, limit of quantification, accuracy, precision and robustness. The method was found to be linear over a range of 5-15µg/ml for Cilnidipine. The established method proved as reproducible one with a %RSD value of less than 2 and having the robustness and accuracy within the specified limits. Assay of marketed formulation was determined and find with 99.87% for Cilnidipine.

Key Words: Cilnidipine, RP-HPLC, Method Development, Validation, ICH Guidelines.

INTRODUCTION:-Cilnidipine is a calcium channel blocker. Cilnidipine[1] is approved for use in Japan, China, India, Korea, and some European countries to treat hypertension. It is a calcium antagonist accompanied with L-type and N-type calcium channel blocking functions. Unlike other calcium antagonists, Cilnidipine can act on the N-type calcium channel in addition to acting on the L-type calcium channel. Cilnidipine is a dihydropyridine calcium antagonist. It was jointly developed by Fuji Viscera Pharmaceutical Company, Japan and Ajinomoto, Japan and approved in 1995. Compared with other calcium antagonists, Cilnidipine[2] can act on the N-type calcium channel that existing sympathetic nerve end besides acting on L-type calcium channel that similar to most of the calcium antagonists. This drug is approved in China, Japan, Korea, India, and several countries in the European Union.Cilnidipine is a diesterified 1, 4-dihydropyridine-3,5-dicarboxylic acid. A calcium channel blocker, it is used as an antihypertensive. It has a role as a calcium channel blocker, an antihypertensive agent and a cardiovascular drug. It is a dihydropyridine, a 2-methoxyethyl ester and a C-nitro compound.The IUPAC Name[3] of Cilnidipine is 3-O-(2-methoxyethyl) 5-O-[(E)-3-phenylprop-2-enyl] 2,6-dimethyl-4-(3-nitrophenyl)-1,4-dihydropyridine-3,5-dicarboxylate. The Chemical Structure of Cilnidipine is follows
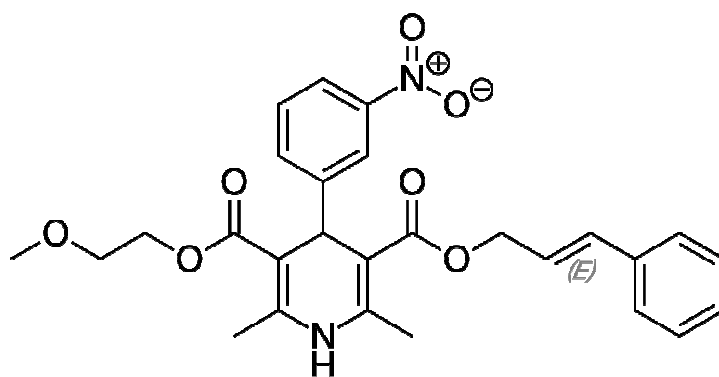
Fig-1: Chemical Structure of Cilnidipine

Instruments and Equipments:-Lab india T60 UV-visible spectrophotometer used for UV scanning of cilnidipine standard solution having known concentration of 10µg/ml.Analysis performed on Waters system High performance liquid chromatography consists isocratic UV-visible detector through Empower 2 software installed in computer system for processing and data collection. Ultra Sonicator (Wensar wuc-2L) used for sample sonication. For pH adjustment used P^H Analyzer (ELICO). Weighing done on High Precision Electronic Balance and Mobile phase degassed on Vacuum Filtration Kit (Labindia)

Materials and Reagents:-Potassium dihydrogen orthophosphate (AR Grade) made by Sd fine-Chem ltd,

Water (HPLC Grade)made by Sd fine-Chem ltd,

Methanol (HPLC Grade)made by Loba Chem,

Standard preparation for UV-spectrophotometer analysis:

The standard stock solutions:- 10 mg of Cilnidipine standard was transferred into 10ml volumetric flask, dissolved & make up to volume with Methanol. Further diluted 1 ml of the above solution to a 10 ml volumetric flask and make up to volume with methanol to get known concentration of 100µg/ml.(**Stock solution**) Further diluted 1 ml of the above solution to a 10 ml with methanol to get known concentration of 10µg/ml.It **was** scanned in the UV spectrum range of 200 to 400nm. This has been performed to know the maxima of Cilnidipine, so that the same wavelength can be employed in HPLC UV detector for estimating the Cilnidipine. **Shown in Fig. 2**We observed that while scanning the Cilnidipine solution shown the maxima at 270nm wavelength.

HPLC Instrumentation & Conditions:-Waters HPLC system i.e. High performance liquid chromatography consists isocratic UV-visible detector through Empower 2 software installed in computer system for processing and data collection.

Phosphate Buffer:-Weigh accurately 6.8 gm Potassium dihydrogen orthophosphate in 1 litre volumetric flask, Added about 500 ml HPLC grade water. Sonicated to dissolve, make volume upto mark with HPLC grade water. pH was adjusted to 3.4 with orthophosphoric acid.

Preparation of Mobile Phase:-The mobile phase used in this analysis containing of a mixture of Methanol and Phosphate Buffer in the ratio of (25:75) % v/v.

Preparation of Standard Solution: Prepared Cilnidipine standard solution having known concentration of 10µg/ml.

Preparation of Sample Solution: Weight accurately about 10mg of Cilnidipinetest sample and transferred in to a 10 ml volumetric flask. The content was dissolved with 7 ml of mobile phase and then sonicated for 15 min. The volume was made up to the mark with the mobile phase. Further diluted 1 ml of this solution to a 100ml with the mobile phase to obtain a known concentration of 10 µg/ml of Cilnidipine.

Method development:-Scanning spectrum shows maxima of Cilnidipine is 270nm, hence detector wavelength kept 270nm. Initially start development using C18 column such as inertsil C18, Symmetry C18, Hypersil C18 and Develosil C18 with different proposition of water,organic solvent modifier and phosphate buffer. As the part of analytical Method development trials, Methanol and Phosphate buffer in the ratio of (25:75) % v/v was finalized.On the basis of trials Phenomenex Luna C_{18}, 150 mm x 4.6 mm and 5µm was finalised column. Optimised chromatographic condition are **shown in Table-1**

Validation of the RP-HPLC Method: Validation of the optimized method was performed according to the ICH Q2 (B) guidelines.

Specificity: Specificity of a method was determined by testing standard substances against potential interferences. The method was found to be specific when the test solution was injected, and no interferences were found because of the presence of excipients. The optimized chromatogram of Cilnidipine without any interference was shown in Fig-3.

Repeatability Precision: Injecting six replicates of standard solution for system suitability and Six individual sample preparation of same batch for method precision. The RSD of retention time and response area of the standard solution observed about 0.32%and 0.31 % respectively.**Shown in Table-2**, RSD of the repeatability sample was observed 0.37 % s**hown in Table-3.**

Intermediate Precision:-The intermediate precision performed on different days. The Intermediate Precision consists of two methods: -

Inter Day (Day1): In Inter Day process, 3 sample preparation of the 100% concentrationare injected at a different interval of time in same day. The RSD of response of Day 1, intermediate is about 0.26%. S**hown in Table-4**

Intra Day (Day 2): In Intra Day process, 3 sample preparation of the 100% concentration are injected at same intervals of time in different days. The RSD of response of Day 2 is about 0.67%. S**hown in Table-5**Hence Cilnidipine revealed that the proposed method is precise.

Linearity: Prepared linearity level from standard stock solutionto obtain concentration ranging from 5-15µg/ml of CilnidipineS**hown in Table-5**. We observed that the calibration

curve showed good linearity for Cilnidipine (API) with correlation coefficient (R^2) of 0.9996 **(Fig.3).**A typical calibration curve has the regression equation for Cilnidipine is

 y = 242891x + 28359

Accuracy:- To ensure the reliability and accuracy of the method recovery studies were carried out by adding different amounts (80%, 100%, and 120%) of pure drug of Cilnidipinewere taken and has been injected to HPLC system.We observed that the mean percentage Recovery of the drugs are 100.156% which is within the range of 98-102% and %RSD is within the range.The results were shown in **Table-6**.

Robustness: Robustness of the method was verified by altering the chromatographic conditions like deviation of ±2 nm in the detection wave length and ±0.2ml/min in the flow rate, were tried individually. A solution of 100 % test concentration with the specified changes in the operational conditions was injected to the instrument. % RSD was reported in the **Table-7**.

Assay of Marketed Formulation:-As per I.P. method 20 tablets were taken to determine the average weight. Alltablets were finally powdered and crushed. Weight accurately tablets powder equivalent to 10mg of Cilnidipine and transferred in to a 10 ml volumetric flask. The content was dissolved with 7 ml of mobile phase and then sonicated for 15 min.Cool and volume was made up to the mark with the mobile phase and filtered with 0.45µ membrane filter. Further diluted with the mobile phase to obtain a known concentration of 10 µg/ml of Cilnidipine.

The %Purity of Cetanil tablets containing Cilnidipine was found to be 99.867% (± 0.457).The data are shown in **Table-8**.

Calculation For drug substance:-% Assay=AT/AS×Cstd/Cspl ×100

Calculation For drug product:

% Assay=AT/AS×Cstd/Cspl ×100/L.C x AW

Where:

AT = Peak Area of Cilnidipine obtained with test preparation

AS = Peak Area of Cilnidipine obtained with standard preparation

Cstd = Concentration of standard

Cspl = Concentration of sample

AW = Average weight of sample

L.C. = Label Claim of finished product

Forced degradation study:-The capability of analytical method is performed through the forced degradation study and check the stability indicating method performance. Hydrolysis (Acidic/Basic), Photolytic and Oxidation stress condition conducted to ensuring

the degradation of drug substance. We observed that Cilnidipine was degraded in Hydrolysis, Photolytic and oxidation stress condition. It is thermally stable. The degradation products were well resolved from main peak and its impurities, proving the stability-indicating power of the method**Shown in Table 9.**

Method Robustness:-Method Robustness performed by changing chromatographic condition parameter such as wavelength, Flow rate and organic phase modifier.Influence of small changes in chromatographic conditions such as change in flow rate 1ml (± 0.1ml/min), Wavelength of detection 270nm (±2nm) & organic phase content in mobile phase 60 (±5%) studied to determine the robustness of the method are also in favour of (Table-10, % RSD < 2%) the developed RP-HPLC method for the analysis of Cilnidipine (API).

CONCLUSION:-The developed method was validated as per ICH guidelines which include the parameters like Specificity, linearity, precision, accuracy and robustness. Application of developed method showed the analysis of Cilnidipine in Bulk Form and Marketed Pharmaceutical Dosage Form where no interference of excipients were found. The developed method was advantageous over most of the reported methods in terms of sensitivity, simplicity, cost-effectiveness and experimental conditions. a very simple HPLC instrument is required. The developed method can be used to determine the purity of Cilnidipine from various sources.

RESULTS AND DISCUSSION

Standard preparation for UV-spectrophotometer analysis:
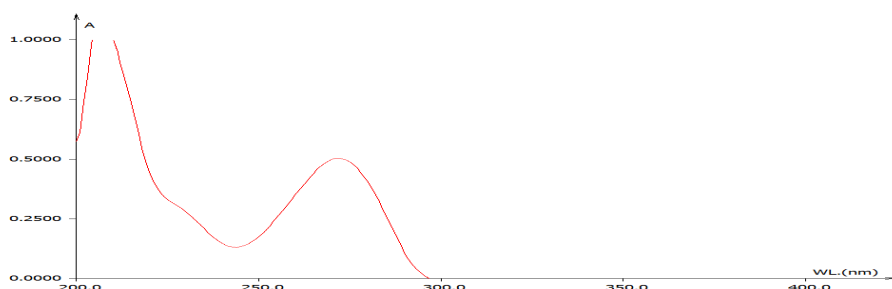
Fig-2: UV-Spectrum for Cilnidipine
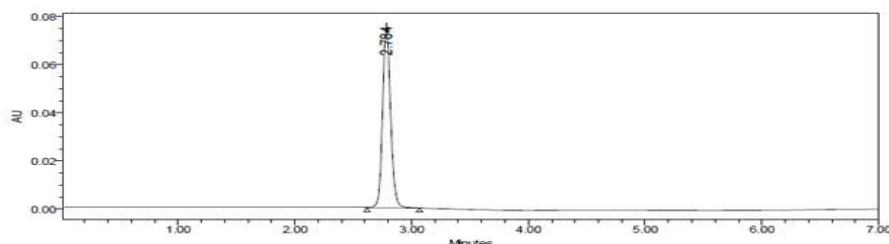
Fig-3: Optimized Chromatogram for Cilnidipine
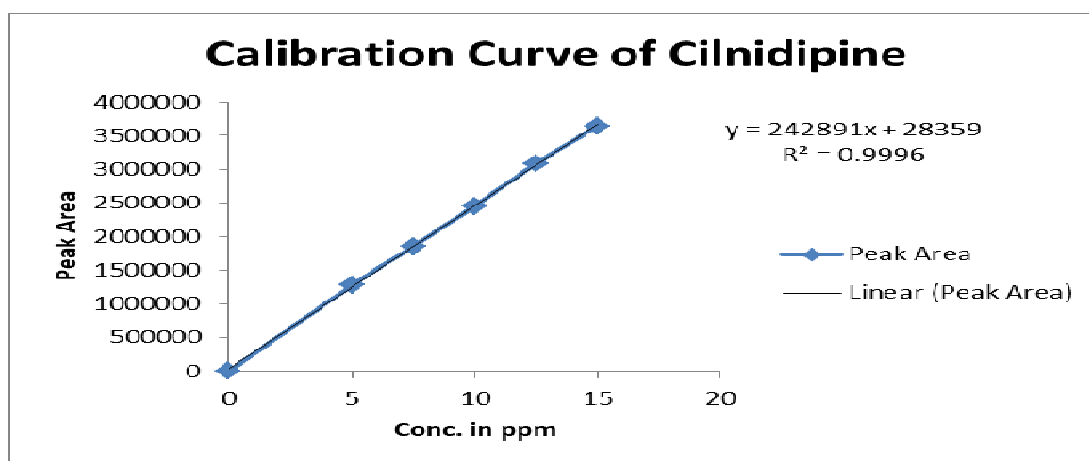
Fig-4:Calibration Curve of Cilnidipine (API)

Table-1: Optimized Chromatographic Conditions

Column	Phenomenex Luna C_{18}, 150 mm x 4.6 mm and 5µm ID
Mobile Phase	Methanol : Phosphate Buffer in the ratio of (25:75)% v/v
Flow Rate	1.0 ml/minute
Wave length	270 nm
Injection volume	10 µl
Run time	7 minutes
Column Temperature	Ambient

Table-2: Dataof System Suitability Test

S.No	Injection no	RT	Area	Height	USP Plate Count	USP Tailing
1	Injection 1	2.768	2435648	7542	8745	1.38
2	Injection 2	2.784	2452417	7659	8758	1.39
3	Injection 3	2.786	2453654	7582	8975	1.35
4	Injection 4	2.794	2454576	7635	8965	1.38
5	Injection 5	2.780	2455642	7659	8859	1.34
6	Injection 6	2.789	2453524	7698	8869	1.37
Mean		**2.785**	**2450910**			
S.D		**0.00894**	**7555.046**			
%RSD		**0.321**	**0.308255**			

Table-3: Repeatability readings

HPLC InjectionReplicates of Cilnidipine	Retention Time	Peak Area	Theoretical Plates	Tailing Factor
Replicate – 1	2.777	2453658	8652	1.38
Replicate – 2	2.799	2469854	8694	1.34
Replicate – 3	2.789	2458677	8672	1.39
Replicate – 4	2.797	2459689	8692	1.37
Replicate – 5	2.797	2477898	8679	1.35
Replicate – 6	2.799	2469853	8638	1.36
Average	**2.793**	**2464938**		
Standard Deviation	**0.00867**	**9058.437**		
% RSD	**0.310483**	**0.367491**		

Table-4: Results of Intermediate precision Day 1 for Cilnidipine

S.No.	Peak Name	RT	Area (µV*sec)	Height (µV)	USP Plate Count	USP Tailing
1	Cilnidipine	2.768	2489851	7584	8658	1.38
2	Cilnidipine	2.789	2478658	7598	8699	1.37
3	Cilnidipine	2.784	2478785	7596	8693	1.39
Mean		**2.780**	**2482431**			
Std.Dev.		**0.01097**	**6425.934**			
%RSD		**0.39455**	**0.258856**			

Table-5: Results of Intra day precision(Day 2) for Cilnidipine

S.No.	Peak Name	RT	Area (µV*sec)	Height (µV)	USP Plate Count	USP Tailing
1	Cilnidipine	2.777	2536542	7869	8987	1.57
2	Cilnidipine	2.780	2547154	7889	8967	1.56
3	Cilnidipine	2.797	2569853	7896	8969	1.59
Mean		**2.78467**	**2551183**			
Std.Dev.		**0.01079**	**17017.06**			
%RSD		**0.38733**	**0.66703**			

Table-9: Concentration of Cilnidipine

Concentration in ppm	Peak Area
0	0
5	1275475
7.5	1857648
10	2456587
12.5	3082546
15	3642447

Table-6: Accuracy Readings

Sample ID	Concentration (μg/ml)		Peak Area	% Recovery of Pure drug	Statistical Analysis	
	Amount Injected	Amount Recovered				
S_1 : 80 %	5	4.998	1242548	99.960%	Mean = 100.22 %	
S_2 : 80 %	5	4.996	1241879	99.920%	S.D. = 0.004854	
S_3 : 80 %	5	5.039	1252436	100.780%	% R.S.D.= 0.484321	% Mean Recovery = 100.156 %
S_4 : 100 %	10	9.998	2456854	99.980%	Mean = 100.05 %	
S_5 : 100 %	10	9.983	2453216	99.830%	S.D. = 0.00262	

S$_6$: 100 %	10	10.034	2465648	100.340%	1 % R.S.D. = 0.261976
S$_7$: 120 %	15	15.016	3675847	100.106%	Mean = 100.20 %
S$_8$: 120 %	15	15.043	3682345	100.286%	S.D. = 0.000911
S$_9$: 120 %	15	15.033	3679868	100.220%	% R.S.D. = 0.090875

Table-7: Results of Method Robustness Test

Change in Parameter	Theoretical Plates	Tailing Factors	% RSD
Flow (1.0 ml/min)	8645	1.38	0.265
Flow (0.9 ml/min)	8754	1.37	0.487
More Organic (75+5)	8952	1.32	0.698
Less Organic (75-5)	8214	1.34	0.458
Wavelength (272nm)	8368	1.39	0.597
Wavelength (268nm)	8952	1.34	0.856

Table-8: Assay of CilnidipineTablets

Brand Name of Capsules	Labelled amount of Drug (mg)	Mean (±SD) amount (mg) found by the proposed method (n=5)	Assay + % RSD
Cetanil 10mg (Alembic Pharmaceuticals Ltd)	10	9.867 (± 0.324)	99.867% (± 0.457)

Table-9: Results of Forced Degradation Studies of Cilnidipine

Stress Condition	Time	Assay of active substance	Assay of degraded products	Mass Balance (%)
Acid Hydrolysis (0.1N HCl)	24Hrs.	76.302	23.698	100%
Basic Hydrolysis (0.1N NaOH)	24Hrs.	84.426	15.574	100%
Thermal Degradation (60^0C)	24Hrs.	91.105	8.895	100%
UV (254nm)	24Hrs.	85.121	14.879	100%
3% Hydrogen peroxide	24Hrs.	86.315	13.685	100%

REFERENCES

1. https://pubchem.ncbi.nlm.nih.gov/compound/Cilnidipine
2. https://en.wikipedia.org/wiki/Cilnidipine
3. Michael E. S., Ira S. K., ''Analytical Method Development and Validation'', Marcel Dekker, Inc., New York, 1997; 25-29.
4. Connors K.A, "A Text Book of Pharmaceutical Analysis", Wiley-Inter science, Singapore, 1999; 175.
5. Willard-H.H., Lynne L.M. Jr., John A., Dean F.A.," Instrumental Methods of Analysis", 7[th]Edn. CBS Publishers and Distributors, New Delhi; 1-12, 580-610, 614-652.
6. Davidson A.G, "Basis of Spectrophotometry", 4th Ed., Part-2, CBS Publishers, New Delhi, 2002; 264-74.
7. Fronk A.S.,"Handbook of Instrumental Techniques for Analytical Chemistry", 1st Edn. Pearson Education, 2004; 7.
8. Skoog D.A., Holler F.J., Nieman D.A.," Principle of Instrumental Analysis", 6th ed Reprint, Thomson Brooks/Cole publication, 2004 ; 300-351.(UV)
9. Sharma Y.R., "Elementary Organic Spectroscopy, Principle & Chemical Applications", S. Chand & Company Ltd., New Delhi, 2005; 8.
10. Kalsi P.S., "Spectroscopy of Organic Compounds", 5th ed, New Age International Publishers New Delhi, 2002; 7.
11. Braun R.D.,"Introduction to Instrument Analysis", Pharma Book Syndicate, Hyderabad, 2005; 261.
12. Beckett, A.H., Stenlake J.B., "Practical Pharmaceutical Chemistry", (1997), 4th edition, Part 2, CBS Publishers and Distributors; 275-337.
13. Dyer J.R., "Application of Absorption Spectroscopy of Organic Compounds", Prentice Hall of India Pvt. Ltd, New Delhi 2005.

14. Snyder L.R., Kirkland J.J. and Glajch L.J., "Practical HPLC Method Development", 2ndEdn. John Wiley and Sons, Inc., 1997; p.p. 2-18.

15. Sethi P.D., "High performance liquid chromatography: Quantitative analysis of pharmaceutical formulation", 2001; 1stEdn. 5 – 11, 141.

16. Jens T. Carstensen, Rhodes C. T., "Drug stability principle and practices", 3rdEdn. Marcel Dekker Inc.; 331,338-339.

17. Nash R.A., Watcher A.H., "Pharmaceutical Process Validation", Marcel Dekker Inc.; New York, (2003); 507-522.

18. Validation of Analytical Procedure: Text and Methodology, ICH Harmonized Tripartite Guideline, Q2 (R1), 2005; 1-13.

19. Practical Pharmaceutical Chemistry, IV edition, Volume II, by A.H. Beckett, J.B. Stenlake, 275-298.

20. Practical HPLC method development by Lloyd r. Snyder et al; 2nd edition, p-503.

21. Guidance for industry, analytical procedure and method validation, U.S. Department of health and human services FDA, august 2000 (www.fda.gov/guidance/index.htm).

22. ICH Q2b: validation of analytical procedure; methodology (international conferences on harmonization of technical requirements for the registration of drugs for human use, Geneva, Switzerland, Nov 2003).

Digital High Way based e-Rural Business solution for Economic Developmentof Rural Women Artisans

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Abstract:-Agriculture being main occupation, it is said that India lives in villages. However with skewed growth over the years, a vast majority of rural population continues to be deprived of their basic human rights and more so when it comes to condition of women folk. However, there is another side of the story that gives us hope and inspiration originating from many women's success stories who now live lives of dignity. Empowering rural women and better utilizing their talents like handicrafts, pottery, and homemade items etc. to make them self-sufficient is an area needing focus. Success of digital India scheme Ruralbazar.nic.in developed to promote handicrafts of rural women and implemented in limited part of southern India, has inspired to suggest a proposed model to centralize the E-business solution for Rural areas of artisans to enable better connectivity with end user/ consumer and product delivery facilitated by available supply chain solutions on global basis.

Key Words: Empowering rural artisan, digital India, e-rural business, Supply chain management

1. Introduction:-COVID-19 pandemic has caused a serious economic downturn. As a result, our Prime Minister, Shri Narendra Modi, has launched the Atmanirbhar Bharat Abhiyan with the aim to strengthen our economic stability and realising the vision of India as a self-sufficient country. Despite the rise of urbanisation more than half of India's population is projected to be from rural background and thus growth and development of rural economy with improved living conditions of rural population is fundamental for ensuring inclusive growth and overall development of the country.Women folk has remained at the receiving end in our feudal society, but now with the deeper penetration of the e-environment right in the rural areas; their expectations and ambitions are fast changing. There is immense potential, enviable talent and traditional expertise as artisans passed from generation to generation, which can be grouped and channelized for entrepreneurship, but there aren't enough opportunities at their door steps. Though there are quite a few success stories of women breaking down all social barriers and excelling through self-help groups, need is to have an all-encompassing platform which takes up the promoter, enabler as well as facilitator role. Proposed e-business solutions nicely fit for this role as they not only provide vital input in integrating and automating trade formalities between the various resource persons for trade facilitation, but also help establishment of Single Window facilities.

2.   Objectives:-To develop e-business solution duly supported by Government channels/departments, connecting rural artisan groups to end users/buyers through real time connectivity while making use of the now already established supply chains and financial systems.

3. Problem statement definition-Need for extending help and facilitating mechanisms for development of rural women has been under focus of Government machineries and numerous separate groups have been created at the State levels to assist rural women for their economic

upliftment. Various web sites / digital marketplaces are available to promote them, but there is no centralised system to channelize their work to reach end users simultaneously. Most of these work in isolation or in silos. Enabled connectivity is missing between different States to share information about artisans and their work.No common platform exists to provide services to the consumer. Active and real time participation of product seekers and product providers which keeps the business interactions thriving is not facilitated.

4. Literature Review:-Women from rural areas are now taking risks and turning into successful entrepreneurs. Their success stories are an inspiration to many, and their initiatives have made significant advances in rural development by bringing employment and skill training facilities to small villages. Learning from their accomplishments not only gives an insight into areas needing focus but also help build up on their treaded paths for bringing in improvement. Few success stories studied from net are briefly summarised below.

4.1 Zainab Akil and Sameena Lalhad launched online platform Maheelain December2020, which empowers**home-based** women **entrepreneurs** to get an online presence and widen their customer base in Chennai. The platform is an online marketplace and now has onboarded 15 vendors to promote their products. [1]

4.2 Gunavathy Chandrasekaran, a polio victim, founded "Guna's Quilling". Through quilling she has educated and inspired thousands of other women to stand on their own feet. This brand sells wall art, greeting cards, miniature figurines, jewellery etc. [2]

4.3 Godavari Satpute, a Maharashtra native now from Pune, founded Godavari Akashkandil, a paper lamp manufacturing company in 2009, after her husband lost his work and she rose to the task of meeting her family's financial needs. Her business generated over 30 lakhs in revenue in just four years. [2]

4.4 Pabiben's transformation from a daily wager in Gujarat's Kutch village to an entrepreneur with global customers is inspiring. She has also inspired 160 other women who work for pabiben.com, her artisan company having an annual turnover of over Rs30 lakh that crafts artisanal goods using traditional embroidery techniques. [3]

4.5 Sobita Tamuli, 35, is from Assam's Telana village and runs "Seuji", an all-women self-help organisation that producesand sells organic manure as well as traditional Assamese japis.Sobita has kept aside the middlemen and manages from concept to production and distribution by herself.She has instilled in the villagers the spirit of entrepreneurship.[4]

4.6 Udyogini, one of the self-help organisations, approached the Hand in Hand India team for uplift Programme for women of Taje village in July 2020 for putting up first scented oil unit in Pune's Maval neighbourhood. With assistance from HiH team in buying materials and skilling, these eight women pooling a collection of INR 16,000 are now earning and sharing a monthly profit of around INR 23,000. [5]

4.7A very unique use for cow dung –appealed to Women of Kashal Panchayat in Maharashtra, with idea for Dhoop or fragrance sticks made from cow dung and supported by the Hand in Hand India skilling team guidance &initial investment, started their income-generating operations. The enterprise is now currently producing 300kg of this handcrafted dhoop per month, with a monthly net profit of INR 10,000. [5]

4.8 Lakshmi Amol Shinde started a small snack business (Papad), selling her delicacies in her village Wardha. Eleven more women joined her later and she expanded her flourishing business to include shops in Nagpur, Maharashtra's winter capital.[6]

Babli Devi and members of her self-help community of tribal group of Udaipur, trained by Agriculture University on custard apple value chain, are now selling pulp to ice cream companies and catering units with 40-50% profit margin. The unit has currently 150 women and now registered as a producer company.[6]

These efforts were facilitated by support from National Rural Livelihoods Mission (NRLM), under the Ministry of Rural Development (MoRD) program. [6]

5. Influencing factors for conceptualisation of proposed model:-Conceptualisation of model deals with identifying the influencing factors and leveraging their inter-relationships. In the present case we have a demand – supply continuum with the prospective buyers and the rural women talent respectively on the two sides. The other two primary influencers are the facilitators and enablers which not only initiate and sustain the interactions but also help a wider dispersion supporting as catalyst. Five major influencing factors under each of these four nodes are shortlisted and depicted under the below matrix.

Demand
- Global consumers
- Unsatiated needs
- High purchase ability
- Awareness about type of products available
- Awareness about sources of supply

Supply
- Dispersed artisans
- Mostly uneducated with no business background
- Unguided and unpooled efforts
- Strong will and high growth aspirations
- Many inspiring success stories

Facilitators
- Government focus
- Promotional schemes
- Self Help Groups
- NGOs
- Increased digital connectivity

Enablers
- Variety and immense products range
- Remote area mobile accessibility
- SCM services for last point delivery
- Access to FTS through mobile banking
- Viral trend for returning back to basics

These factors are interdependent like given an unsatiated need and high purchase ability, if the awareness about products available and the sources of supply is increased, the demand is certainly expected to go up. Similarly though the rural women lack the necessary business acumen, once the strong will and growth aspirations are duly supported / guided the supplies numbers shall definitely grow northwards. The facilitators and the enablers have to necessarily take proactive lead and ensure point of presence availability. Once the synergy gets established amongst these, the system is bound to become self-sufficient, self-evolving and self-growing.

6. Proposed Model:

Model is conceived in two stages – (1) At Macro level depicting the overall structure of the system considering various stakeholders and the major processes that connect them and (2) At Micro level where the interactions amongst the primary stakeholders and the activity flow is detailed out.

6.1 Level -1: Process flow Block diagram at level 1 is developed as below.
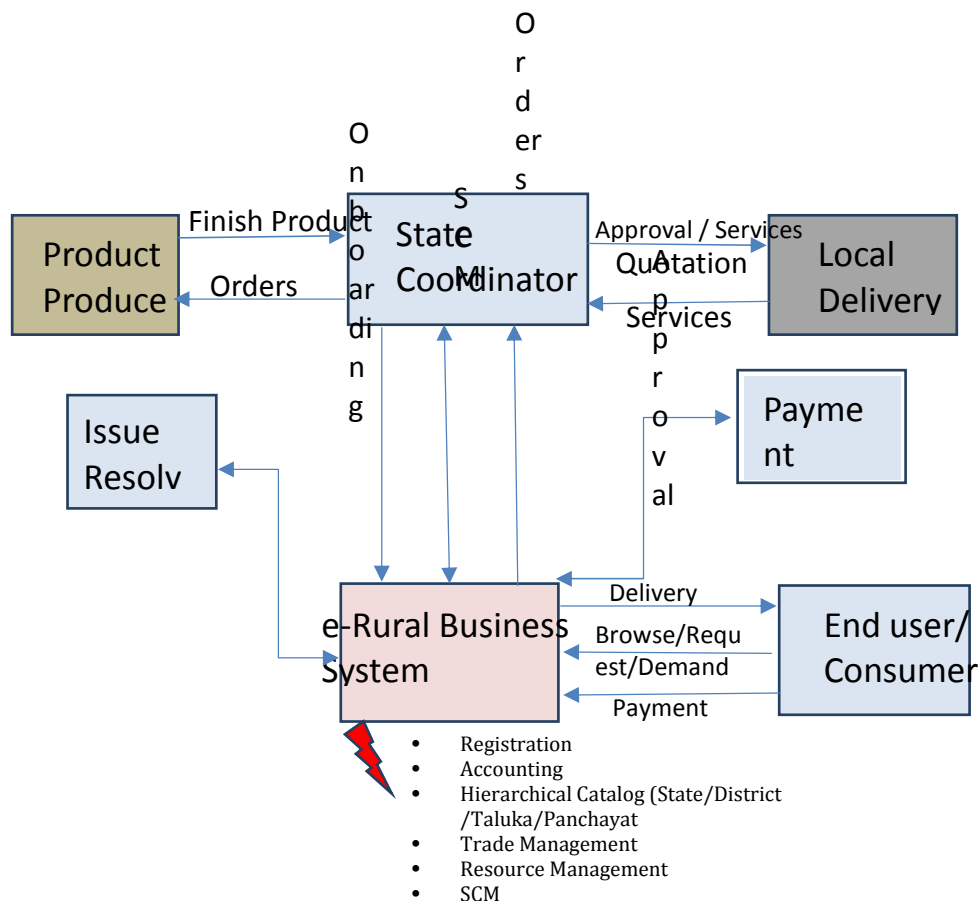
Figure 1 : Block Diagram of e-rural business system

As is evident from the Block Diagram, all basic stakeholders - state co-ordinator, product payment gateways, end user/consumer and issue resolver are interlinked and connected through thecentral e-Rural business system, while the coordination/ facilitation of product producers and local delivery is enabled at the state co-ordinator level.The Central system manages various activities as below:

- On-board registration of Artisans, resource owner, seller, supplier, SHF/NGO's and end user/consumer.
- Accounting: manages payments from end user via various payment gateways ,
- Trade management: dealing with sellers, pricing policy, negotiation.
- Supply chain management: end to end delivery of resources.
- Resource Management: Manages the raw material to finish product,
- Catalogue: provides access to view various categories of artefacts to add it to cart for buying. In addition to it facilitators can update and edit into it.

6.2 Level-2 : This depicts roles and interconnection between each component. Cohesive efforts, understanding expectations & maintaining timeliness are key factors.
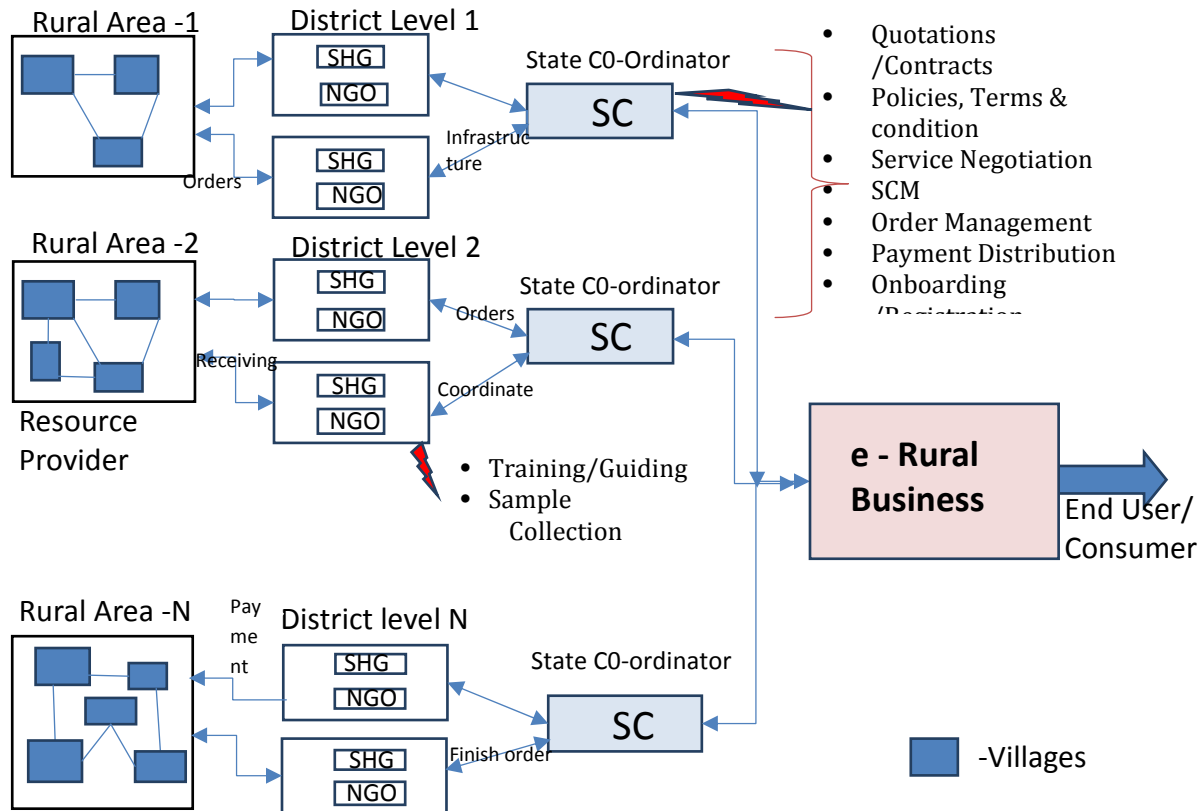
Figure2 : Block Diagram of e-rural business system[7]

6.2.1 State co-ordinator- Each state appoints coordinator who is main link between SHG and Govt. as a facilitator to areas under his districts.As a facilitator his responsibilities for providing essential infrastructure, guidance, resources to the artisans include:

- Quotations /Contracts : quotation generation ,timely contract biding , selection of sellers and suppliers , applying all payment terms and conditions for trading
- Policies, Terms & condition: as per the Govt. rules policy formation,terms and condition of payments with sellers and suppliers
- SCM: Managing timely supply of orders via delivery system
- Order Management: timely completion of orders, managing resources as per demand
- Payment Distribution: remuneration & profit distribution among artisans and workers
- Onboarding Registration: Registering Sellers, artisans and suppliers on one platform ,
- Trading Partner: Service Negotiation and managing sellers , suppliers
- IT training/ Infrastructure: basic infrastructure to create work environment, machines/equipment/mobile, trainer to train basic operations to run business.

6.2.2 Self Help Group(SHG)/NGO:SHG's are middleware between State co-ordinator and artisans. Many SHG/NGO's are active at different districts of state to support , guide and train the rural women. Theiractivities includes:

- Training/Guiding: guiding and supporting artisans to promote their work at larger scale , also to train them in IT/equipment handling for the ease of operation
- Sample Collection: showcasing the art of various districts under them

- Orders Following: keeps track of raw material required to fulfill the orders , timely completion of product and channelized to concern coordinator
- Payment: ensure that a reasonable share of their payment is allocated to them, as well as that they receive their benefit.

- **6.2.3 Artisan:** Since several villages are part of a single district, their artisans are in direct contact with some of the SHGs that serve their communities. They provide artists with all of the resources, encouragement, and help they need to complete orders on time.

7.Conclusion:-Towards achieving self-reliance and promoting local products, words and phrases like Atmanirbhar Bharat & Vocal for Local are largely trending on social media becoming part of everyday usage.According to reports, support for #VocalForLocal is rising around the country. We hope that this growing trend encourages more women to pursue their dreams and start businesses that are creative, profitable, and, of course, locally focused [8]. It is evident from many success stories that the common thread is the initiatives taken by the Government and the role of NGOs. All the known successful women entrepreneurs have received help from the Government initiatives and schemes. The local administration, along with NGOs, has also been helpful in such cases. And these ladies, in turn, are giving back to society. They are sharing their success with others to help them make progress in their life. There is still a lot to be done when it comes to the overall empowerment of women. Such initiatives are to be nurtured and the continuity of the chain sustained for ensuring positive results both in terms of women empowerment and India's overall economic growth. That is the shining light of hope amid the darkness of pandemic and economic slowdowns.

8**. References:**

[1] Das, B. (2021, January 20th). Women Empowerment. Retrieved from edex live: https://www.edexlive.com/happening/2021/jan/20/how-this-online-platform-is-empowering-home-based-women-entrepreneurs-to-get-an-online-presence-17401.html

[2] Sam. (2021, May 13th). Five Amazingly Successful Women Entrepreneurs from Rural India. Retrieved from Milliontainment: https://milliontainment.com/five-amazingly-successful-women-entrepreneurs-from-rural-india/

[3] Sharma, V. (2021, January 21st). Gujarat;s Pabiben Rabari. Retrieved from 30shades: https://30stades.com/2021/01/06/gujarat-pabiben-rabari-daily-wager-now-millionaire-entrepreneur-pabi-bag-women-empowerment/

[4]The Innovative Entrepreneur from a Small Village of Assam – Sobita Tamuli. (2021, March 24). Retrieved from Realshepower: https://www.realshepower.in/2021/03/24/the-innovative-entrepreneur-from-a-small-village-of-assam-sobita-tamuli/

[5] Rural Entrepreneurship: Success stories from Maharashtra. (2020, December 10th). Retrieved from Hand in Hand: https://hihindia.org/blog/village-uplift/rural-entrepreneurship-success-stories-from-maharashtra/

[6] GUPTA, B. M. (2019, February 21st). End Poverty in South Asia. Retrieved from worldbank: https://blogs.worldbank.org/endpovertyinsouthasia/rise-india-s-rural-women-entrepreneurs

[7]Uthariaraj**, J. H. (August 2012). CREW: A Cloud based Revenue model for Rural Entrepreneurial Women in. IJ-CLOSER, Vol.1 , No. 3., ISSN: 2089-   3337*

SUSTAINABLE DEVELOPMENTS AND INNOVATIONS IN HEALTH CARE

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The Indian Health Care industry is considered the most progressive & promising sector and is currently valued at more than US $ 70 billion. It is projected that it will grow further to reach US $ 280 billion in the coming few years. This steep growth is influenced by many factors and the major contributors are growing and aging population, rising economy, improving socio economic status, changing disease patterns specially the lifestyle diseases. Although the progress our country is making is very impressive. But the Indian health care scenario is a paradox and very complex to comprehend. On one side India has world class super specialty hospitals, state-of-the artmedical technologies, highly qualified health manpower, so on and forth, but the basic health care facilities are still inaccessible to the average Indian patient. The urban rural divide and inequalities in health care delivery is widening day by day. India is ranked lowest for when it comes to our health care indicators. 0.6 physicians /1000 population, 0.9 beds/1000 population, only 25% of our population has a public/private health insurance coverage, 71% of out-of-pocketexpenditure on health, 77% of health care needs are met by public sector. It is documented that each year about 39 million people are pushed into poverty because of their inability to meet the health care costs. Despite the rapid progress, basic issues of affordability, availability and quality of health care still persists.Meeting the healthcare needs of India's billion plus population has always been a challenge at the same time calls for opportunities and innovations.

"Innovation is increasingly being seen as the currency of 21st century. The future prosperity of India in the new knowledge economy will increasingly depend on its ability to generate new ideas, processes and solutions and through the process of innovation convert knowledge into social good and economic wealth." (India innovation portal Decade of Innovation 2010-20.)Innovation is defined as the introduction and application of ideas, products, services, processes or technologies, which are either new or are improvements of the current system, that benefit individuals, a group or the society as a whole.There are plenty of scope and avenuesavailablefor health care innovations depending on the stakeholders involved and benefits intended. The compelling needs of increasing population and ever-increasing cost of health care, India has emerged as a nerve centre of innovations that even developed countries like US are seeking cues from our success stories.Innovations in healthcare are possible across the health continuum starting from creating awareness of risk factors, disease symptoms, adoption of healthy life styles, need for regular health check-ups. Innovations span across all aspects of primary, secondary and tertiary care including monitoring as well as financial protection.Innovations can be broadly classified into 03 categories Product, process and paradigms. Product Eg- health Kiosks launched by Apollo life, Fortis international centre for Robotic Surgery, Mac 600 portable ECG diagnostic device by GE etc.Process innovations are defined as new or improved steps undertaken to optimise business performance. Eg Amrita HMIS by HP, Go-Green, Go paperless initiatives by Columbia Asia, Apollo telemedicine Networking foundations etc.Paradigm innovation is the creation of new business models or patterns or as the re- inventions of the basic values propositions of existing business. Eg Social insurance schemes, public private partnership etc.

Driving sustainability of innovations is equally challenging and it is the driving force that balances growth and technical advances. Sustainability can be ensured if innovations are

- Holistic   : Spanning across the value chain
- Cost effective: Minimal costs for desired outcomes
- Affordable: Optimal prices based on target market
- Recognized: Awareness on relevance and usage

Concerted efforts and a cohesive strategy is needed to build and strengthen an environment of sustainability that promotes improvement in technology, quality of human resources and research capabilities.

Conclusion:-Addressing health care challenges is a complex preposition and it requires a thorough understanding of the health care scenario and the various stake holders involved. Innovations in health care is the most effective solution to ensure quicker, effective and efficient way to meet the unmet health needs. Although there is no best standard that fits all situation but the health industry, Govt and all stakeholders need to work in close collaboration to foster an environment for sustainable innovations.

Study on User Awareness about Data center, Documentation center and Library & Information science Profession in India: To Making Atma Nirbhar Bharat.

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ABSTRACT:-Libraries and media platforms are the two different sources of information. Former is mostly used for storage and reading while later is responsible for the dissemination of the information. The innovations in information communication & technology have made major changes, not only the way information is collected, stored, processed, retrieved but also in the dissemination of the information within the society. Data centers, Documentation centers and Library & Information science centers along with other sources of information are most common sources for the access of information. Rapid advancement in the technology emerging a new way of learning. The present paper is discussing about the different aspects of user awareness of UG and PG students of Department of Library and Information science of Bareilly College, Bareilly towards LIS profession, Data center, Documentation center in India.
Keywords: User awareness , Library and information, Online library, Atma Nirbhar Bharat .

Introduction:-Education is fundamental right as per Article 21-A **of** our Indian Constitution under Right to Education Act (RTE) 2009, this act recently completed its decadal anniversary just before the introduction of COVID-19. Possessing oneself of literate to every citizen instead of living in a remote area is very essential for the overall growth of the nation. Libraries always contribute to enhance the reach of education. The concept of Atma Nirbhar Bharat is given by the Hon'ble Prime Minister of India Shri Narendra Modi on 12 May 2020 in context of making Indian economy system self dependent as the system was being highly affected due to COVID-19 Pandemic. In root cause if we see that this concept urges every citizen to be self dependent or Atma Nirbhar.In this connection the atma nirbhar citizen can be possible if he or she has some basic education. So awareness of the users about the education and it's related tools, technology strategies and policies is an important factor for the research.

Literature Review

Ranganadham & Babu (2012) conducted the ''study of the User awareness and use of Library Information resources and services in Osmania University, Hyderabad.'' This study discussed the various parameters to assess the adequacy, availability & accessibility of library collection, their awareness and satisfaction with reference to information sources and services in the library.

Gupta and Garg (2021) discussed Innovations and quality Assurance in Higher Education in NEP (New education policy 2020). In the study they elaborate how the restructure of the education system, pedagogy, innovation in Higher education assessment, accreditation and quality assurance in the education can be achieved by implementing the NEP 2020.

Gupta and others (2014) discussed the ''awareness among library staff in power sector organizations about some social media applications and frequencies of access to those applications at their workplace.'' It is found from the study that 69% of respondents were aware about the applications of social media while 31% were not .Percentage of respondents who aware but never used social media applications like social cataloguing (60.4%), RSS aggregators (56.3%), web file sharing service (56.3%), social bookmarks (56.3%), Power point sharing (54.2%), content management (52.1%) and collaborative writing (47.9%).

Karnati and Babu(2018) examined Awareness and Use of e-resources among the Users of University Engineering College Libraries in Andhra Pradesh. The study reveals that mostly users i.e. 65.44% are visiting the library daily. The study shows that 82.96 respondents learnt the use of e-resources through self-learning and 29.66% replied that they were satisfied with e-books.

Objectives:-The followings are the objectives of the study:

• To study the concern of LIS students about the LIS profession, Data Centres, Documentation centres.

• To understand the possibilities of Libraries in making Atma Nirbhar Bharat.

• To know about the Govt.'s Initiative for Sustainable Development and Innovation in Atma Nirbhar Bharat in the education.

• To make suggestions for the upgradation of Indian library system.

Scope of the Study:-The study is undertaken to user awareness towards LIS profession, Data center, Documentation center in India by the UG and PG students of Department of Library and Information science of Bareilly college, Bareilly.

Methodology :-Survey method was used to do this study. Pre Structure Questionnaire was used to collect data from the students. 70 questionnaires were distributed to the UG and PG students of Library and Information science. Total 68 questionnaires out of 70 were received. After collecting the data, it was analysed and interpreted in the form of tables and graphs.

Analysis of the Data

Gender wise participation in the study: Out of the (Figure 1)68 respondents, 46 (67.6%) were females while rest of the respondents i.e. 22(32.4%) which shows that the interest of females towards LIS education is more than that of the male
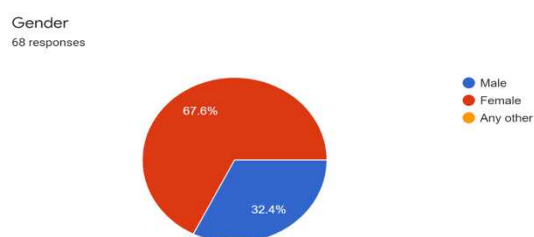
Figure.1 Gender wise participation

Class Wise distribution: Figure 2 shows that the majority 39 (57.4%) of the respondents are of Bachelor in library and information science. While 29 (42.6%) of the respondents are of Master in the library and information science.
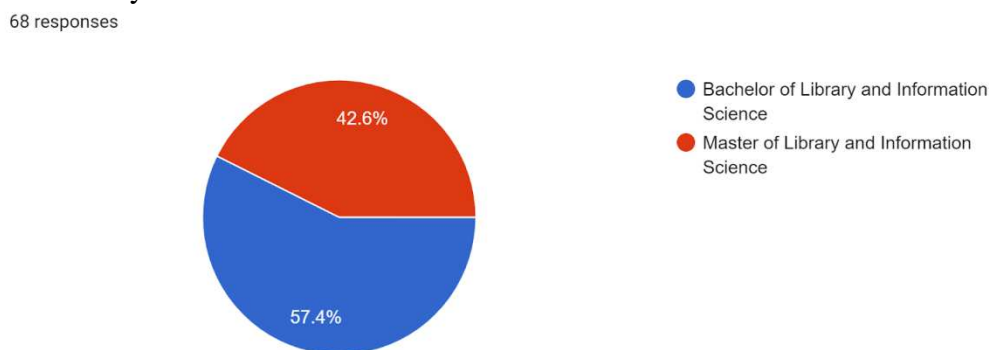
Figure. 2 Class wise distribution

Educational Background: Since the Library and Information science discipline is mostly offered in India only after completing the undergraduate degree. Although some students enter the field after completing their postgraduate degree. It is observed from the graph that 32(47.1%) of the 68 were only undergraduate while remaining i.e.36(52.9%) were Post graduated.

68 responses
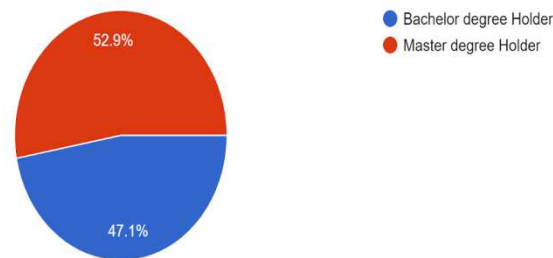
Figure.3 Educational Background

Authenticity of the Library Resources: 19(27.9%) believe that the library resources are cent percent authentic. While 30(44.1%) respondents think that library resources are 80% authentic than others.8(11.8%) about 60% ,10(14.7%) about 50% and 1(1.5%) think that these resources are not the authentic.

68 responses
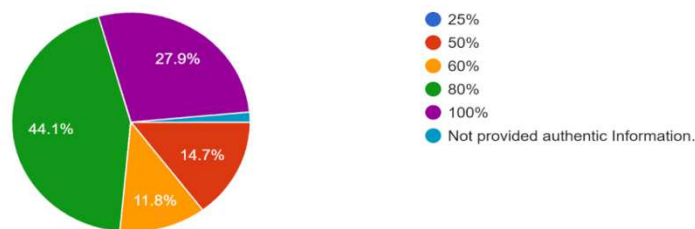
Figure: 4 Authenticity of the Library Resources

Contribution of Libraries to Making Atma Nirbhar Bharat: It can be easily understood from the figure 4 that 97.4% of the respondents feel that Indian Library System can contribute to Making Atma Nirbhar Bharat while the rest are not thinking that it can't be contributed.

68 responses
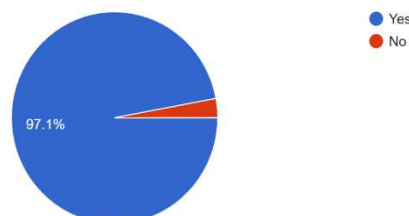
Figure.5 Contribution of Libraries to Making Atma Nirbhar Bharat

Awareness about Data center, Documentation center and Library & Information science Profession: it is necessary to know about the interest and awareness of the LIS data centre and documentation centre for the purpose of fulfilling the objectives of the study. It is observed from

table 1 that 88.1% of the respondents knew about the LIS profession while 13.4% knew about the data center, Documentation center. On the other hand 2(3%) don't know about these terms.

Table.1 Awareness about DC, DocC & LIS profession

Awareness	Number	Percentage
LIS Profession	59	88.1
Data Centre	9	13.4
Documentation center	9	13.4
Don't Know	2	3

Sources of knowing about LIS Profession: The table 2 crystallized what sources are vibrant about the knowledge of LIS profession. It shows that the college is more relevant than any other as the 58.8% of the students know about the profession from the Bareilly College. While 13% from social media, 11% from family ,10% from friends , 8% from Newspaper and 5% came to know about the profession from any other sources.

Table.2 Source of knowing about LIS Profession

Sources	Number	Percentage
Family	11	16.2
Friends	10	14.7
Social Media	13	19.1
News Paper	8	11.8
College	40	58.8
Any other	5	7.4

Causes of Changing shift of Libraries: it is observed from the table 2 that 29.4% of the respondents think that the changing pattern of the Libraries is the need for making digital India, 17.6% think that it is the need of the time, 14.7% are saying that it is the impact of the nationwide lockdown due to covid 19 pandemic.16.2% feel that changing shift is the result of the technology and innovations and 58.8% respondents think that all the above are result/impact of the changing pattern of the libraries.

Table.3 Causes of Changing shift of Libraries

Impact/result of	Number	Percentage
Nationwide Lockdown due to COVID 19 Pandemic	10	14.7
Need for Digital India.	20	29.4
Technology and Innovation	11	16.2
Demand/Need of Time	12	17.6

All of above	40	58.8

Which Library system needs to require more changes? : 15(22.1%) respondents wanted that public libraries required more changes 14(20.6%) wanted research libraries which are being followed by academic and special libraries i.e. 13(19.1%) & 7(10.3%). While overall 49(72.1%) want that all of the above libraries need to require changes for the Sustainable Development and Innovation in making atma nirbhar bharat.

Table.4 Library system needs to required more changes

Type of Library	Respondents	Percentage
Academic Library	13	19.1
Public Library	15	22.1
Research Library	14	20.6
Special Library	7	10.3
All of above	49	72.1

[Note: Sample size from table 1 to table 4 is more than the original as the questions were multiple choices.]

Govt.'s Initiative towards Sustainable Development and Innovation towards Atma Nirbhar Bharat in the field of education: 43(65.2%) respondents know about the National digital library, 29(43.9%) know about e-pathshala , 19(28.8%) know about the National Repository of Open Educational Resources developed by CIET,NCERT. 16(24.2%) and 15(22.7%) of the respondents are aware about the DIKSHA and SWAYAM. Only 10(15.2%) are aware about the NISHTHA and SWAYAM PRABHA.

Graph.1 Govt.'s Initiative in Sustainable Development and Innovation(in education sector)

66 responses
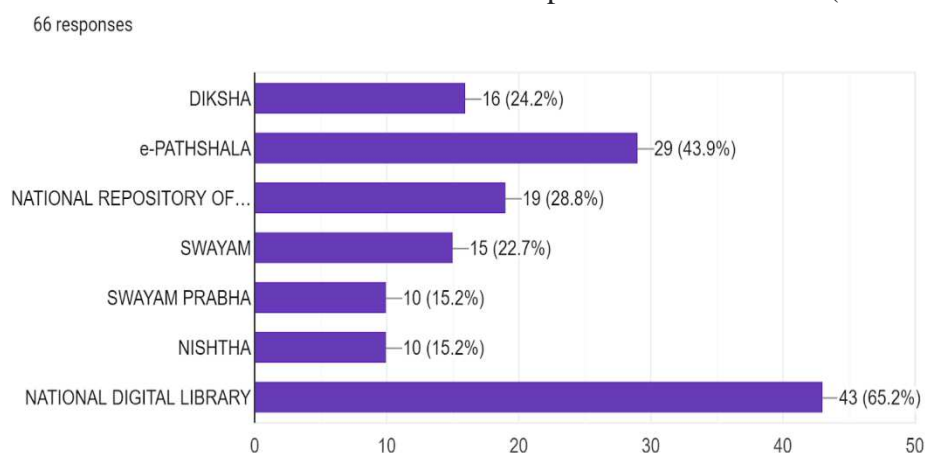
Problem facing while accessing the online libraries: we can observe from the graph 2 that 26(38.8%) respondents facing the not open access of the resources, 20(29.9%) facing the language problem, 17(25.4%) feel that they are not compatible to access the online library,15(22.4%) think that contents on online library not updated timely and 9(13.4%) respondents are not interested to read through online library.

Graph.2 Problem facing while accessing the online libraries
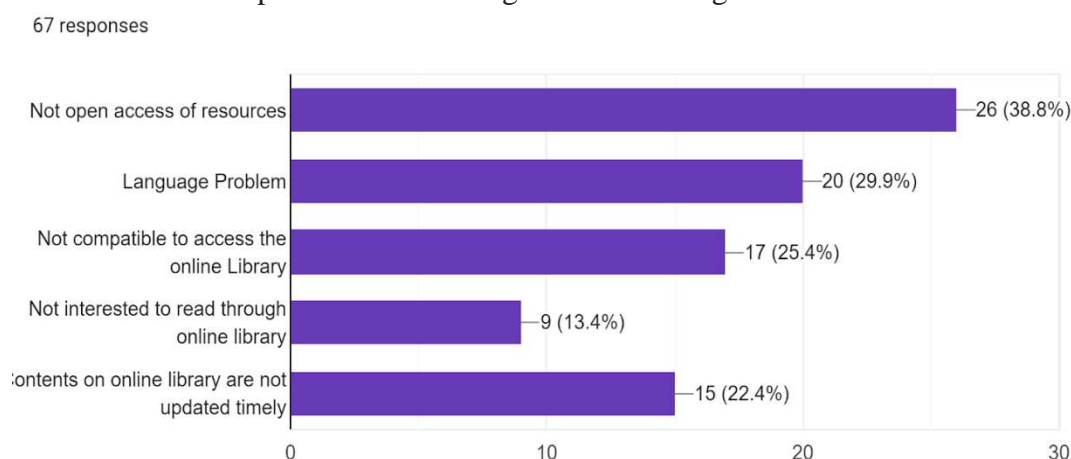
Suggestions

1. This is the time when almost the population is directly or indirectly affected by the COVID 19 pandemic, So it is required to develop such a library system which can be useful for those students who are preparing for the competition examination.
2. Awareness of online resources should be created at a large scale among the public.
3. Several skill developments programs like PMGDISHA, UP skill development etc, must be endorsed fully by the services of libraries so that they can achieve its objectives. It would be a bridge to making Atma Nirbhar citizen, which leads towards Atma Nirbhar Bharat.
4. Library and information science uses tools of management Information technology pedagogy. So if we strengthen the discipline many would automatically benefit.
5. Huge upsurge and sensitization is needed in digital learning for making Atma Nirbhar Bharat.

Conclusion -We have seen that recently GOI provided various financial help as well as with the help of different think tank, developed various indigenous works like policy making for new education, creating digital environment for learning to achieve Sustainable Development and Innovation in Atma Nirbhar Bharat. On the other hand we are observing that instead of lots of digital data, information are available through various data centers, documentation Centre and web and also govt. is doing continuous efforts for sustainable development but what is need more to develop the framework or some innovative strategies so that reading and optimum use can be possible of these resources.

References

1. Raju, N. G. (2010). Use and user awareness of E-resources in Andhra University library: A study. *PEARL: A journal of Library and Information Science*, *4*(3), 183-188.
2. Thanuskodi, S. (2011). User awareness and use of e-journals among education faculty members in Chennai: A survey. *International research: Journal of library and information science*, *1*(1).
3. Ranganathan, S., & Babu, K. S. (2012). Awareness and use of library information resources and services in Osmania University, Hyderabad. *International journal of library and information studies*, *2*(3), 42-54.

4. Gupta, R. K., Gautam, J. N., & Khare, V. P. (2015). Awareness and use of social media applications among library staff of power sector organizations. *Annals of Library and Information Studies (ALIS)*, *61*(4), 320-331.

5. Karnati, Srikanth & Babu, K. (2018). Awareness and Use of e-resources among the Users of University Engineering College Libraries in Andhra Pradesh.

6. Gupta, S., & Garg, S. (2021). National Education Policy–2020: Innovations in Higher Education and Quality Assurance. *THEME FOR AIU ZONAL VICE CHANCELLORS'MEET—2020-21*, *18*, 14. https://www.education.gov.in/sites/upload_files/mhrd/files/inccu_0.pdf

Role of Yoga, physical exercise during menopausal stage for physical and nutritional Status of women

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Abstract:-Physical exercises, yoga therapy, proper balanced diet and nutrition help in upcoming from the menopausal stage and gaining good health and mental stability. Different asana in yoga strengthen and stretch out every muscle in the body. Physically fit and mentally strong women can provide herself and her family better health, life and family status. Studies on dietary intake, physical exercises during post menopausal stage in women determines that physical activities performed by the women are very important, present study focus on post menopausal stage and effect of atmanirbharta amongst the post menopausal women on her physical, mental and family well being. Study focus on work pattern during postmenopausal, stage type of exercise performed, dietary intake and its effect on BMI. Majority of the women are housewives, least cared about physical fitness and dietary intake. Physical fitness not only for her individual but also family and better and comfortable life is essential as these women have still 35 to 40 years active life after the menopausal stage which they can use bitterly in establishing herself in any activity/ business. A group of menopausal women can establish a better enterprise with their confidence and experiences for having their life busy and active and quote example that at this stage also one can well establish himself/ herself with the help of Atmanirbhar Bharat scheme for which women should be physically mentally prepared.

Keywords: Menopause, Dietary Intake, Yoga, Atmanirbhar Bharat

Introduction:-Mr. Narendra Modi the Prime minister of India announced the scheme of Atmanirbhar Bharat in a view to make India self sufficient and physically strong. The negative effects of covid 19 pandemic affected adversely the human life. The physical fitness of housewives remained always the question of debate. In addition to it the menopausal stage is a stage when the reproductive capacity ceases. It brings the fatigue and mental illness amongst the women. Presently about 43 million women in the Indian population are passing through the post menopausal stage which is the big challenge for her and her family as it is associated with chronic health diseases and also some health factors and nutritional deficiencies. Hence the optimal nutrition along with keeping herself physically and mentally fit various means and ways described.Physical exercises, yoga therapy, proper balanced diet and nutrition help in upcoming from the menopausal stage and gaining good health and mental stability. Different asana in yoga strengthen and stretch out every muscle in the body. It helps in decreasing psychological and physiological risk factors in cardio vascular diseases. The women passing through menopausal stage finds difficult to overcome the symptoms of reduced self esteem and self image. Yoga keeps in overcoming the issue for enhancing physical health and self esteem.

Yoga provides source of distraction from daily life and self esteem enhancement for simplicity in regular movements and sharing work responsibilities, depressions and anxieties are reduced through yoga. Such physically fit and mentally strong women can provide herself and her family better health, life and family status. Studies on dietary intake, physical exercises during post menopausal stage in women determines that physical activities performed by the women, controlling BMI and mental activeness.The present study is an attempt to focus on post menopausal stage and effect of atmanirbharta amongst the post menopausal women on her physical, mental and family well being. The present study is planned with the following objectives.

Objectives of the study:-The present study was planned with an objective to focus on:--
1. To study the work pattern during postmenopausal stage of women.
2. To study the type of exercise performed during the day.
3. To study the dietary intake and its effect on BMI during post menopausal stage.

Hypothesis of the study:-

H_0 1 Majority of the respondent women will be housewife.

H_1 1 Majority of the respondent women will be working.

H_0 2 Physical exercise will be least cared during menopausal stage.

H_1 2 Women will be sensitive towards physical exercise during menopausal stage.

H_0 3 Dietary intakes during menopausal stage will be below recommended level.

H_1 3 Dietary intakes during menopausal stage will be below recommended level.

Review of literature:

Guthrie et al (1994) concluded that the general health status of post menopausal women is much affected by her eating habits, habits of smoking, regularity in doing physical exercise and most important is her positive approach and attitude towards her aging process and her menopause.

Kelishaadi et al (2008) revealed that modern lifestyle is very much associated with effortless access to food, lack or very limited exercise performed, sedentary and easy lifestyles, foods dense in calories, excessive exposure to television and other social media have contributed to significantly developing life style disorder diseases inn menopausal women age group.

Khokhar KK et al (2010) and Lambrinoudaki I (2010) concluded that the menopausal average age is 47.5 years. Also there is significant positive association between post menopausal status with higher and greater prevalence of overweight and obesity. Menopausal stage is a stage in every woman's life wherein the capacity of reproduction in women diminishes.

Woodyard C (2011),McCaffrey R, Park J(2012), Sengupta P (2012),concluded that Yoga, which is the traditional Indian body and mind science can be used effectively to cure various health and lifestyle disorders which affect almost all the vital and major organ system of the human body including cardiovascular, neuroendocrine, respiratory, musculoskeletal system and gastrointestinal. Since at menopausal stage these disorders do happen so yoga can prove to be a better option for cure.

Sharma et al (2016) concluded need to focus on the importance of good nutrition, proper diet and exercise on the overall health and well being during menopausal stage of women. Changes altogether in diet, exercise and lifestyle can contribute to living a sound post menopausal life.

Hioki C (2018) concluded that a combination of traditional and approaches which are non traditional of health care for women can be achieved. The yoga can be a complementary approach to rectify the mental symptoms and physical ailments of the menopausal women. Yoga not only has healing effects on health of women but also has holistic affects which to be investigated.

Methodology:-The present study focuses on nature of physical exercise performed by women during post menopausal stage, disease history, 3 days diet recall and body mass index. The study is based on 50 sampled women from Akola and Amravati municipal corporations in Maharashtra state. The study is based on data collected during lockdown period of April 2021.The present study is based on the primary data collected with the help of Google questionnaire. Google form containing information on age, weight, height, work done, type and duration for which exercise performed, diseases if any, dietary information. Google form was circulated through social media group in both the city. The data recorded has been tabulated and analyzed. BMI was calculated as

$$BMI= \frac{weight\ in\ kg}{height\ in\ (m)^2}$$

The data collected has been tabulated on excel worksheet was calculated on the basis of 3 days diet recall method and was compared with age specific requirement with the help of Z test.

Z calculated=| Recommended consumption intake- Actual score|

S. E

If Z calculated > Z table then Ho: is accepted.

Result and discussions:-The main aim of the study was to find out the physical and nutritional status of selected menopausal women. The data collected through Google form was analysed and is presented below under different sub headings.

The following table presents the distribution of respondent women according to their age.

Table 1.1 Distribution of menopausal women according to their age

Sr. No	Particulars	Frequency	Percentage
1	Below 45 years	13	26
2	45 to 50 years	35	70
3	50 years and above	2	4
	Total	50	100

The menopausal stage was reached amongst 27% respondent women below 45 years. The majority of 70% respondent women's menopause was at natural stage at 45 to 50 years. Only 4% respondent women crossed the age of 50 years.

Table 1.2 Distribution of menopausal women according to their BMI

BMI is a very important indicator of the weight status of an individual. Depending on the BMI value calculated the respondent women are classified in to 4 categories i.e. underweight, normal, overweight and obese. The anthropometric measures of height and weight were used to calculate BMI of individual respondent women.

The following table shows the distribution of respondent women according to their BMI.

Sr. No	Particulars	Frequency	Percentage
1	Underweight < 18.5	0	0

2	**Normal 18.5 to 24.9**	24	48
3	**Overweight 25 to 29.9**	15	30
4	**Obese > 30**	11	22
	Total	50	100

The distribution according to BMI concludes that 48% respondent women are in the range of normal BMI, 30% are in overweight category i.e. BMI 25 and above but below 30, 22% of respondent women are passing through grade 1 obesity.

Table 1.3 Distribution of menopausal women according to their occupation

The responses of the respondent women according to the type of job they are doing is recorded, analysed and tabulated in the following table to find out the work pattern of the respondent women.

Sr. No	Particulars	Frequency	Percentage
1	House	39	78
2	Labour	4	8
3	Business	1	2
4	Job	6	12
	Total	50	100

The sampled women are majority (78%) are housewives while 12% are working women.

Table 1.4 Distribution of menopausal women according to the type of exercise performed daily

To maintain a healthy style different types and forms of exercise are being practised. The responses on the type of exercise being performed by the respondent women is analysed and tabulated in the following table to find out the awareness about physical fitness in the women.

Sr. No	Particulars	Frequency	Percentage
1	Yoga	5	10
2	Walking	22	44
3	Other	2	4
4	No exercise	21	42
	Total	50	100

The physical exercises selected by women passing through menopause were walking by 44%, and yoga by only 10% respondent women.

Table 1.5 Distribution of percentages of menopausal women according to their dietary intake

The role of proper balanced diet is very important in anyone's life. With this view the diet consumed in 3 days was recorded to calculate the average consumption of different nutrients. The average of the consumed nutrients was compared with the recommended values and was classified in to three groups of consumption below recommended level, up to recommended level and above recommended level. The following table shows the distribution of respondent women according to their dietary intake.

Sr. No	Particulars	Calories		Proteins		Fats		Vit A		Vit C		Vit D		Calcium		Iron		Carbohydrates	
1	Below recomme	38	76	33	66	0	0	19	38	20	40	24	48	44	88	0	0	36	72

	nded																		
2	Up to recommended	5	10	13	26	7	14	19	38	23	46	13	26	3	6	3	6	11	22
3	Above recommended	7	14	4	8	43	86	12	24	7	14	13	26	4	8	47	94	3	6

The consumption pattern indicated that majority of respondent women had calorie, protein, calcium and carbohydrate consumption below recommended level. While 86% respondent women consumed fat and 94% iron more than recommended level.

Table 1.6 Correlation analyses on selected parameters

Age	BMI	Calorie	Protein	Fats	Vitamin A	Vitamin C	Vitamin D	Iron	Carbohydrates	Calcium
1										
-0.04336	1									
-0.24869	0.400448**	1								
-0.23633	0.297955*	0.748357**	1							
0.257077	-0.0667	-0.07581	-0.30828*	1						
-0.23128	-0.08971	-0.0058	0.021392	0.002133	1					
0.266572	-0.16634	-0.50226**	-0.37006**	-0.02546	0.004173	1				
0.098272	0.149355	-0.15157	-0.26069	0.183014	-0.21684	-0.27816	1			
-0.14639	-0.0959	0.015605	0.374693**	-0.24341	-0.06255	0.002529	-0.16413	1		
0.141949	-0.07943	0.112063	0.169066	0.014095	-0.28851*	-0.10012	-0.06198	0.188201	1	
-0.17333	0.078694	0.362377**	0.333806*	-0.46695**	0.275143	0.04412	-0.4463	-0.08879	-0.03494	1

(Significant at 5% level of significance: *, Significant at 1% level of significance: **)

The relational analysis between dietary intake, BMI and age concluded that significantly higher intake of calorie and protein resulted in increasing BMI and there by obesity amongst menopausal women.

Table 1.7 Z values

Particulars	Calorie	Protein	Fats	Vitamin A	Vitamin C	Vitamin D	Iron	Carbohydrates	Calcium
Stand	1788	67.07	89.43	700	75	15	8	290.65	1200
Actual	1428.14	56.994	127.832	679.392	68.976	14.548	13.2212	265.5	975.4
SE	37.48076	1.221466	2.568388	18.99405	1.843057	0.492873	0.307967	3.746278	14.60773
Z value	9.601**	8.2**	14.951**	1.084NS	3.268**	0.917NS	16.953**	6.713**	15.375**

The findings based on mean dietary intake of respondent women compared with normal/ standard values indicated consumption of vitamin A and vitamin D was at par with the standard values while fats, iron intake was significantly higher than the standard values while the calorie, protein, vitamin C, carbohydrate and calcium consumption was significantly lower than recommended values. Concluding advice is needed on proper dietary intake to maintain physical as well as mental fitness.

Conclusions:-The above findings arrive to the conclusions that:

Majority of the women are housewives, least cared about physical fitness and dietary intake. Physical fitness not only for her individual but also family and better and comfortable life is essential as these women have still 35 to 40 years active life after the menopausal stage which they can use bitterly in establishing herself in any activity/ business. A group of menopausal women can establish a better enterprise with their confidence and experiences for having their life busy and active and quote example that at this stage also one can well establish himself/ herself with the help of Atmanirbhar Bharat scheme for which women should be physically mentally prepared.

Hence the null hypothesis statement majority of the respondent women are housewife is accepted. The other null hypothesis physical exercise was least cared during menopausal stage. The third null hypothesis dietary intakes during menopausal stage were below recommended level is partially accepted.

References

1.Guthrie JR, Smith AM, Dennerstein L, Morse C (1994). Physical activity and the menopause experience: A cross-sectional study. *Maturitas.* 1994;20:71–80. [PubMed] [Google Scholar]

2.Hioki C (2018) Yoga for Menopausal Women. J Yoga Phys Ther 8: 285. doi:10.4172/2157-7595.1000285

3.Kelishadi R, Alikhani S, Delavari A, Alaedini F, Safaie A, Hojatzadeh E, et al (2008). Obesity and associated lifestyle behaviours in Iran: Findings from the first national non-communicable disease risk factor surveillance survey. *Public Health Nutr.* 2008;11:246–51. [PubMed] [Google Scholar]

4.Khokhar KK, Kaur G, Sidhu S (2010). Prevalence of obesity in working premenopausal and postmenopausal women of Jalandhar district, Punjab. *J Hum Ecol.* 2010; 29:57–62 [Google Scholar]

5.Lambrinoudaki I, Brincat M, Erel CT, Gambacciani M, Moen MH, Schenck-Gustafsson K, et al.(2010) EMAS position statement: Managing obese postmenopausal women. *Maturitas.* 2010;66:323–6. [PubMed] [Google Scholar]

6.McCaffrey R, Park J. The benefit of yoga for musculoskeletal disorders: A systematic review of the literature. *J Yoga Phy Ther.* 2012;2:122. [Google Scholar]

7.Sengupta P. Health impacts of yoga and pranayama: A State-of-the Art Review. *Int J Prev Med.* 2012;3:444–58. [PMC free article] [PubMed] [Google Scholar]

8.Sharma S, Aggarwal N, Joshi B, Suri V, Badada S (2016). Prevalence of metabolic syndrome in pre- and post-menopausal women: A prospective study from apex institute of North India. *J Midlife Health.* 2016;7:169–74. [PMC free article] [PubMed] [Google Scholar]
9.Woodyard C. Exploring the therapeutic effects of yoga and its ability to increase quality of life. *Int J Yoga.* 2011; 4:49–54. [PMC free article] [PubMed] [Google Scholar]

A STUDY TO ASSESS THE EFFECTIVENESS OF HEALTH EDUCATION IN REGARD TO KNOWLEDGE AND ATTITUDE ON HIV/AIDS AMONG MIGRANT WORKERS AT JABALPUR MADHYA PRADESH

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ABSTRACT:-AIDS represents Acquired Immune Deficiency Syndrome. It is actually that condition that debilitates the body framework. It is that the last phase of disorders that followed an illness is alluded to as the Human Immunodeficiency Virus (HIV or AIDS contamination). A descriptive research was done to evaluate the effectiveness of health education in terms of knowledge and attitude on HIV/AIDS among migrant workers at Jabalpur Madhya Pradesh among 300 Migrant Workers using a knowledge questionnaire and attitude scale on HIV/AIDS. Data was analyzed by using inferential and descriptive statistics. Findings showed that mean age of migrant workers was 1.73years SD ($\pm$0.896), St. Error .05 and range3.00. And religion of migrant workers mean was 1.55 SD ($\pm$1.142) however mean of marital status 1.620 SD ($\pm$0.550) and range 2.00. Mean educational qualification of migrant workers was 2.65 SD ($\pm$1.24) range 4.00. But monthly income mean was 3.22 SD ($\pm$0.728) St. Error 0.042.and family type of migrant workers mean was 2.05 SD ($\pm$0.865) however how many sex partners do you have mean was 1.056, SD ($\pm$0.306), range 2.00. But which method of contraceptive you use while having sex mean was 1.233 SD ($\pm$0.553), range 3.00. Results further showed that out of total 300 migrant workers, 249 (83%) had average knowledge, 37(12.33%) had poor Knowledge, and only 14 (4.66%) had good knowledge in pretest whereas 277(92.33%) had good knowledge, 23(7.66%) had average knowledge in post test. Regarding pretest attitude majority 155 (52%) had fair attitude, 115 (38. %) had good attitude, and only 30 (10%) had poor attitude whereas Majority of post-test attitude of migrant workers were 231 (77%) had positive, 68 (22.66%) had fair and only one (0.33%) had poor attitude. Thus, proves the effectiveness of the intervention.

Keywords :-Migrants, HIV/AIDS, Contraceptives, Assess, Health education.

Introduction:-Acquired Immune Deficiency Syndrome (AIDS) was initially seen, represented and believed to be a thing that does not require any clinical treatment. The reports supported associated uncommon increase within the incidence which was thought that they were happen to anyone ever. Whereas each disease often ascertained in a large group of people, the incidence of such diseases as they showed more severe immunological disorders which were never observed earlier in any healthy people. As the outcome all the influenced population included those men who had physical relations with same sex i.e. men only. However' at the first way and the movement factors were measured to be causally associated, at long last in 1983 the human immunodeficiency infection (HIV) was known on the grounds that the genuine clarification for AIDS.A descriptive research was done to evaluate the effectiveness of health education in terms of knowledge and attitude on HIV/AIDS among migrant workers at Jabalpur Madhya Pradesh among 300 Migrant Workers using a knowledge questionnaire and attitude scale on HIV/AIDS.

Objectives :

The present study aimed to:
- To assess the knowledge regarding HIV/AIDS among migrant workers.
- To assess the attitude regarding HIV/AIDS among migrant workers.
- To assess the effectiveness of health education on HIV/AIDS among migrant workers.

- To find out the association between existing knowledge regarding HIV/AIDS and selected demographic variables of migrant workers.
- To find out the association between attitude regarding HIV/AIDS and selected demographic variables of migrant workers.

Methodology:-In this examination Explorative design was utilized. 300 migrant workers in hotels, mine and factory Jabalpur Madhya Pradesh were selected from non probability convenient sampling technique. The dependant variable within the present study included knowledge and attitude on HIV/AIDS among migrant workers whereas the freelance variable is health education on HIV/AIDS among migrant workers

Sampling Criteria:-The following criteria are set to select samples:

Inclusion Criteria
1. Migrant workers who can read and understand Hindi, English language.
2. The study was limited to Migrant workers only.
3. Migrant workers having 18 to 60 age group
4. The study was limited only to those Migrant workers who were willing to participate in this study.
5. The study was limited to Migrant workers hotels, mine and factory in Jabalpur, Madhya Pradesh.

Exclusion criteria
1. Migrant workers who were not willing to participate.
2. Migrant workers whose are mentally unstable
3. Migrant workers whose are not willing to participate study
4. Migrant workers whose are not present the time of data collection
5. Migrant workers those who can't understand Hindi/ English

Data collection Tool:-The data collection is the procedure and instrument used by the researcher to observe or measure the key variables in the research problem." (Polit and hungler,1999)

The tools used in this study are:

1. Socio demographic data.
2. Prepared multiple choice questionnaires to assess the knowledge and attitude regarding migrant worker related to HIV/AIDS.
3. Power point presentation slide and handout assisted teaching programme on migrant worker related to HIV/AIDS

Results:-Findings regarding demographic allotment of the sample according to various statistical criteria concluded that mean age of migrant workers was 1.73years SD (±0.896), St. Error .05 and range3.00. And religion of migrant workers mean was 1.55 SD (±1.142) however mean of marital status 1.620 SD (±0.550) and range 2.00. Mean educational qualification of migrant workers was 2.65 SD (±1.24) range 4.00. But monthly income mean was 3.22 SD (±0.728) St. Error 0.042.and family type of migrant workers mean was 2.05 SD (±0.865) however how many sex partners do you have mean was 1.056, SD (±0.306), range 2.00. But which method of contraceptive you use while having sex mean was 1.233 SD (±0.553), range 3.00.Analysis of knowledge among migrant workers regarding HIV/AIDS showed that majority of pre-test knowledge of migrant workers samples 249 (83%) had average knowledge, 37(12.33%) had poor Knowledge, and only 14 (4.66%) had good knowledge about but Majority of post-test knowledge of migrant workers samples 277(92.33%) had good knowledge, 23(7.66%) had average knowledge. Comparison between pre-test and post-test knowledge of migrant workers

showed that the knowledge enhanced after administration of planned teaching program. Finding related to assessment of attitude showed that the pretest attitude of majority of studied migrant studied 155 (52%) had fair attitude, 115 (38. %) had good attitude, and only 30 (10%) had poor attitude whereas Majority of post-test attitude of migrant workers were 231 (77%) whereas 68 (22.66%) had fair attitude. The study found that the intervention used in the study i.e. Health Program was quite effective in enhancing the knowledge of migrant workers regarding HIV/AIDS. It was found that mean post-test knowledge score (28.42) is apparently higher than the mean pre-test knowledge score (16.22). The dispersion the post-test score (SD ±2.317) is more than that of their pre-test scores (SD ± 3.863) and the Effectiveness of attitude of migrant workers assessed by applying t-test. In this case the computed value (t=7.82) is higher than critical value (1.962) this means there is considerable difference This clearly indicates that the used planned teaching program is effective in enhancing knowledge of migrant workers. Further it was also found by the researcher that the intervention used in the study is effectiveness in changing the attitude of the migrant workers as mean post-test attitude score (50.31) is apparently higher than the mean pre-test attitude score (37.51). The dispersion the post-test score (SD ±4.191) is more than that of their pre-test scores (SD ± 4.444) and the Effectiveness of attitude of migrant workers assessed by applying t-test. In this case the computed value (t=7.82) is higher than critical value (1.962)this indicates that planned teaching program is effective in increasing attitude of migrant workers. The correlation between pre-test knowledge and attitude of the migrant workers assessed by Pearsons correlation method. The result indicates that mean pre-test knowledge (16.22) is apparently higher than the mean pre-test attitude score (37.51). The dispersion the pre-test score (SD ±3.863) is more than that of their pre-test scores (SD ± 4.444) and the correlation between knowledge and attitude of migrant workers assessed by applying t-test. In this case the computed value (r=0.484) is higher than critical value (1.962) this means there is considerable difference This indicates that planned teaching program wass effective in increasing knowledge of migrant workers. The study found the association between knowledge scores and attitude scores regarding HIV/AIDS with the demographic variables of selected migrant workers at 0.05% level of significance. Demographic variables were statistically tested by applying chi-square test. The variables Religion, Family type, method of contraceptive were found considerable. The variables age, marital status, Educational qualification, Monthly income How many sex partner, were not found considerable. Hence objective no.4 (To find out the association between existing knowledge regarding HIV/AIDS and selected demographic variables of migrant workers) is fulfilled and H_2 (There will be a considerable association between existing knowledge and selected demographic variables of study subject) is accepted.The demographic variables Religion, Family type, method of contraceptive used found considerable associated with attitude score. The variables age, marital status, Educational qualification, Monthly income How many sex partner, were not found considerable. Hence objective no.5 (To find out the association between attitude regarding HIV/AIDS and selected demographic variables of migrant workers) is fulfilled and H_3 (There will be a considerable association between attitude and selected demographic variables of study subject) is accepted.Present study was undertaken to find the existing knowledge and prevailing attitude regarding HIV/AIDS among migrant workers. Statistical Analysis was performed by using frequency, Percentages. Out of total 300 migrant workers, 249 (83%) had previous knowledge on HIV/AIDS. After post test knowledge 277 (92.33%) Total pre test positive attitude 155 (52%) and post test attitude 231 (77%) of migrant workers   HIV/AIDS disease/ patient.On the basis of obtained findings the Present study lays the conclusion that the existing knowledge score among

studied migrant workers of Jabalpur (M.P.) city regarding HIV/AIDS as evaluated by conducting a pre test for knowledge was average whereas for attitude level was fair after administration of intervention the acquired post test knowledge score showed better outcomes that means good knowledge score and also attitude level was better as compared to pretest score.

Study also showed that in post test studied migrant word migrant workers had positive correlation between knowledge and attitude which means migrant workers with good knowledge also have good attitude regarding prevention of HIV/AIDS good knowledge toward HIV/AIDS patient.

Conclusion:-HIV/AIDS is an intricate issue and individuals keep on being tainted in spite of HIV/AIDS projects and intercessions, thusly those endowed with HIV/AIDS Programs should not proceed with the normal, worn out deterrent intercessions. Representatives come from a local area to work and return to a local area where they stay and mingle, consequently one ought not tight the HIV/AIDS Program by taking a gander at the working environment, but instead takes a gander at the more extensive local area to address hazard factors by society. Conventional HIV/AIDS precaution projects to create and embrace approaches that are contemporary must be undertaken, This applies to all HIV/AIDS Program caretakers. All the more should be done with respect to social change at local area level as people's mentality and hazard practices are affected by socially built cultural standards, qualities, and convictions.The present study was undertaken with the aim to assess the effectiveness of health program on enhancing the knowledge and modifying the behaviors and attitude of migrant workers regarding HIV/AIDS. The study found the selected Health program effective and hit the set goals. Overall experience of the researcher was satisfying. Samples of the study supported and contributed to the successful contribution of the study.

REFERENCES
1. Allender, Spradley. Community health Nursing, 5[TH]ed place of publication, Lippincott; 2004, p No.270.
2. Basavanthappa B.T Nursing Research. 1st ed. New Delhi: jaypee Brothers; 1998. p No.93-110, 127-135.
3. Basavanthappa B.T Nursing Theories. 1st ed. New Delhi: jaypee Brothers; a 1997. p No.384-388.
4. BasavanthappaB.T,Community health Nursing, 1st ed. New Delhi: jaypee Brothers; 1998. p No..502-509.
5. Shebeer.P.BasheerS.Yaseen Khan, Text Book of Advanced Nursing Practice.1st ed. EMMESS Medical Publishers. 2012.p 324-336.
6. Neelam Kumari Essentials of Community Health Nursing 1st ed. Pee Vee Book. 2011.p 335-347

Migrants and HIV

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Abstract:-Movement is a cycle. Development is upgraded via air transport, rising worldwide exchange, liberation of exchange practices, and opening of lines. Examination is required on the part of movement in the spread of HIV, the degree of relocation, accessibility of wellbeing administrations, and alternatives for HIV anticipation. Examination should be activity arranged and zeroed in on weakness to HIV and hazard taking conduct. There is considerable versatility in West and Central Africa, monetary relocation in South Africa, and non-voluntary movement in Angola. Sex laborers in Southeast Asia add to the spread. The separation of the USSR prompted populace shifts. Transients in Central America and Mexico move north to the US where HIV pervasiveness is higher.HIV hazard among transients fluctuates across relocation stages (pre-flight, travel, objective, interference, and return), yet there is restricted information about explicit sexual practices, qualities of sexual accomplices, and sexual settings at various movement stages. Data on movement stage and last sexual experience was gathered from 1,219 male travelers. Our discoveries proposed that contrasted with pre-flight transients, rehash travelers getting back from networks of beginning were bound to have intercourse with male accomplices, use substances before sex, and not use condoms; travelers with a new stay were bound to have intercourse with easygoing accomplices and sex laborers; and transients in the block attempt stage were bound to participate in butt-centric sex and use substances before sex. Sexual practices, accomplices, and settings shift altogether among transients at various relocation stages. Custom-made HIV avoidance programs should be created and executed at all relocation stages.

Keywords :-Transients, Accessibility, HIV, Hazards, butt-centric.

Introduction:-Numerous folks living with HIV/AIDS stand up to separation and defamation. Social minorities, like outcasts and inside uprooted people (IDPs), who are as of now experiencing removal, destitution and food instability, are additionally regularly focuses of segregation. This segregation can consolidate into far and away more terrible structures when have social orders mistakenly accept that HIV/AIDS is spread by settlers. Movement is a cycle. Development is upgraded via air transport, rising worldwide exchange, liberation of exchange practices, and opening of lines. Developments are confined by laws and resolutions. Forswearing to unreservedly flow and get haven is related with weakness to HIV diseases. An UNAIDS strategy paper in 1997 and IOM strategy rules in 1988 insist that exiles and shelter searchers ought not be focused for unique measures because of HIV/AIDS. There is a pressing need to give essential wellbeing administrations to travellers, wilful directing and testing, and more good conditions. Examination is required on the part of movement in the spread of HIV, the degree of relocation, accessibility of wellbeing administrations, and alternatives for HIV anticipation. Examination should be activity arranged and zeroed in on weakness to HIV and hazard taking conduct.

Characteristics:-There are four significant types of

Relocation: intrusion, success, colonization and resettlement/migration. People moving from their home because of constrained uprooting (like a cataclysmic event or common aggravation)

might be portrayed as dislodged people or, if staying in the nation of origin, inside dislodged people. Inward relocation: moving inside a state, country, or mainland. Outer movement: moving to an alternate state, country, or landmass. Displacement: leaving one nation to move to another. Migration: moving into another country. The qualities are (I) most travelers are guys, (ii) they are dominatingly youthful grown-ups, (iii) they are preferred taught over the overall rustic populace however less so than their metropolitan partners, and (iv) financial intentions prevail their choice to move, albeit this is tempered by a progression of different components.

Impact of migration:-One type of oppressive measures is travel prohibitions on individuals with HIV/AIDS, which presently are feeling the squeeze. The US lifted migration screening on HIV in 2010. In July 2012, Republic of Korea additionally reported that movement boycott for foreigners with HIV/AIDS had been taken out, in spite of the fact that it has been condemned that there were no genuine changes made from that point forward. The U.S.- Mexico line is the most visited movement way on the planet, with roughly 350 million lawful intersections and around 420,000 fears of unlawful intersections every year . Starting at 2013, around 11.6 million Mexican transients lived in the United States, addressing by a wide margin the biggest foreigner gathering in the nation . Among them, about 29% participate in round relocation, over and again crossing the line for business, family reunification, and different reasons.Populace developments assume a basic part in the transmission and movement of illnesses across various areas, including HIV diseases. Travelers are viewed as an expected extension for HIV transmission, as they connect populaces with various predominance levels . Studies have shown that relocation related underlying and relevant components, for example, being away from home, destitution, helpless everyday environments, disengagement, portability, restricted admittance to medical care and HIV avoidance assets, more liberal standards in regards to sex practices and medication use are related with an expansion in hazard for HIV/AIDS among transients. Travelers have revealed higher paces of sexual danger practices, including having various sexual accomplices, having intercourse with easygoing accomplices and business sex laborers, contrasted with their friends who won't ever move. The previous are additionally bound to utilize unlawful medications contrasted with people without a background marked by movement. A more complete comprehension of the HIV avoidance needs of transients is expected to coordinate new HIV counteraction and control projects of high effect for travelers crossing the line. Effective decrease in HIV occurrence is critical particularly considering the size of traveler populace occupied with round transitory examples.As of late, Zimmerman proposed to see movement as an unpredictable cycle that happens in five stages: pre-takeoff, travel, objective, capture, and return. These stages are not fundamentally unrelated and transients can enter all through stages on numerous occasions for various reasons. Travelers are probably going to confront a huge number of conditions with hazard inciting and defensive elements while in various periods of the relocation interaction. The Behavioral Ecological Model (BEM) speculates that wellbeing practices are dictated by staggered factors, including individual, relational, local area and society-level components. Applying this model to HIV hazard, the BEM predicts that hazard taking practices may change during the relocation interaction as travelers' are presented to various primary and relevant components in each stage. This theory has been upheld by past examinations inspecting sexual conduct and substance use among travelers across movement stages.

Project Migrante:-Project Migrante was a binational project between the U.S. also, Mexico and it pointed toward expanding comprehension of the variables impacting HIV hazard and medical

care use among Mexican transients guided by the BEM. Migrante comprised of a progression of likelihood overviews of Mexican transients going through the Mexican line city of Tijuana somewhere in the range of 2007 and 2015. Tijuana was chosen since it alone thinks about 30% of the transients that movement among Mexico and the U.S., with vacillations over the long run. Transients were enrolled from four particular movement streams that address distinctive spatial directions and incorporate travelers at various relocation stages.The 2009–2010 HIV Migrante study gathered data on transients' last sexual experience at their latest movement stage. These information give a depiction of the qualities of transients' sexual accomplices, the particular sorts of sexual practices they participate in, and the settings wherein sexual practices occur. Utilizing these information, we tried to develop our insight into HIV chances across movement stages among male Mexican transients. Because of the little size of the female subsample, this current investigation was confined to guys. In light of the BEM and past research, this examination expected to test the accompanying explicit speculations:

Contrasted with pre-flight travelers, those at post-movement stages will report a less secure last sexual accomplice (female easygoing accomplices, female sex laborers, and male accomplices, contrasted with female stable accomplices) and a higher probability of participating in unprotected sex with these accomplices during the last sexual occasion; Closeness (for example admittance) to consistent accomplices, like companions and heartfelt accomplices, will anticipate the kind of collaborate with whom transients engage in sexual relations and the probability of having hazard practices; and the attributes of the last sexual accomplice (for example HIV status, infusion drug use, and so on) and setting of the last sexual occasion (for example place where sex happens, utilization of medication and liquor, and so on) will be related with hazard practices during the last sexual occasion.

Measures:-Qualified and consenting overview respondents finished an unknown survey managed by a prepared questioner utilizing Questionnaire Development System programming (QDSTM ACASI) on a PC. Socio demographic and relocation attributes Respondents were gotten some information about socio demographic factors (age, schooling accomplishment, native identity, and conjugal status), and movement history (time spent in key setting during most recent a year, plan to enter/get back to the U.S., and extradition history).Last sexual accomplice a segment of the review asked about the members' last sexual accomplice in the critical setting during the previous year. Data was gathered on the accomplice's sex and kind of relationship (stable accomplices, easygoing accomplices, sex laborers). Female stable accomplices are characterized as ladies whom review members had a sexual relationship with just as passionate or close connection, like a spouse or sweetheart. Female easygoing accomplices are characterized as ladies with whom members engaged in sexual relations, however with whom members don't have a heartfelt or enthusiastic inclusion, for instance a casual hookup, companions with benefits, sex/screw pals, or ladies with whom members have intercourse 'without any surprises'. Equal definitions were accommodated male accomplices. Notwithstanding, given the modest number of members who announced same-sex rehearses, for this investigation we didn't separate between various kinds of male accomplices. The members likewise detailed the last accomplice's socio demographic factors (age, identity, nation of beginning), HIV hazard factors (infusion drug use, HIV status, having other simultaneous sexual accomplices), and relationship history. The last remembered the setting for which they met (country, scenes, through whom they had met), time before their first sexual experience, and kinds of sexual practices at any point occupied with this accomplice.Last sexual occasion

Respondents were likewise interrogated regarding the last sexual occasion with the last accomplice. In particular, travelers announced sexual works on during the last sexual occasion (vaginal, butt-centric, and oral), and whether they utilized condom for each sort of sexual practice (yes/no). In light of these review things, we made a twofold factor to demonstrate unprotected vaginal or potentially butt-centric sex (0=used a condom reliably for vaginal and additionally butt-centric sex, and 1=did not utilize a condom reliably). Data was additionally gathered on where the sexual occasion occurred (home, lodging, and so on), and whether they burned-through liquor and unlawful medications before the occasion (yes/no).

Implication for practice:-This examination has significant ramifications for general wellbeing endeavors expecting to forestall HIV disease among travelers. Because of the great portability of this populace, this issue merits consideration and venture to reduce the spread of HIV among transients and their accomplices. In the first place, transients at all movement stages are needing mediations advancing condom use while having vaginal and butt-centric sex, particularly with high-hazard accomplices. When utilized reliably and accurately, condoms are profoundly successful in forestalling HIV and other physically sent diseases. For travelers at high danger for HIV disease and incapable or reluctant to stick to predictable condom use, pre-openness prophylaxis (PrEP) ought to be thought of. Studies analyzing information, agreeableness, and attainability of PrEP as a HIV avoidance technique for travelers should be led. Second, transients at the travel, capture attempt, and return stages are at higher danger for HIV disease than travelers at the pre-takeoff stage. Consequently, escalated general wellbeing projects should target travelers at these three phases. For the over two purposes, intercessions can be done at comparable locales where the Migrante project enrolled members. These areas have demonstrated great locales to arrive at travelers from various movement stages. At present, traveler wellbeing facilities, which have been set up because of the Migrante project study discoveries, give counteraction assets (for example advising, HIV/STI testing, condoms) and essential consideration administrations, to expelled travelers in extradition stations along the line. Such centers ought to likewise be set up in transportation offices to offer types of assistance to more travelers.

Conclusion:-Taking everything into account, our examination of last sexual occasions recommends that male transients at post-movement stages are at expanded risk of having intercourse with high-hazard sexual accomplices and take part in hazard practices for HIV contamination. Varieties in nearness to stable accomplices, attributes of the last sexual accomplice, and setting of the last sexual occasion add to HIV hazard across relocation stages. Custom-made HIV avoidance programs should be created to target transients, especially at post-movement stages. Future examination ought to be more likely describe varieties in sexual organizations related with the various stages and settings of the movement interaction. This exploration should grow the examination to more accomplices to build our comprehension of HIV hazard and transmission among travelers and their sexual accomplices.

Bibliography

1.United Nations, Department of Economic and Social Affairs, Population Division. *International Migration Report 2015: Highlights (ST/ESA/SER.A/375)* 2016. [Google Scholar]

2. Bowsher GM, Krishnan RA, Shanahan TA, et al. Immigration Act 2014 challenges health of migrants in the UK. *Lancet.* 2015;385(9971):852–3. [PubMed] [Google Scholar]

3. Ramirez SM, Villarejo D. Poverty, housing, and the rural slum: policies and the production of inequities, past and present. *Am J Public Health.* 2012;102(9):1664–75. [PMC free article] [PubMed] [Google Scholar]

4. Geltman PL, Adams JH, Cochran J, et al. The impact of functional health literacy and acculturation on the oral health status of Somali refugees living in Massachusetts. *Am J Public Health.* 2013;103(8):1516–23. [PMC free article] [PubMed] [Google Scholar]

5. Rechel B, Mladovsky P, Ingleby D, et al. Migration and health in an increasingly diverse Europe. *Lancet.* 2013;381(9873):1235–45. [PubMed] [Google Scholar]

A Review on Various Techniques for Speech Signal Enhancement

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ABSTRACT:

In telephone conversations communications often take place including noisy environments. Speech is the most important and the effective way of communication among human . The field of speech processing is belongs to the area of signal processing.Speech enhancement is the most important method for improving the speech signal to removal of background noise and echo elimination. In this article reviewed various speech enhancement methods. The Main objective of this paper is focus on removal of noise in speech signals and also reviewed Noise cancellation techniques.

Keywords: Enhancing the Speech signal, Telephone Communication, Removal of Noise, speech signal processing, Echo suppression.

INTRODUCTION:

Speech enhancement is a significant and huge research area in speech processing. The objective of various enhancement algorithms is to eliminate the noise in a noisy signal. The voice signal is always mixied with environmental [1]. In general, noise can be multiplicative , added substance, convolution, narrow or broadband ,and static or non static noise[2].   The field of speech processing is belongs to signal processing techniques to audio signals based on knowledge offered in the hearing sciences field.To get a good performance of Speech system it is important to have speech signals without noise, improved quality. It is not possible to have speech signals without any environmental noise [3].In our surrounding always having some amount of ECHO. To get echoless speech we need acoustically echo less room for capturing the Echoless Speech [4]. The main aim of speech signal enhancement techniques is removing surrounding background noise.Speech enhancement algorithms [5] are used jointly with speech signal recognizers and speech signal coders as front end processing. Front end enhancing to speech recognizers increases the recognition rate and creates a robust recognizer. Same way front end enhancement to speech coding has been to decrease the number of bits necessary to code the voice signal. In this paper overview on the techniques are used in the literature to speech signal enhancement.The paper is organized as, In section 1 gives the introduction and general overview, In Section 2 explains what is the speech enhancement ; section 3 is reviewed with various techniques of speech enhancement followed by conclusion

2.SPEECH ENHANCEMENT:

Enhancement of speech signal is a important step in the area of speech signal processing, it has an objective of improving the quality of speech signal that is to enhance the voice clarity, accessible, crystal clear and intelligibility of speech signal with the help of algorithms. In speech enhancement so many reasons leads to degradation of speech signal. The background noise is captured due to reverberation during recording, babble etc. in speech processing for specific type of applications like cell phone communications, recognition of speaker ,speech recognition, VoIP, hearing aids etc are required clean and noise less speech signals . The speech quality improvement can be achieved by various methods. According to the type noise occurred in the acquired speech signal and degradation the approach to speech improving

varies.

Clean speech

Noise Signal
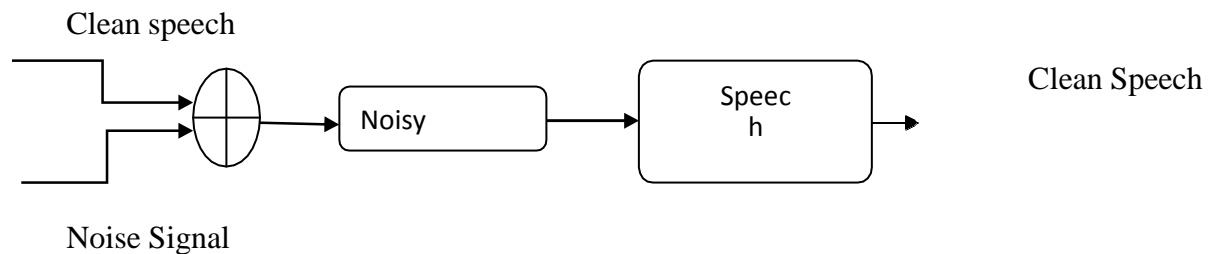
III . SPEECH ENHANCEMENT TECHNIQUES:

Speech enhancement algorithms for removing the noise can be categorized as three fundamental classes:

1. Filtering techniques,

2. Spectral restoration,

3. Speech Model-based methods

1. Filtering techniques classified in to

☐ Spectal Subtaction Method

☐ Wiener Filtering

☐ Signal Subspace Approach

2. Spectral restoration

☐ Minimum Mean Square Error Short Time Spectral Amplitude Estimator(MMSE-STSA)

3. Speech Model Based

According to Loizou [6],speech enhancement techniques are classified based onfollowing:

(1) Adaptive or Non-Adaptive type of the algorithm

(2) single channel, dual channel or multiple input channels

(3) Uni-modal or Multimodal

Adaptive Or Non-Adaptive Type Of The Algorithm:

 ☐ To design Non adaptive filters ,it is need to have prior basic knowledge of both the characteristics of original signal and the noise signal. Thse filters passes frequencies are present in the original signal and avoids the frequency band by the noise.

 ☐ In case of Adaptive filters , the correlated signal component of the speech signal input can adjusting impulse response. No need of prior knowledge of the speech signal and noise

Single Channel, Dual Channel Or Multiple Input Channels::-Single channel enhancement is also called as monaural enhancement; here only one inputchannel is present that is mobile telephone [7]. In multichannel enhancement, from two or more sensors the noise signal observations can be done. In case of 2 channels system, it is called as binaural enhancement. It has two types:

1.Supervised techniques that is NMF, HMM, here based on training samples ,the noise and speech are modeled [8].

2.In Unsupervised techniques no need of training samples are required for exampletransform domain methods/Kalman /Wiener.

Uni-Modal Or Multimodal:

If assume audio is enhanced by using just only hear-able sense,it is called as unimodal sound enhancement. when audio enhncement assumed by a couple of senses like hear-able sense and **visual sense** , then it called as multimodal enhancement.

Popular Techniques Of Speech Enhancement:

Speech enhancement Techniques: basically 4 types

1.Conventional Method: This section discuss with single channel speech techniques

A.Spectral Subtraction: This is oldest method. It is to be consider First algorithms inthisconventionl method [9]. This technique is very simple and effective to removal of stationary background noise.But this method is suffers from Musical Noise (narrow-bandtonal)[10].

1.Spectral Over Subtraction[11]: The given parameters are used to reduce noise "Over-subtraction factor" gives noisy speech signal power spectrum minus amount of noise power spectrum.

" Noise spectral floor" provide threshold point to the output spectral component[12] from above increasing minimum spectral flow value of a preset .

2.Multiband Spectral Subtraction[13]: The Multi-band subtraction is another variety, herethe speech signal spectrum is divided into many non overlapping phases.

3.Non Linear Spectral Subtraction: The Modified version is proposed by lockwood[14],frames SNR plays major role to find subtraction factor,B.Statistical Modal Based

1.Wiener Filtering

a.Original Wiener

b.Adaptive Wiener

2 Maximum Likelihood Method

C.Subspace Speech Enhancement

1.Adaptive Filtering Methods

    A.LMS   Algorithm

    B.RMS Algorithm

2.Machine Learning Methods:

    A.ANN

    B.DNN

    C.CNN

    D.Bayesian & ICA

E.Optimization Methods

1.LPSO

ii.PSOGSA

iii.θ-SSPSO

iv.GSA v.BAT
vi.Modified BAT

3.Multi Modal Methods

Single Channel speech Enhancement techniques
1.**Time Domain Processing**

A.Kalman
B.Adaptive Filter
C.Intelligent Filter (using Optimization)

2.**Phase   plus   Amplitude   Processing**
3.**Supervised Techniques**

A.Decomposition Basedi.NMF

B.Modelling of Speech /Noisei.HMM

i. GMM

4.Transform Domain

A. Spectral Subtraction

B.WaveletTransform
C.Stochastic Estimation
i.Wiener Filter (Linear Estimation)

Non   Linear   Estimation(Gaussian   Priors)
a.MMSE
b.MMSE-LSA
c.MAP
d.ML

D.Super Gaussian Estimate with STFT phase E.Modulation
Domain

IV:CONCLUSION :
To improve the quality of speech signal we use Speech enhancement .In this paper reviewed
and discussed various types of speech enhancement techniques. Also we have reviewed Speech
signal Enhancement with their merits..

REFERENCE

1.Yi Hu and Philipos C. Loizou, "Subjective comparison and evaluation of speech
enhancement algorithms" IEEE Trans.Speech Audio Proc.2007:49(7): 588–601.

2.Kotta Manohar, Preeti Rao, "Speech enhancement in nonstationary noise environments using
noise properties", Journal on Speech Communication, Elsevier, Vol. 48, Pages 96-109, 15
September 2005

3.Chanchal Pandey, Sandeep Nemad, "Distinctive Methods for Speech Enhancement using
Kalman Filtering", International Journal of Computer Applications (0975 – 8887)Volume105 –

No. 5, November 2014.

4.P. Brav in Jose, Mrs. M. Jayasanthi, "Review on Speech Enhancement Techniques", KARPAGAM JOURNAL OF ENGINEERING RESEARCH (KJER), Volume No.: 01, Issue No.: 01. 2014

5.Dr. Shaila D. Apte, "Speech Processing Applications", in Speech and Audio Processing, Wiley India Edition.

6.Philipos C. Loizou. Speech Enhancement: Theory and Practice. CRC Press, Inc., Boca Raton, FL, USA, 2nd edition, 2013.

7.Kumar K Ravi and PV Subbaiah. A survey on speech enhancement methodologies.International Journal of Intelligent Systems and Applications, 8(12):37, 2016

8.Devyani S Kulkarni, Ratnadeep R Deshmukh, and Pukhraj P Shrishrimal. A review of speech signal enhancement techniques. International Journal of Computer Applications, 139(14), 2016.

9.S. Boll. Suppression of acoustic noise in speech using spectral subtraction. IEEE Transactions on Acoustics, Speech, and Signal Processing, 27(2), Apr 1979.

10.Saeed V Vaseghi. Advanced digital signal processing and noise reduction. John Wiley & Sons, 2008.

11.M. Berouti, R. Schwartz, and J. Makhoul. Enhancement of speech corrupted by acoustic noise. In Acoustics, Speech, and Signal Processing, IEEE International Conference on ICASSP '79., volume 4, pages 208–211, Apr 1979.

12.Philipos C. Loizou. Speech Enhancement: Theory and Practice. CRC Press, Inc., Boca Raton, FL, USA, 2nd edition, 2013.

13.Sunil Kamath and Philipos C. Loizou. A multi-band spectral subtraction method for enhancing speech corrupted by colored noise. In ICASSP, page 4164. IEEE, 2002.

14.P. Lockwood and J. Boudy. Experiments with a nonlinear spectral subtractor (nss), hidden markov models and the projection, for robust speech recognition in cars. Speech Communication, 11(2):215 – 228, 1992.

ASSESSMENT OF THE KNOWLEDGE OF ASTHMA AMONGST ADULT ASTHMATICS AND THEIR QUALITY OF LIFE.

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Abstract

INTRODUCTION: Asthma is a chronic respiratory disease that can have varying effects on the quality of life of sufferers. The patho-physiology of asthma involves a circular progression of physical manifestations due to airflow obstruction as a result of inflammation of the airways. The types of inflammation differ between patients, even if the same mechanisms (such as allergy) are involved. Patients now respond differently to a variety of stimuli or, even, the same stimuli at different times. At the same time, the response to treatment can also vary greatly [Kemp 2002:1]. Those who are properly treated, well educated about all aspects of their illness and compliant are less affected . Although the understanding of asthma as a disease and the treatment thereof has grown over the past 20 years, there is still a body of evidence which suggests that asthma is not well controlled in many patients [Evans 1993:685]. Many subjects can identify specific triggers of their symptoms, but they seldom intervene to ensure abolition of symptoms because they have minimal expectations of success from their own initiated efforts. Insufficient knowledge and inappropriate ideas about asthma are considered major barriers to self-management of asthma [Markson,Vollmer,Fitterman, O'Connor, Naranayan, Berger and Buist. 2001:382]. A study done by Gibson, Henry, Vimpani, and Halliday [1995:1003] confirmed the assumption that although people with asthma strongly desire to get information about their illness, they do not want to be responsible for making the prime decisions during episodes of exacerbations.

.**OBJECTIVES OF THE STUDY:**

- ➢ Establish the knowledge of adult asthma sufferers regarding their disease
- ➢ Assess the quality of life of adult asthmatics as measured by a validated disease-specific questionnaire
- ➢ Assess the control of asthma as measured by a validated disease-specific questionnaire
- ➢ Determine any relationship between knowledge regarding asthma, asthma control and quality of life..

Review of literature:-DAVID JOHNSON (2009) conducted a study on occurrence, clinical presentation, diagnosis, treatment and natural history cough variant asthma. Asthma is a common problem among all ages that frequency goes unrecognized pulmonary function as measured by spirometry is often within normal limits, any patient with a non productive nocturnal cough lasting more than two weeks, should receive an empire trial of bronchodilators, whereas for many patients, cough resolves without need for further treatment**.**

ALVES R, (2010) in the studies animal- based remedies constitutes an integral part of brazilian traditional medicine and 34 sources were analyzed. the review revealed that at

least 250 animal species (178 vertebrates and 72 invertebrates) are used for medicinal purposes in northeast of brazil. The number of medicinal species expressive and demonstrate the importance of zootherapy as alternative therapeutic in northeast of brazil including a full inventory of the animal species used for medicinal purposes and the socio-cultural context associated with their consumption.

DOUMA WR, (2010) in his study provides guidelines for asthma management advocate home peak expiratory flow (PEF) monitoring. Since current guidelines on asthma management recommend only bronchodilators on demand, the most useful peak expiratory flow index for reflecting bronchial hyper responsiveness longitudinally is mean within- The use of corrections of peak expiratory flows for the nonlinearity of mini-Wright peak expiratory flow meters does not improve the correlation between peak expiratory flow and bronchial hyper responsiveness.

RESEARCH HYPOTHESES

H1 – there will be significant difference between the pre and post test knowledge scores regarding home management of bronchial asthma.
H2 – there will be significant association between post test knowledge scores with their demographic variables
RESEARCH VARIABLES
a)Independent variable: Deep breathing excise.

b)Dependent variable   : Asthmatic patient.

Research design: A descriptive design.

Research approach: In this study a quantitative evaluate approach

SETTING OF THE STUDY:- The study was conducted in selected Shri B.M. Patil Institutes Medical   college,Hospital and research center Vijayapur .
1.POPULATION:-All the Asthmatic patient.

2.SAMPLE:-All Asthmatic patient admitted in B M Patil Hospital vijayapur Sample size:89.

3.CRITERIA FOR SAMPLE SELECTION

Inclusion criteria:-The study includes:

➢ Patients who are available during the period and data collection.

➢ Asthma patients who are willing to participate in this study.
➢ Those who are able to understand and speak kannada
Exclusion criteria-The study excludes:

➢ Patients who are critical condition**.**

➢ Using any other complementary treatment

➢ Who were absent at the time of data collection
SAMPLING TECHNIQUE.

Convenient sampling technique was used.

DATA COLLECTION METHOD:-On arrival at the clinic while patients waited in the waiting room, the investigator approached them to inform them about the study and enquired about their willingness to participate. Eligible patients who had been informed verbally and in writing about the purpose, and who had given written informed consent (see Addendum A) were asked to self-complete the questionnaires. Eligibility was assessed by the investigator according to a checklist of the inclusion and exclusion criteria. Patients were advised on how to complete the instruments according to the provided instructions. Any clarifications were made in similar fashion to all participants. Patients received the instrument in their language of choice which was either Afrikaans or English. A quiet environment was provided and there was no contact between respondents during the completion period. Afterwards, the instrument was scrutinized to determine if the patient answered all the different subsets of the questionnaire. Patients were taken to the lung function rooms for assessment of spirometry on the day of evaluation. For FEV1 the highest value from three repeatable attempts was chosen. Predicted values were calculated according to the ECCS formula [Quanjer, Tammeling, Cotes, Pederson, Peslin, Yernault 1993:5]. All measurements were done in a sitting position and all participants rested ten minutes before the test commenced.

Result:-Study population demographics profile:

SUBJECTS (N)	N=89	%
GENDER: **Male Female**	16 73	19% 81%
MEAN AGE (yrs)	**39.8**	
ETHNICITY **Coloureds** **Caucasian** **African**	78 6 5	88% 7% 6%
SMOKING **Non-smokers** **Ex-smokers** ***current smokers excluded**	64 25	72% 28%
EDUCATION **Primary** **Secondary** **Tertiary**	23 58 8	26% 65% 9%

The sample consisted of 89 eligible subjects, Females 73 (81%) and Males 16 (19%). Their mean age was 39.8 years. When participants were categorized into age groups, 4 subjects represented the 12 to 20 age group, 27 the 21 to 35 age group, 43 the 36 to 50 age group and 15 the 50 to 70 age group The fact that the sample favoured females was completely coincidental and the researcher attributed this to the strict exclusion criteria on smoking. The greater portion of the sample consisted of Coloured people reflecting the location of the hospital. Non-smokers were represented by 72% of participants and 28% of participants were ex-smokers. Ex-smokers were included only if they had a less than 5 pack year history. The majority of participants indicated that they had an income of less than R12 000 per year with 37 (42%) receiving a social grant as their only method of income and 14 (16%) indicated they had no means of income. However all participants indicated they had exposure to schooling with 23 (26 %) at primary, 58(65 %) at secondary and 8(9 %) at tertiary level. The researcher did not consider using education as one of the exclusion criteria because it would not have been an accurate representation of the people that use the respiratory clinic as a health facility. Table 4.2 illustrates the distribution of FEV_1 values as calculated for males and females

Distribution of FEV_1 Values

VARIABLES	N=89	MALES	FEMALES
MILD = >80%	28 (30%)	6 (38%)	22 (30%)
MODERATE= 60-80%	21 (24%)	4 (25%)	17 (23%)
SEVERE=<60%	40 (46%)	6 (38%)	34 (47%)

Asthma severity at the clinic was mild in 30%, moderate in 24% and severe in 46% of respondents as determined by FEV_1 values measured on the day of first review at the respiratory clinic. This finding of 46% of participants in the severe asthma group may be an indication of uncontrolled disease that needs specialist involvement or a sign of the degreeof patient non-adherence with existing asthma management strategies.

Findings on Asthma Quality of Life

Asthma quality of life was measured by means of a disease-specific questionnaire, developed by Marks, Dunn & Woolcock [1993: 1103]. The instrument consists of twenty Likert scale responses. Information gathered reflected participants reports on items such as breathlessness and physical restrictions, mood disturbance, social disruption and concerns for health. Scores from the subset scales were calculated by simple addition. A low score (20) reflected good quality of life and a high score (100) reflected poor quality of life.

CONCLUSION: Asthma is not a disease with a single etiology but a very complex syndrome. New diagnostic methods such as broncho-alveolar lavage and bronchoscopy have made it clear that the process of inflammation is present even in people suffering from mild disease. Therefore, there can be no instant solution for a cure because of the interrelationship between genetic factors, atopy, bronchial hyper reactivity and environmental factors. Certain public health issues such as culturally competent care and individual variations in the management of asthma

further complicates the picture. Research reports quoted by Partridge [2000:175] showed that asthma outcomes may differ between asthma sufferers, even if the same information was given to different cultural groups. This tends to be a problem in South Africa, too, with the multi-cultural population and messages from people of a different ethnic group

References:

1.Adams R.J, Smith B.J, Ruffin R.E. 2001. Patient preferences for autonomy in decisicion making in asthma management. Thorax; 56: 126- 132.

2.African National Congress. 1994. A national health plan for South Africa. Maseru.Lesotho: Bähr Mapping and Printing.

3.Allen R.M, Jones M.P. 1998. The Validity and Reliability of an Asthma Knowledge Questionnaire used in the evaluation of a group Asthma Education Self-Management Program for Adults with Asthma. Journal of Asthma; 35 (7): 537 – 545.

4.Ayres J. 1997. 127- 128. What is brittle asthma and how is it treated? National Asthma Training Centre. Class Publishing. London.

5.Bailey M. 2001. Morbidity and Costs. Current Allergy and Clinical Immunology; Vol.14(2): 10-12.

6.Balkrishnan R, Gunigathi P. 2003. Non-compliance with medication regimens and complementary and alternative medicine use in asthma. Pulmonary and Critical Care Update (PCCU); 16: 19.

Use of Blockchain in Payroll

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Abstract: -Blockchain is an inventive IT technology that may undoubtedly define the development of our network society in post-modernity of the impending spans. Blockchain technologies are already within the stage of lively receptions by the company mainstream, henceforth it's significant to study trends and outline its possibledevelopments. The application of blockchain expertise offers benefits to every facet of HR and Payroll related events, in specific development and career guidance, in payments and related discounts of costs. Labor legislature and directive falls into the realm of law that controls one in every of the primary vital segments in social connections. Hence, the labor law is carefully and directly related to manufacture outputs and other significant socio-economic features. Blockchain has the great potential to alter the payroll industry in the subsequent few years, but there is still a lot to be study about how blockchain can and must be castoff. In a highly rules and controlled industry such as payroll, this type of system can reduce discrepancies and save time. Organizationsshould start using blockchain in HR and Payroll industry and offered services in time and attendance sheets preparation, payroll administration and payment choices, welfares direction, fraud protection, workforce development and also tracing employee trainings, certifications and licenses, for all this purpose we can use blockchain.

Keywords: - blockchain expertise, vital segments, labour law,payroll administration, fraud Protection.

1.Introduction:-Block chain technology is an unchallengeable distributed ledger of trades that we can be used to record the transmission of any asset of value. The asset can be physical, such as real estate, or virtual, which includes crypto currencies. Several types of transactions every day, industries process similarly internally and externally. Block chain has the potential to advance transaction speediness, reliability and information transparency. However block chain has been every where in the meantime 1990s, and over the past several years it's been creating additional buzz transversely businesses. Every day, companies are discovering the potentials for using block chain in order to rationalize their processes, including payroll. Yet few are approving block chain now—rendering to a current survey by Paychex, 5 percent of business proprietors are planning to device block chain or crypto currency into their payroll in the next year many business proprietors are wondering how and when these changes will influence their business. However Block chain is a complex technology, because its impact is probable to be so important, it is value payroll professionals taking the stretch to comprehend how it works and the potentials it could solve. The software is also stated as Distributed Ledger Technology. The most important things to recognize about this software is it's decentralized. This means it is not kept on only single machine server, or by a single business, but it innings a cross a peer-to-peer network as an

alternative. As diverse parties add data to the system, it forms into a chain of blocks (therefore the name 'block chain').

Blockchain offers global Payroll Resolutions by via HoursPay Having only one global gateway for all our payrolls. Data entry errors can be eliminated by connecting directly with our HCM system and employees are paid with cryptos.

II. How we can utilize blockchain in Payroll?

Any transaction done in Block chain are traced in an entirely suburbanized environment, this history of transaction will be visible and unambiguous. In an extremely structured sector such as payroll, such kind of application system can decrease inconsistency and it will save your time. Cases are presently being examined within the payroll business encirclement time and attending services, payroll management and payment choices, profit management, fraud protection, employee planning, and chasing of employee training, certificates and licenses, etc. Block chain is as well tested or evaluated, among numerous other Technology, tools and knowledge, to achieve a real-time payment solution. Payroll-related disbursements that run through block chain provide the capability to move faster transactions, quicker tax settlement, by managing communication among companies, workers, tax consultants and the banks performing as distributers, the block chain has the prospective to make the payment process more proficient and restructured. Perhaps the most important technical influence is to make and deliver payments which are done cross-border to intercontinental workers. The unparalleled expansion of certain procedures and measures every where in the world may require an extensive range of payment methods, from cable transfers to Bank Account Clearing System (BACS) payments. Blockchain can not only help streamline the process but also decrease the responsibility of banks because they would no longer be compulsory to act as third parties to ensure financial transactions. Because the blockchain himself guarantees that each transaction is legal and secure, employees are capable to collect their wage, salary and other payment immediate without any delay.Another attention here is that foreign transactions attract more bank charges than local ones, although we are also facing additional complications such as currency variations. Therefore, paying foreign employees currently frequently means longer delays, higher wages, increased risk of error and no chances of chasing paymentis too common for conversion rates to change every hourly, and this could have a major financial influence on companies and workers. However, in this technologywe are also capable of managing cryptocurrency conversion rates.

III. Business benefits if we start using blockchain in payroll.

Blockchain Improves Payroll

Blockchains direct P2P system, and moves cash quicker worldwide. Blockchain permits transfers of cash to be directly received at anyplace anytime through the profit of system's decentralized feature. For example, Bitwage provides a blockchain-based platform as a good and hassle-free choice for directing and receiving payrolls across the country and overseas. Based on the Ethereum, print additionally permits easy payments with blockchain. Workers use tokens to get paid and payroll systems are sponsored by smart contracts. Etch even created a payroll card by using it customers can buy whatever in several stores. Payroll reinforced by fintech block chain can increase the transparency of payroll history and knowledge even though preventing any probable errors with monetary transactions. The payroll method with additional fees doesn't have to be difficult with reference to annoying mediators, and unneeded processes. Blockchain prevents altogether problems and provide elasticity, transparency, and convenience for each the leader and worker regionally and internationally. Payroll-related expenditures that route through blockchain databanks supply the possible for quicker business speeds, quicker tax settlement, and then the facility for HR specialists to validate service history. Our payroll supplier or monetary organization can support us to tell what this new technology can do for our business. Paychex is developed been in blockchain specialist care since Bitcoin developed an important performer in the costs environment and it involved central teams conference frequently to deliberate enhancements in the expertise, development possible usage ,determine possible businesses. Organizations are continually tending the controlling landscape to comprehend in what way our customers require fine-tune to continue acquiescent when using blockchain in various payroll departments. The payroll business will unquestionably face variations in upcoming next few couple of years, aligning our industry with a reliable partner at present will benefit and guarantee or provide assurance of our readiness when those variations reach. In payroll processing, there has continuously been a long interval before employees collect their pays. With the peer-to-peer (P2P) dispersed, system of blockchain, large-scale employers can straight forward handover checks to employees without the essential for third parties. By using blockchain benefits like cost-efficient, safe, and real financial interactions while responding the technical hitches in payroll today. Blockchain important benefit is it save time on management is an additional bonus achieved through blockchain. The technology guarantees that transactions are more protected, and hence it results in reducing payroll fraud and this is potential because this technology provides both encoded and distributed. Blockchain allows businesses (or individuals) to transfer and accept money rapidly. The system doesn't trust on banks to act as middlemen, so waiting periods and fees are reduced. Payroll processing will be much easier and quicker by using peer-to-peer system.

Blockchain provides global Payroll Solutions by HoursPay: With Horus pay we can remove the middleman. We can bring your own provider. Having only one global portal for all your payrolls. Eliminating the middleman will allow you to establish a direct professional relationship with your in-country payroll provider that drives results you are in-country payroll provider will manage the calculations so you don't need to worry about compliance and legislation. **Republic workforce:** one payroll specialist will handle up to 8 countries. **Control timetable:** consolidated global payroll deadlines. Standardized payroll reports: understand your payrolls globally with standard with gross to net reports.Performance Management: Blockchain canrationalize performance management Inspite of referring bulky annual performance evaluations. Employers, managers, and peers could all uninterruptedly provide input about performance, by producing a

more comprehensive and precise picture of complete performance for everyworker. Professionals believe blockchain offers benefits for payroll, mostly for payments made globally.

IV. Risk involved in using blockchain:-Certain likely disputes with consuming this blockchain across the payroll business is **privacy.** Subsequently this blockchain technology is integrally transparent, steps must be reserved to retain certain data private. The Common Data information Protection Regulation and information defense, the observance setting is additionally frequently varied with relevancy this novel experience. The system appear to have numerous dissimilar thoughts about regulation in crypto currency and blockchain expertise at all state and national levels. If it works as envisaged, then the Programme behind a Smart contract should be sound. If blockchain technology was used to generate a payroll expense, a fault could allow the recipient of a payroll payment through a contract to get away with repeat payments before the blockchain. The system has the capability to update itself. As we see that all software, as well as specialized enterprise software, is defective, but the smart contract disbursements are permanent. Same thing if applied with payroll, there would be no chance the business could get their money back and if it went incorrect or a defect like this occur in the organization and causes abuse.When the employer directs a checked to an employee nationwide, the transfer is typically handled through a bank. However, when an employee moves internationally, this financial transaction becomes incredibly complicated. The employer wants to entree a bank with international contacts, which increases processing time and third party fees. These financial institutions charge supplementary fees due to currency changes, and the mediators in turn charge an extra fee for their services. In addition, banks charge their customers fees for cashing a check received abroad

V. Proposed Model

Building a blockchain-based payroll system
A company created an interesting blog in Jan 2017 about creating a blockchain payroll system before the explosion in Bitcoin value fueled interest from the television, government regulators, and corporate service providers. The employee logs into internal company website, on which she enters the period in hours and minutes of her free time that she has spent on additional work. The overhead information and unique ID for the employees, is kept in the Ethereum blockchain. The same information is also directed to a company's prompt messaging channel. Every month an application runs on the blockchain technology platform to automatically compute the bonus for any employee who stated overtime in their free time. This information is automatically promoted to the HR department and monthly salary is remunerated out with the bonus complete, if valid.At the maximum elementary level this could look like an Excel spreadsheet. This spreadsheet is kept in-house and only the Payroll Department has administrator access to authorize that the right calculation has been prepared.

The new reportagescheme would work like this:

1. Future employee admissions an internal web UI with his/her browser to report an open source influence. He/She is genuine with his/her company account while doing so.
2. He/She keys in the pertinent information:
3. A title of a public URL to identify the contribution.

4. Time spent in hours and minutes
5. Aclarification of the contribution, not kept in the blockchain.
6. The entered information, organized with an encoded user identifier, lacking the contribution description, gets kept in the Ethereum blockchain.
7. The identical information, now complete with the description, is also shown to a businessprompt messaging channel.
8. At the finish of each month ause is executed on the blockchain to calculate and return the bonus for allworker, who has stated contributions.
9. This advanced payroll information is furthered to the individuals and systems who make our paysmaterialize. .

Importantcompetences comprise: Decentralized apps (DApps),Distributed business terms and conditions (T&C), Smart contracts and Smart assets.

VI. Results and Discussion

Processing Payrolls at Lower Costs:-In the phase of globalization, the employers are in favor of a dispersed workforce that can deliver real solutions at reasonable costs.The dispensation of cross-border payments is the only limitation. The present cross-border payment solutions are incompetent, at least when it emanates to payrolls. The payment solutions are not allied for processing repetitive payments at a structure level. Besides, the transactional charges, exchange rates, and slow payment dispensation are negative issues. The main aims of Blockchain in payroll is demolishing all these constraints. The employers can use blockchain to transfer payments. We can use a current crypto currency or advance our own payment Process. The receiver can transform it into native coins at a nominal charge. These will speed up the transactions, and there will be no obligation for acquiring heavy currency conversion charges. The transactions are recorded in the blockchain, thus guaranteeing transparency and safety. Subsequently there is no requisite for third-party mediators, the totalprice of cross-border expenses is severely reduced. Very quickly, payroll software will be combined with the blockchain technology for dispensation payments.

Payroll controlling system is so distant the greatest wide-ranging use case for blockchain in Human Resources. Important transactions are encoded and kept as immutable records on the blockchain.Payroll information is　hash-protected　　and　　uses vendor key　　management that stores the　　data needed to　　come　　up　　with a　　key instead　　of the　　key　　the　　a forementioned thus it's unfeasible to　recover　a　key mistreatment any　single part. However this new method to payments conjointly creates its possible to use (and pay) staff in remote places or countries　wherever payment　infrastructure　is　restricted or prescript currencies are　impulsive. In real time, Payments on a blockchain can happen and, if wanted, through a universally typical cryptocurrency, which can charm to endowment ponds that were earlier inaccessible as a result of they were too reserved or their self and knowledge couldn't be verified. The revolution is nearly to initiate if we follow and use blockchain employment in payroll by investigating scenarios, implementing administrative changes, train account department with the correct skills and information, and encirclement ourself to observe the blockchain rebellion within Payroll departments.

VIII.　Future work:-

The future application of payroll using blockchain　seems to　be avid. However there's an extended thanks　to move　on. It's　just　and simply the　beginning.　As　a　business corporate

executive, we   need   to mirror the   benefits   and   applications   of   blockchain in dissimilar businesses. There's an opening of regulating and fixing the payroll business these by using different use cases. By means of blockchain there can be overall various space and also novel candidates who decide to interfere payroll computer code business with new merchandise. The blockchain marketplace remains a talented one as its seems to be and also unlikely the expertise being used comprehensively in our ordinarylifespan for certain time to come slightly that means its effect on the payroll function that devours to be reallyartificial. However as technology normally catches up with us a proportion of speedily than we might consider, primarily if price savings isthere and improved competences to be had, it's value a minimum of keeping subordinatemark open mind regarding.

VII. Conclusion:-Payroll controlling system is so distant the greatest wide-ranging use case for blockchain in Human Resources. Important transactions are encoded and kept as immutable records on the blockchain. Payroll information is hash-protected and uses vendor key management that stores the data needed to come up with a key instead of the key the aforementioned thus it's unfeasible to recover a key mistreatment any single part. However this new method to payments conjointly creates its possible to use (and pay) staff in remote places or countries wherever payment infrastructure is restricted or rescript currencies are impulsive. In real time, Payments on a blockchain can happen and, if wanted, through a universally typical cryptocurrency, which can charm to endowment ponds that were earlier inaccessible as a result of they were too reserved or their self and knowledge couldn't be verified. The revolution is nearly to initiate if we follow and use blockchain employment in payroll by investigating scenarios, implementing administrative changes, train account department with the correct skills and information, and encirclement ourself to observe the blockchain rebellion within Payroll departments.

VIII.   Future work

The future application of payroll using blockchain seems to be avid. However there's an extended thanks to move on. It's just and simply the beginning. As a business corporate executive, we   need   to mirror the   benefits   and   applications   of   blockchain in dissimilar businesses. There's an opening of regulating and fixing the payroll business these by using different use cases. By means of blockchain there can be overall various space and also novel candidates who decide to interfere payroll computer code business with new merchandise. The blockchain marketplace remains a talented one as its seems to be and also unlikely the expertise being used comprehensively in our ordinarylifespan for certain time to come slightly that means its effect on the payroll function that devours to be reallyartificial. However as technology normally catches up with us a proportion of speedily than we might consider, primarily if price savings isthere and improved competences to be had, it's value a minimum of keeping subordinatemark open mind regarding.

IX.   References

[1] Van-Cam Nguyen, Hoai-Luan Pham, Thi-Hong Tran, Huu-Thuan Huynh and Yasuhiko Nakashima (May 2019), "Digitizing Invoice and Managing VAT PaymentUsing Blockchain Smart Contract",   International Conference IEEE on Blockchain and Cryptocurrency (ICBC), DOI: 10.1109/BLOC.2019.8751256, Pp 74-77.

[2] M. M. H. Onik, M. H. Miraz and C. Kim (APRIL 2018), "A recruitment and human resource management technique for industry 4.0using Blockchain technology," Smart Cities Symposium 2018, DOI: 10.1049/cp.2018.1371, pp. 1-6.

[3] Fran Casino, Thomas K. Dasaklis and Constantinos Patsakis (2019), "Current status, classification and open issues: A systematic literature review of blockchain-based applications:", Telematics and Informatics - An Interdisciplinary Journal on the Social Impacts of New Technologies, doi.org/10.1016/j.tele.2018.11.006, Vol. 36, Pp. 55-81.

[4] Forbes "In the payroll industry the future of blockchain" https://hrdailyadvisor.blr.com/2018/10/15/the-future-of-blockchain-in-the-payroll-industry/[5] Khmelnitski L.A. (May 2018), "Blockchain Based Smart Profiles in HR", Presentation at the Vizavi Consult Event, DOI: -10.2991/iscde-19.2019.154, Pp. 1-10 www.digitalasset.live/hr-blockchain;

[6] Dolzhenko R.A. Opportunities and Prospects for using blockchain technology in the system of Labour relations. - URL: http://www.uiec.ru/content/zhurnal2018/ JET_03_18/14iDolzhenko.pdf (accessed: 07.10.2019).

BACKPROPAGATION ALGORITHM

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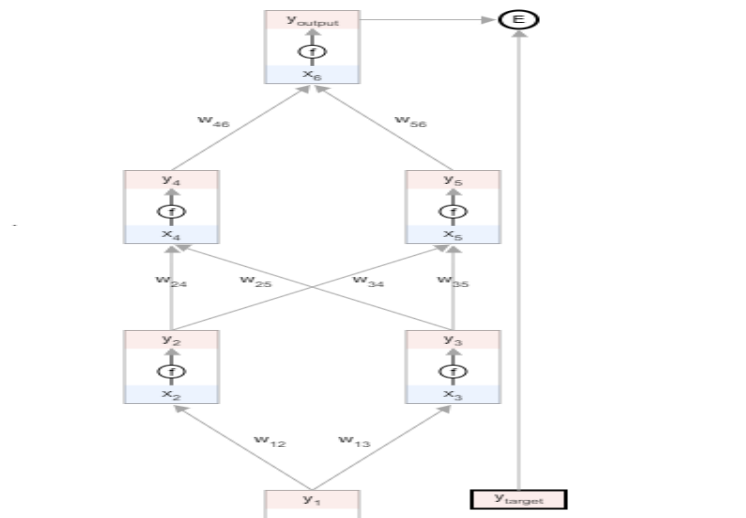**Abstract**.:-Artificial Neural Networks are made use of for the tasks such as classification and clustering like any other data mining tool. These networks aim to copy a human mind and its activities. These artificial neural networks are able to learn from available datasets which act as examples. If these networks are fed with the dataset examples, these will be able to classify and even discover new trends or patterns in data. A basic NN is composed of three layers namelyinput, output and hidden layer. Each layer can have number of nodes and nodes from input layer are connected to the nodes from hidden layer. Nodes from hidden layer are connected to the nodes from output layer. Those connections represent weights between nodes. This paper describes one of the most widely used NN algorithms known as Back Propagation (BP) Algorithm. The aim is to show the logic behind this algorithm. Idea behind BP algorithm is quite simple, output of NN is evaluated against desired output. If results are not satisfactory, connection (weights) between layers are modified and process is repeated again and again until error is small enough. Simple BP example is demonstrated in this paper with NN architecture also covered. New implementation of BP algorithm are emerging and there are few parameters that could be changed to improve performance of BP.

Keywords: Artificial Neural Networks, Back Propagation algorithm, Weights and biases

1. Introduction:-Back-propagation is a technique of propagating the total loss back into the Artificial neural network to check how much of the loss every node in the neural network is responsible for, and based on that, altering the weights in a manner that reduces the loss by giving the nodes which have higher error rates with lower weights and this is true other way round as well.It is, in other words, the basis of tutoringof neural network. It is the art of fine-tuning the weights and biases of a neural network which is further based on the error rate or the loss obtained in the previousiteration. Proper fine tuning of the weights and biases ensures minimal error rates, making the model trust worthy by enhancing its generalization.

2. Training of Neural networks
The backpropagation algorithm is essential for training large neural networks quickly. This paper tries to explain how the algorithm works and trains neural networks.In a simple neural network the architecture has an input layer with some input nodes, one output layer with one or more output nodes and two hidden layers having some nodes in each of these. Nodes in neighbouring layers are connected with weights and biases which are the network parameters.

3. Activation function:-Activations functions are vital for inner layers of the artificial neural nws (NN) to have nonlinearity. Without them NN would lose their significance and become plain perceptions. If linear functions were made use of, NN would not be as powerful as they are. Activation function can be any linear, a threshold or a sigmoid function. Sigmoid activation function is usually used for hidden layer because it combines nearly linear behavior, curvilinear behavior and nearly constant behavior depending on the input value.

Each node has a total input as x, an activation function f(x) and an output y=f(x). f(x) has to be a non-linear function, otherwise the neural network will only be able to learn linear models.

A commonly used activation function is the Sigmoid function: $f(x) = \dfrac{1}{1+e^{-x}}$

4. Error function

The aim of this function is to know the weights of the network by design from datain such a way that the predicted output is close to the objective for all inputs.In order to know how far is the desired outcome, an error function E is made use of. An error functon that is common is $E(youtput, ytarget) = \dfrac{1}{2}(youtput - ytarget)^2$

5. Forward propagation:-Forward propagation can be easily explained by taking an input example
(xinput,ytarget) and altering the input layer of the NN.For the sake of continuity, the inputnode is to be deemedlike any other node but sans an activation function so its output is equal to its input, i.e. y1=xinput

Initially the hidden layeris updated. The output y of the nodes in the previous layer is taken and weights are used to compute the input x of the nodes in the next layer. $X_j = \sum_{i \in in(j)} wij\, yi + bj$

Subsequently the output of the nodes in the first hidden layer is updated. In order to achieve that the activation function f(x) is used.

y=f(x)

Following equations are used to propagate for the rest of the neural network and get the final output of the network.

y=f(x)

$$X_j = \sum_{i \in in(j)} wij yi + bj$$

6. Error derivative:-Now the algorithm is used to decide how much each weightof the network is changed after analysing the expected output with the required output for a particular example. For this, there is a need to compute the error changes with respect to each weight dE/dwij After compiling the error derivatives, the weights need to be changed using the following rule:

$$w_{ij} = w_{ij} - \alpha \frac{dE}{dWij}$$

where α is a non negative value which can be treated as constant, referred to as the learning rate, which is fine-tuned empirically.The update rule is as given in succeeding paragraph.

. If the error goes down when the weight increases ($\frac{dE}{dWij}$<0), then increase the weight, otherwise if the error goes up when the weight increases ($\frac{dE}{dWij}$j>0), then decrease the weight.
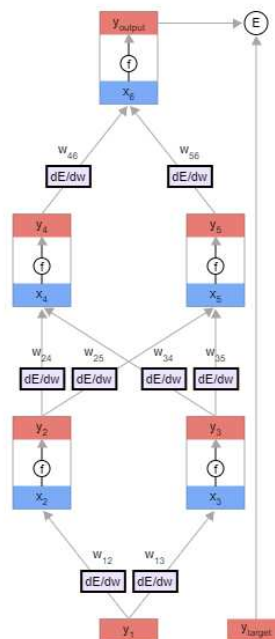
7. Additional derivatives:-In order to calculate $\frac{dE}{dWij}$, two more derivatives are calculated and saved for each node. This is how the error changes with respect to total input of the node $\frac{dE}{dx}$ andthe output of the node $\frac{dE}{dy}$

8. Back propagation:-There is requirement of back propagating error derivatives. Since the output has been predicted for this particular input example, now the error changes can be computed with the output.For an our error function $E=\frac{1}{2}(y_{output}-y_{target})^2$ the error changes that can be computed are :

$$\frac{dE}{\partial y output}=y_{output}-y_{target}$$

Continuing with this concept of Back propagation

Now that we have $\frac{dE}{dy}$

we can get $\frac{dE}{dx}$ using the chain rule.

$$\frac{dE}{\partial x}=\frac{dy}{dx}\frac{dE}{dy}=\frac{d}{dx}f(x)\ \frac{\partial E}{dy}$$

where $\frac{d}{dx}f(x)=f(x)(1-f(x))$

when f(x) is the Sigmoid activation function.

As soon as we have the error derivative with respect to the total input of a node, we can get the error derivative with respect to the weights coming into that node.

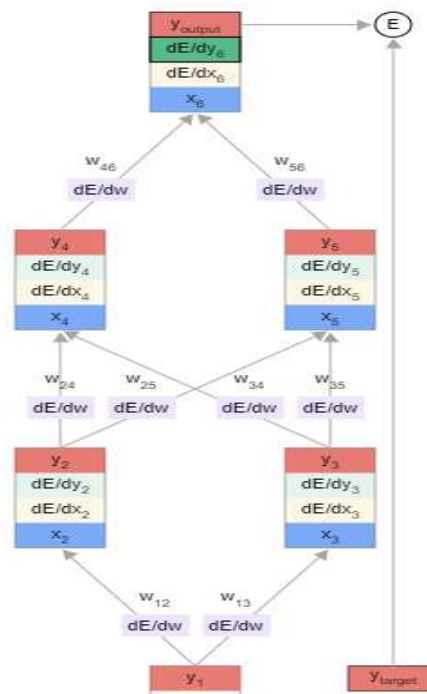$$\frac{\partial E}{\partial wij}=\frac{\partial xj}{\partial wij}\frac{\partial E}{\partial x}$$

which equals $y1\frac{\partial E}{\partial xj}$

And using the chain rule, we can also get $\frac{dE}{dy}$ from the previous layer.

We have made a full circle.

$$\frac{\partial E}{\partial yi}=\sum_{i\in out(i)}\frac{\partial xj}{\partial yi}\frac{\partial E}{\partial xj}$$

$$=\sum_{i\in out(i)}wij\ \frac{\partial E}{\partial xj}$$

Having studied the ideaof backpropagation all that is left to be done is to once again repeat the previous three processes as depicted by formulas until we have computed all the error derivatives.

10. Conclusion:-As is well understood that Artificial Neural Networks are interconnected networks that almost remind us of human brains. The most significant characteristics of any Neural network is its ability to quickly learn. When a training set is presented to neural networks where both the values ie input and output values are known, NN model can be formed to help with classifying new data. Back propagation algorithm as discussed in preceding paragraphs helps in quick learning of the NNs. Interesting results that are achievedby using these neural networks are definitely encouraging, especially in some niche fields like face or pattern recognition and subsequently face forensics.This is one of the reasons NN is getting more and more attention off late. Back propagation algorithm which is most popular algorithm forms backbone of Neural networks.

References

1. **B. Muller, J. Reinhardt, and M.T. Strickland. (1995)**Neural networks: an introduction. No.VI, in Physics of neural networks, Springer, ISBN9783540602071. URL http://books.google.ie/books?id=EFUzMYjOXk8C.
2. **Charu C Aggarwal (2018),**Neural networksand Deep learning: A textbook.Springer, ISBN978-3-319-94463-0. URLhttps://books.google.co.in/books?id=achqDwAAQBAJ
3. **D.B. Fogel.Blondie24,(2002)** playing at the edge of AI. The Morgan Kaufmann Series in Evolutionary Computation. Morgan Kaufmann Publishers, ISBN9781558607835. URL http://books.google.ie/books?id=5vpuw8L0C AC.
4. **D.T. Larose. (2005)** Discovering knowledge in data: an introduction to data mining. WileyInterscience,ISBN9780471666578.URLhttp://books.google.ie/books?id=JbPMdPWQI OwC.
5. **D. Michie, D.J. Spiegelhalter, and C.C. Taylor.(1995)**Machine learning, neural and statistical classification. Artificial intelligence.

6. **Ellis   Horwood,(1994)**   ISBN   9780131063600.   URL
   http://books.google.ie/books?id=QPqCQgAACAAJ.
7. **Michael Negnevitsky**.**(2005)**Artificial intelligence: a guide to intelligent systems. Pearson Education Limited.
8. **Yogesh Kumar Sharma (2019)** Implications of Deep Learning-Based Methods for Face Recognition in Online Examination System, ISSN: 2277-3878, Volume-8, Issue-3, Pp. 1204-1208, Sept.-2019.70.
9. **Yves Chauvin, David E. Rumelhart-(2013)**Backpropagation: Theory, Architectures, and Applications.

A REVIEW ON ROUTING PROTOCOLS FOR UNDERWATER WSN

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ABSTRACT:-In today's era due to technological advancement in the field of IOT and Wireless sensor network itis possible to build affordable and portable IOT devices for underwater wireless sensor network. These devices are helpful for various aquatic applications like life imaging, collection of data, Ocean sampling , disaster prevention, geological processes supervising, under water equipment monitoring etc., which are used for monitoring purpose. To make these applications viable there is need of underwater devices communication within less time. Keeping all this as a base here in this paper, various aspects of routing protocol for underwater acoustic communications are reviewed.

KEYWORD -routing protocol, review, underwater, WSN,energy efficiency

1. INTRODUCTION

Due to various under water activities and water current, underwater sensors remains moving. For Such activities where network topology keeps on changing as time passes our traditional routing is not sufficient. The Underwater wireless sensor network faces many of the issues like bandwidth and battery capacity limitation, path loss is more, energy efficiency etc. Therefore to prolong the lifetime of UWSNs, many energy efficient routing protocols have been proposed. In this paper there is a brief review of routing protocols related work carried out in the field underwater wireless senor network. To design energy-efficient routing scheme for UWSNs and efficient data routing mechanisms WSN consist of low cost nodes with limited battery power and the battery replacement is not easy for WSN with thousands of physically embedded nodes, so energy efficient routing protocol should be employed to offer a long life work time. Section 2 describes the existing work of various routing mechanisms. Section 3 gives conclusion remark based on review.

2. RELATED WORK:-In paper [1], a dynamic, low energy consumption routing protocol (GSTEB) is introduced for prolonging the lifetime of WSN. It works in four different phases like initial phase, Tree construction phase, Self-Organized Data Collecting and Transmitting Phase, Information Exchanging Phase. There is occurrence of end to end routing delay in an underwater environment as well overhead for consumption because of the large data routing path. Authors have introduced DVRP to handle some critical routing issues like energy efficiency, delay in end to end communication, horizontal communication etc. in UWSNs [2].The SPARCO routing scheme [3] is proposed to enhance the stability period with reduced path loss and reduce the energy consumption of underwater networks. It is based on source to destination data transmission. It is based on cooperative scheme with the goal to design a routing protocol with most energy efficiency. In the paper [4], EERBLC is given which is a localization-free routing protocol along with three phases like creation of unequal and layer cluster, after creating cluster there is maintenance and last phase is updating. This protocol is useful for solving the problems of high error rate, long end-to-end delay and high energy consumption.Authors have introduced [5] EEDBR protocol which makes use of depth and residential energy of sensors for routing

which overcomes the problem of improving energy efficiency under water and the replacement of underwater sensors batteries which may be very expensive. In [6] authors introduced BEAR protocol, to solve the problem of imbalanced and inefficient energy utilization with prolong the lifetime of UWSNs. It works under the category of energy saving and managing energy. Efficient energy utilization and balanced energy consumption in the network is also possible with BEAR. It works in three phases namely initialization, tree construction and data transmission phase. To transfer data towards receiver efficiently without limited energy. Authors have used routing method FAF-EBRM based on factor which is aware about forward node selection technique which is based on weight of next node and density of energy. It balances energy efficiency, increases lifetime [7].As per paper [8], there is introduction of EECR protocol for wireless – assisted IoT. This protocol works in different phases like initialization, selection of first cluster head, rotate, use of centroid algorithm scheme and protective mechanism. Also there is introduction of energy consumption model required for EECR protocol. Solution to the problem of cluster forming is based on distance to energy centroid. There is introduction of optimized algorithm based on simulation result. As per Paper [9],UW-MAC is the first dynamic, close loop distributed transmitted protocol that leverages CDMA properties to achieve multiple accesses to the scarce underwater bandwidth. It achieves the high network through put, low energy consumption, low channel access delay in deep water communication. UW-MAC protocols tuned for the underwater environment under different architecture scenarios and simulation settings. Unlike in the terrestrial positioning, the global positioning system (GPS) cannot work efficiently underwater. The limited bandwidth, the severely impaired channel and the cost of underwater equipment all makes the localization problem very challenging. In this paper we proposed a new DET based hierarchical localization scheme. The new scheme inherits the merits of DNR scheme, such as simplicity and high localization ratio, but can significantly decrease cost of the system, and increase scalability and localization performances due to use of the hierarchical design [10].In [11], author introduced a hybrid algorithm to extend the lifetime of sensor nodes in WSN. Here, the hybrid technique combines two routing methods, namely, flat multihop routing and hierarchical multihop routing. With this hybrid approach authors have reduced required power and traffic. Paper [12] introduces a cooperative routing scheme that transmits data reliably from a mobile sensor to any one of the sink of the sea surfacewhich allows more frequent data gathering due to support of neighboring nodes where least data loss is expected. For underwater Sensor network it is crucial to get any efficient routing protocol for delivery of data packet. Due to acoustic channel characteristic communication becomes a challenging task for underwater sensor networks. To solve this issue authors have introduced GPNS a routing protocol which is based on partial network and geographic coding. These protocols make use of partial network coding for delivery of data with reduced count of sending packets and collision reduction between packets[13].Challenges to replace and increase life time of sensor node having limited battery. Paper [14] has proposed, underwater energy harvester that is capable of utilizing and harvesting energy, improve life time and end-to-end delay of nodes. Energy is affected due to square measured nodes, which losses their energy as time passes. Performed better energy consumption due to less circuitry in sensor node also the link between the nodes are less noisy[15].

3. CONCLUSION:-Thus we have seen various mechanisms of routing in underwater wireless. This paper covers the overview of few of the routing protocols designed for underwater wireless sensor network. They are going to discuss the solution of various issues like network life time, delay in communication, throughput etc.

REFERENCES

1. Han, Z., Wu, J., Zhang, J., Liu, L., & Tian, K. (2014). A general self-organized tree-based energy-balance routing protocol for wireless sensor network. IEEE Transactions on Nuclear Science, 61(2), 732-740.
2. Ali, T., Jung, L. T., & Faye, I. (2014). Diagonal and vertical routing protocol for underwater wireless sensor network. Procedia-Social and Behavioral Sciences, 129, 372-379.
3. Ahmed, S., Javaid, N., Ahmad, A., Ahmed, I., Durrani, M. Y., Ali, A., ...&Ilahi, M. (2016). SPARCO: stochastic performance analysis with reliability and cooperation for underwater wireless sensor networks. Journal of Sensors, 2016.
4. Zhu, F., & Wei, J. (2018). An energy efficient routing protocol based on layers and unequal clusters in underwater wireless sensor networks. Journal of Sensors, 2018.
5. Wahid, A., Lee, S., Jeong, H. J., & Kim, D. (2011, September). Eedbr: Energy-efficient depth-based routing protocol for underwater wireless sensor networks. In International Conference on Advanced Computer Science and Information Technology (pp. 223-234). Springer, Berlin, Heidelberg.
6. Javaid, N., Cheema, S., Akbar, M., Alrajeh, N., Alabed, M. S., &Guizani, N. (2017). Balanced energy consumption based adaptive routing for IoT enabling underwater WSNs. IEEE Access, 5, 10040-10051.
7. Zhang, D., Li, G., Zheng, K., Ming, X., & Pan, Z. H. (2013). An energy-balanced routing method based on forward-aware factor for wireless sensor networks. IEEE transactions on industrial informatics, 10(1), 766-773.
8. Yao, X. W., Yao, Y., Qi, C. F., & Huang, W. (2019, October). Eecr: Energy-efficient cooperative routing for em-based nanonetworks. In International Conference on Cooperative Design, Visualization and Engineering (pp. 30-38). Springer, Cham.
9. Watfa, M. K., Selman, S., &Denkilkian, H. (2010). UW MAC: An underwater sensor network MAC protocol. International journal of communication systems, 23(4), 485-506.
10. Chen, K., Zhou, Y., & He, J. (2009). A localization scheme for underwater wireless sensor networks. International Journal of Advanced Science and Technology, 4.
11. Abdulla, A. E., Nishiyama, H., & Kato, N. (2012). Extending the lifetime of wireless sensor networks: A hybrid routing algorithm. Computer Communications, 35(9), 1056-1063.
12. Ahmed, S., Javaid, N., Khan, F. A., Durrani, M. Y., Ali, A., Shaukat, A., ...&Qasim, U. (2015). Co-UWSN: Cooperative energy-efficient protocol for underwater WSNs. International Journal of Distributed Sensor Networks, 11(4), 891410.
13. Hao, K., Jin, Z., Shen, H., & Wang, Y. (2015). An efficient and reliable geographic routing protocol based on partial network coding for underwater sensor networks. Sensors, 15(6), 12720-12735.
14. Khan, M. N., Wadud, Z., Khalid, A., Ahmed, S., Javaid, N., &Hafeez, A. (2018). EH-DBR: Energy harvesting depth based routing for underwater sensor networks. EAI Endorsed Transactions on Energy Web, 5(17).
15. Islam, M., Biswas, M., Mahi, M., Nayeen, J., &Whaiduzzaman, M. (2018). LBRP: A Resilient Energy Harvesting Noise Aware Routing Protocol for Under Water Sensor Networks (UWSNS). International Journal in Foundations of Computer Science & Technology (IJFCST) Vol, 8.

WATER LOGGING AND SOIL SALINITY PHENOMENON AND LAND RECLAMATION PRACTICES

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Abstract:-Drainage can be either natural or artificial. Most lands have some natural surface and sub surface drainage. But, when natural drainage is inadequate to handle the water reaching the land by either natural or artificial means, manmade or artificial drainage is required.The main focus of this paper is on Waterlogging and Salinization phenomenon which is associated with Drainage system. This paper also explains that efficient use of land and water resources is to a greater extent dependent upon the control of salinization problem. Soil Salinity and sometimes Alkalinity are harmful to plant growth. Plants require oxygen as well as water for their growth. Conditions affecting the Supply of Oxygen from the soil air are critical. During Waterlogged condition oxygen circulation is unable to sustain root requirements for any length of time. In the absence of sufficient oxygen, substance such as alcohol and cyanide may be formed in the plant tissues and plant growth may be severely curtailed. Under certain circumstances, toxic compounds may build up as a result of oxygen deficiencies. The various effects of waterlogging combine to influence crop yield to a marked extent. Plants are more sensitive to salinity during the germination and seeding stages than they are during the rapid growth period. All this phenomenon along with the devastating Environmental impact of water logging and salinization are explained in this paper. Land Reclamation Methodology with its Pre-Irrigation and Post-Irrigtion activities forms an important part of this Research. The complete study helps to understand and determine the extent of Waterlogged areas in various cities of Maharashtra (India).

Keywords:- Drainage, Salinity, Water logging, Land Reclamation, Methodology.

Introduction:-A prime requirement for successfully irrigated agriculture is the development and maintenance of a soil zone in which the moisture oxygen salt balance is favourable for plant growth. Plant requires both moisture and oxygen to live. The proper balance between soil moisture and oxygen is maintained to a considerable extent by providing adequate drainage. A simple but comprehensive definition of Adequate Drainage is the removal of excess water and salt from the soil at a rate which will permit normal plant growth.Drainage can be either natural or artificial. Most lands have some natural surface and sub surface drainage. But, when natural drainage is inadequate to handle the water reaching the land by either natural or artificial means, manmade or artificial drainage is required.Overall drainage of the agricultural field can be divided into two types, namely:

- **Land Drainage**:- Land Drainage is large scale drainage where the object is to drain surplus water from a large area by such means as improving the flow of the streams and rivers, excavating large open drains erecting dykes and levees and pumping.

  - **Field Drainage:**- Field Drainage is removal of surplus water that otherwise restricts crop growth from agricultural land. The surplus water may accumulate because of rain or surface flow and cannot naturally be drained away fast enough. If the primary object is to avoid surface water logging, then surface drainage is provided. But, if permanent

lowering of water table is desired besides removing the water from the root zone, then a system of sub surface drain is often used.

Waterlogging and Salinization:-Plants require oxygen as well as water for their growth. They obtain oxygen requirement from two sources , namely from the soil air and from the open atmosphere. Conditions affecting the Supply of Oxygen from the soil air are critical.Movement of Oxygen through the pore system of the size of the plant roots is only indirectly a function of the size of the pores. In air filled pores, oxygen diffusion is rapid and oxygen deficiencies are rare. In saturated pores, the effective coefficient of oxygen   diffusion is much lower. During Waterlogged condition oxygen diffusion is unable to sustain root or microbial requirements for any length of time. In the absence of sufficient oxygen, substance such as alcohol and cyanide may be formed in the plant tissues and plant growth may be severely curtailed. Under certain circumstances, toxic compounds may build up as a result of oxygen deficiencies. The various effects of waterlogging combine to influence crop yield to a marked extent.A Saline soil is one which contains sufficient soluble salts to injure or reduce the growth of many plants. Saline soils have electrical conductivities of saturation extracts higher than 4 mmhos/cm. Plants are more sensitive to salinity during the germination and seeding stages than they are during the rapid growth period. Salinization can be remedied by applying water. The main source of salts in irrigated soil, is groundwater lying close to the soil surface and salts of the underlying soils.Efficient use of land and water resources is to a greater extent dependent upon the control of salinization problem. It is a well known phenomenon that, when an area is irrigated excessively over an extended period of time, the ground water level rises. When the water table reaches a height, which is within the capillary lift of the soil , the soil moisture is brought to the surface where it evaporates. Salts which were originally present in the irrigation water or which were dissolved in the rising ground water ,get concentrated on the land surface. This causes Soil Salinity and some times Alkalinity which are harmful to plant growth. When a saline water table rises and remains in the root zone longer than about 48 hours, resulting in an abnormally high saline moisture condition, agriculture production is usually seriously affected.

Methodology:-A prime requirement for successfully irrigated agriculture is the development and maintenance of a soil zone in which the moisture oxygen salt balance is favourable for plant growth. For it removal of excess water and salt from the soil is essential. It is achieved by constructing drainage scheme.

Types of Drainage:-Surface (open) and sub-surface drainage are main categories of drainage arrangements. The former consists of open trench of suitable dimensions with stable sections while the later has many different forms.Surface drainage can eliminate ponded water and reduce the amount of water entering the soil profile.Sub-surface drainage can lower the water table to provide an aerated root zone. Many soils having poor natural drainage when properly drained turns put to be productive. Open Drains are most commonly constructed in medium soils. The basic requirements are, the drain should pierce through permeable strata and it should have a proper out fall.

Methodology for monitoring:-Well water monitoring is key factor. The procedure for monitoring of well water level is as below:

a. The position of well in the field is marked on village map in the respective Survey No./Gut No. with respect to field boundaries orientation etc. by verifying on ground.

b. Well numbers are marked on the constructed permanent structure on/near the well by oil paint including Survey No./Gut No. etc. The marking of well Nos. should be restricted village wise.

c. The depths of sub-soil layers are noted from the ground level, from the cross section at the well and recorded in the well observation book, for eg.

    i.   Black soil_____ m. from GL

    ii.   Murum _____ m from GL

d. The information regarding whether the well is constructed or other wise is to be recorded along with type of construction of well in the well observation book.

e. If Tharola is constructed on the well. The height of Tharola from Ground level is to be recorded in well observation book (Tharola' is a stilling basin like construction, constructed by the side of well, to avoid soil erosion due to pouring of water lifted from the well).

f. The depth of well water level from ground level is to be measured with the help of metallic tape. If Tharola is constructed on the well, the well water level is measured from the top of Tharola and the Tharola height form Ground Level is deducted from this measured water level to workout the water level from the ground surface.

g. If the water form the well is utilized before noting the levels then depth of well water level is to be recorded on the basis of marking of water level on inner surface of well or by asking the beneficiaries.

h. The diameter of the well and the machineries like electric motor/ diesel engines used for lifting the well-water is noted along with following details:

    i.   H.P. of Motor.

    ii.   Running period of Motor

    iii.   Daily fluctuations in well water level due to lifting of water from the well. These details are collected by discussion with the owner of the wells.

i. The area irrigated under different crops on the well water is to be recorded in well observation book.

j. Details of permanent items like Tharola height etc. are recorded once, during initial period and the details of the items like crop wise area irrigated are to be noted twice a year i.e. pre monsoon and post monsoon.

k. Well observations are carried out twice a year i.e. pre monsoon during March, April and May, and post monsoon November, December and January.

l. Marking of ground water levels of wells on village map command map should be done as per post Monsoon water levels and it should be shown as follows.

0.0 m to 2.00 m	Red Colour	O
1.21 to 3.0 m	Green Colour	O
3.01 m & beyond	Yellow Colour	O
Dry wells	Blank circle.	O

Well water levels on village map should be marked as above and then post monsoon water level and the pre monsoon water level should be written in green and red colour respectively. The well observations should be recorded in format of well observation book.The collection of important basic data and recording of the various observation are done by the field staff i.e. Auger karkoon,

mistry, Civil Engineering assistant, Sub-Divisional Officer and the Sectional Engineers/ Assistant Engineers/ Junior Engineers, on the field and recorded in their own observation book.

m. It is expected that the person carrying out well observation work should know swimming.
n. In every leap year pre-monsoon water samples from the wells are collected in plastic bottle for testing in the laboratory for its electrical conductivity and pH value.
o. The report of well water level, so collected during pre-monsoon and post-monsoon period is prepared and submitted to Head Office at the end of each year. Data compilation shall be done in standard formats.

Land Damage index:-Land Damage Index for command area is defined as a percentage ratio of damaged area and irrigable command area.

$$\text{Land Damage Index} \ = \ \frac{\text{Damaged area in Ha.}}{\text{Irrigable command area in Ha.}} \times 100$$

The damaged area (in Ha.) in the above definition includes both, waterlogged area and area affected due to soil salinity.

Procedure for construction of drainage scheme:

Estimation of Drainage Schemes:-Periodical well observations in every year during Post Monsoon (in the month of November, December, January) & Pre Monsoon (in the month of March, April, May) are taken.

1. From Post monsoon observations with the help of existing wells and Barma Pits (with help of auger), underground water table will be marked with Hydro ISO Bath (HIB) as below. (HIB is a contour showing water table below ground level.)
   - 0 - 2.00 m water level from GL, ….. 2.00 m HIB - Danger Zone
   - 2.01 - 3.00 water level from GL, ….. 3.00 m HIB - Alarming Zone
   - 3.01 & above water level from GL, ….Safe Zone

The area between 2 m HIB contour will be considered as water logged area.

 i. If the water level is at ground level i.e. '0', this area is considered as fully water logged.
ii. If the water level is in between 0.01 to 2.00 m, this area is considered as slightly water logged area.
2. During Pre Monsoon, Auger pits of 1.20 m are taken in visual observed salt affected area patches. The soil samples of depth 0-20. 20-40, 40-80 & 80-120 cm are collected and are tested in Laboratory for E.C. & pH values.
   - If E.C. value is 0-1.00 ………………..Safe i.e. non saline.
   - If E.C. value is 1.0 to 3.00 ……………Slightly salt affected.
   - If E.C. value is MORE THAN 3.01….. Fully salt affected.

After making water logged and salt affected patches, area of every patch is calculated. In this way, damage demarcation report is prepared. If the area of any damaged patch is 4.00 Ha or more continuously for last 3 years, these patches are considered for drainage scheme implementation. Such patches where consent of concern farmers for giving required land for drainage scheme with free of cost will be preferentially considered for that particular year.

PIR - Preliminary Investigation Report:

1) Fixing catchment area.
2) Marking 18" & 8' MIBs (MurumIso Bath. MIB is a contour of murum depth below ground level) for soil types i.e. shallow, Medium, Deep.
3) Marking damaged area with types with existing wells with water level.
4) Fixing drain alignment of main drain, as possible as through valley portion with minimum apex points & fixing outfall.
5) Taking information of Cane area, Rainfall etc. from management wing.
6) Preparing Detailed survey estimate.

After sanction of PIR, detailed survey work will be done.

Detailed Survey Work:

1) Taking levels of L/s of main drain, outfall & C/S & contour survey.
2) Taking C/S at every 200 m interval on main drain with maximum length of c/s up to damage boundary.
3) Taking open pits on every 200 m interval on main drain of size 1.50 x 1.50 x 2.50 m, for classifying the underground strata.
4) Taking auger pits on every 60 m of L/s and c/s of 3.00 depth or hard strata whichever is earlier.
5) L section & C/S plotting with strata classification.
6) Taking consent of farmer on stamp paper.
7) Taking consent of water users association for handing over of drainage scheme for future maintenance.

Gradient Approved:

Bed gradient will marked on 'L' section with considering following points:

1) The depth of cutting will be minimum of 1.50 m in medium soil and 2.0 to 2.50 m in deep soil type.
2) The Bed gradient line must be through Percolating strata with minimum depth of 0.30 m in Percolating strata.
3) The Bed gradient will be near about with natural gradient of the ground so as it will be non-silting &non scouring.

After approval of Bed gradient, the detailed estimate will be prepared.

Procedure for Design of Surface Drainage Scheme:-If for last 3 years damaged area is found 4.00 Ha. or more than 4 ha. Continuously, then the Drainage Scheme is proposed considering following points –

a. Types and area to be irrigated
b. Extent of damaged area
c. Outfall for proposed scheme
d. Type of soil in catchment area
e. Demand for cultivators

Contours at the interval of 0.50 m for flat area and 1.00 m for high undulated area are shown on the map & drainage alignment is fixed by Executive Engineers. The drain should pass through pervious strata.Velocity should be non-silting & non-scouring. Drain depthis given below-

Item	Medium Soil	Deep Soil
Side Slope	1.5 to 1	2:1
Bed width	0.6	1
Minimum Depth	1.5	2.5

Detailed survey for L section levels and c/s of alignment is done. For L section levels at 20 m interval are taken. At every 200 m interval c/s are taken.Auger bores of 3 m depth are taken at 60 m intervals along drain line for ascertaining the strata classification. Auger bores of 1.2 m depth are also taken on c/s at 60 m interval up to 200 m or up to ridge point whichever is nearer.

Hydraulic calculation:-Assuming the discharge be 1 cusec per 100 ha. of suitable area (Suitable area = Medium Soil Area+ Deep Soil Area) and adding 50 % for factor of safety discharge is calculated.

Status of total affected area in Maharashtra is given below:

Year	Region	Number of Irrigation Projects/ Canals	Observed ICA(Ha)	Total affected Area (Ha)	Land Damage Index (LDI)
2016 -17	Pune	33	723597	18271.64	2.53
	North Maharashtra(Nashik)	20	378884	2624.30	0.69
	Marathwada (Aurangabad)	9	453189	1387.09	0.31
	Vidarbh (Nagpur)	6	53500	119.27	0.22
	Vidarbh (Amravati)	16	153006	70.04	0.05
	Konkan	11	40696	0	0
	Total State	95	1802872	22472.	1.25

(Source- As per Eleventh Status Report on Affected Area and well water levels in the commands of Maharashtra State (Period 2015-16 to 2016-17))

Conclusion:-Surface drainage is the removal of excess water from the soil surface in time to prevent damage to cropsand to keep water from ponding on the soil surface, or, in surface drains that are crossed by farmequipment, without causing soil erosion". Surface drainage is a suitable technique where excess waterfrom rainfall or surface irrigation cannot infiltrate into the soil and move through the soil to a drain, orcannot move freely over the soil surface to a natural/artificial drainage channel. Surface drainageproblems occur in flat or nearly flat areas, in the areas having

uneven land surfaces with depressions orridges preventing natural runoff, and in the areas where there is no outlet. By observation periodically itwill be identified. To improve the growing conditions of crops in the field by ensuring the timely andsystematic removal of excess water, the land surface should be smooth and should have a continuousslope to allow the overland flow of water to a collector point. From this collector point, water shouldflow to the area's natural or constructed main drainage system of field and collector drains. Therefore,the design of a surface drainage system has two components: (a) the shaping of the surface by landforming, which is defined as changing the micro-topography of the land to meet the requirements ofsurface drainage or irrigation; and (b) the construction of open drains (field drains and laterals) to the main outlet.

Refrences:

1. AynurFayrap, Cengiz Koc, "Comparison of Drainage Water Quality and Soil Salinity in Irrigated Areas with Surface and Subsurface Drainage Systems" Agric Res ,July–September 2012

2. H. P. Ritzema, " Drainage Principles and Applications",1974

3. P.C.Sharma, MJ Kaledhonkar, Kimmappa and SK Choudhary , "Reclamation of Waterlogged Saline Soils through Subsurface Drainage Technology",2016

4. Ramesh Pal Rudra, Satish C. Negi and Neelam Gupta, "Modelling Approaches for Subsurface Drainage Water Quality Management",2005

5. T.Subramani , K.Babu, "A Study On Agricultural Drainage Systems", International Journal of Application or Innovation in Engineering & Management (IJAIEM), Volume 4, Issue 5, May 2015, pp 304-312, 2015.

6. D.K. Sharma, Anshuman Singh, "Salinity Research in India - Achievements, Challenges and Future Prospects", Water & Energy International (Water Resources Section), 2015

7. Akhilesh Sharma, Chanchal Rana, Saurabh Singh, VivekaKatoch, "Soil Salinity – Causes, Effects and Management in Cucurbits", Handbook of Cucurbits: Growth, Cultural Practises, and Physiology, 2016

8. J.C. Dagar, "Salinity Research in India: An Overview", Bulletin of National Institute of Ecology, 2005

9. Pooja Shrivastava, Rajesh Kumar, "Soil salinity: A serious environmental issue and plant growth promoting bacteria as one of the tools for its alleviation", Saudi Journal of Biological Sciences, 2015

10. IdunaArduini, MakieKokubun, Francesco Licausi, "Crop Response to Waterlogging", Frontiers in Plant Science, 2019

11. A. H. Azhar, M.N. Bhutta and M. Latif, "Reclamation of Irrigated Agriculture Through Tile Drainage at Fourth Drainage Project, Faisalbad", The Journal of Animal & Plant Sciences,2010

Impact of blended learning on skill in postpartum intrauterine contraceptive device (loading and insertion) among nursing students from selected nursing colleges of Jabalpur city.

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ABSTRACT:

Background: Learning is an important aspect of life because it helps the individual to acquire all the necessary skills and abilities required to acquire a specific goal. An important aspect about learning is that , it is a means to improve knowledge and gain skills that will help in achieving any specific objective.. Learning is a gradual process that increases day by day, but to acquire competency one has to have sufficient knowledge , skill and attitude to learn. Hence the learning environment needs to be more realistic. Every learner has a different learning style, in this study Blended learning is an approach of educating individuals by combining the educational materials and opportunities for interaction online well as traditional place based classroom methods.

Materials and Methods:- A   pre experimental study was carried out among purposively selected 30 B.sc nursing students from NSCB, Medical college , government nursing college. Jabalpur. The Research design for the present study was Pre experimental one group pretest posttest research design . to   assess the impact of blended learning on skill in postpartum intrauterine contraceptive device (loading and insertion) among nursing students from selected nursing colleges of Jabalpur city" In this quantitative study, it introduces a base measure before and after the planned exposure, which is depicted as O1 and O2 respectively. X - Impact of Blended learning on skill in postpartum intrauterine contraceptive device (loading and insertion) among nursing students. . Hence the tool developed for the study was:

1. **Socio demographic Information: This includes SECTION A with 6 items.**
2. **Tool for skill competency assessmen**t:-**SECTION B** with Modified 2013 NHM Checklist consisting of 3 items with equal number of steps for each procedure..
3. **Scoring:** All checklists contain equal number of steps with equal marks
- Good score- 7 -   10, Average score – 4 –   6, Poor score - 1   - 3. The samples were collected as per the inclusion criteria. The pretest posttest cognizance scores was analyzed using frequency and percentage, Mean and Standard deviation.
  Result: The Brownie reliability test for each tool and was found reliable. The pre-test and post-test skill was statistically tested by applying t-test method at the 0.05%. In all 3 cases the calculated value of t was more than the table value (2.02), the difference between the two conditions was significant, showing effectiveness of the blended
  learning on skill in postpartum intrauterine contraceptive (loading and Insertion) among nursing students.

KEY WORDS: impact, blended learning, skill, postpartum intrauterine contraceptive device.

INTRODUCTION:-Continued learning nourishes every mind and lifelong learning is an indispensable tool in every career and organization to flourish. Every learners have different learning styles hence diversifying the learning styles is a best approach towards better learning. Blended learning is an approach of educating individuals by combining the educational materials and opportunities for interaction online as compared to traditional place based classroom

methods. In a study conducted by **K..Zohreh in (2012),** to find out the effectiveness of blended learning approach in medical training courses in various clinical steups on congenital adrenal hyperplasia and ambiguous genetilia found a significant correlation between the pretest and posttest scores of the students stating the effectiveness of blended learning and the students had a high level of satisfaction towards the blended learning approach. **Sullivan et al.(1998)**. Studied on the Clinical Training Skills for Reproductive Health   Professionals and found blended learning as an essential tool in developing skills through regular practice. Over the years India's Family Planning Programme has evolved with the shift in focus from merely population control to more critical issues of saving lives and improving the health of mothers and newborns. Family Planning was thus accorded key priority under the RMNCH+A (Reproductive, Maternal, Newborn, Child Health and Adolescent) approach of the Government of India.

Studies by **Goldie SJ, Sweet S, Carvalho N, Natchu UCM, HuD (2010)** highlight that if over the next five years the unmet need for family planning is met globally the maternal mortality would reduce by 25%-35% and further one in every two abortion related deaths would be averted. It is well accepted now that use of spacing methods of contraception can save women's lives and improve health due to a reduction in unwanted, closely spaced and mistimed pregnancies, thus avoiding pregnancies with higher risks and reducing chances of abortions, many of which may be unsafe. Family planning indicators suggest that temporary contraceptive usage is only 60% and the unmet need of couples 21%. Today more and more emphasis is given on Intrauterine contraception as it a very effective, safe , reversible , long term method of contraception which can be provided soon after the delivery of placenta, in postnatal period and immediate postpartum period with very less amenities on the delivery table itself by the trained health care givers. The objectives of this study were as follows:

1. Assess the pre interventional skill of nursing students on postpartum intrauterine contraceptive device (loading and insertion) from selected nursing colleges of Jabalpur city.

2. Find the effectiveness of blended learning on postpartum intrauterine contraceptive device (loading and insertion) among nursing students from selected nursing colleges of Jabalpur city.

METHODOLOGY:-A quantitative approach with pre experimental one group pretest posttest method was used for the study..

SETTING AND SAMPLE SIZE OF THE STUDY:-This pilot study was conducted in government nursing college .NSCB. Medical college . Jabalpur. with 30 IIIRD Year nursing students The reason for selecting the nursing IIIrd year nursing students is because these students are posted in the obstetrics and gynecology department during third and forth year of their curriculum as a part of their specialty posting and get a lot of exposure in assisting during Post partum intrauterine contraceptive device insertion. Once they pass out they are posted in the health care centers where they have to carry out the procedure independently.

SAMPLING TECHNIQUE:-Non probability purposive random sampling .technique was used among nursing III RD year students from selected colleges of Jabalpur city who were assessed for impact of blended learning on skill in postpartum Intrauterine contraceptive device (loading and insertion).

SAMPLING CRITERIA:

Inclusion criteria:

- B.Sc. Nursing III rd and IV year nursing students studying in the selected colleges of Jabalpur city.

- B.Sc. Nursing III rd and IV year nursing students having exposure to this topic in their course.

Exclusion criteria:

- B.Sc Nursing III rd and IV year students not willing to participate in this study.

- B.Sc Nursing III rd and IV year students who are not present at the time of data collection

VARIABLE UNDER THE STUDY:

Independent Variable:-In the present study , independent variable is the impact of blended learning on skill in Postpartum intrauterine contraceptive device among nursing students.

Dependent Variable:-The dependent variable in this study skill in postpartum intrauterine contraceptive device among nursing students.

DATA COLLECTION TOOL: . Hence the tool developed for the study was:

1. **Sociodemographic Information : This includes SECTION A with 6 items.**
2. **Tool for skill competency assessmen**t :   **SECTION B** with Modified 2013 NHM Checklist consisting of 3 items with equal number of steps for each procedure..
- Checklist for hand washing
- Checklist for loading of Postpartum Intrauterine contraceptive device.
- Checklist for insertion of Postpartum Intrauterine contraceptive device.
3. **Scoring:** All checklists contain equal number of steps with equal marks
- Good score- 7 -   10, Average score – 4 –   6, Poor score - 1   - 3. The samples were collected as per the inclusion criteria. The pretest posttest cognizance scores was analyzed using frequency and percentage , Mean and Standard deviation.
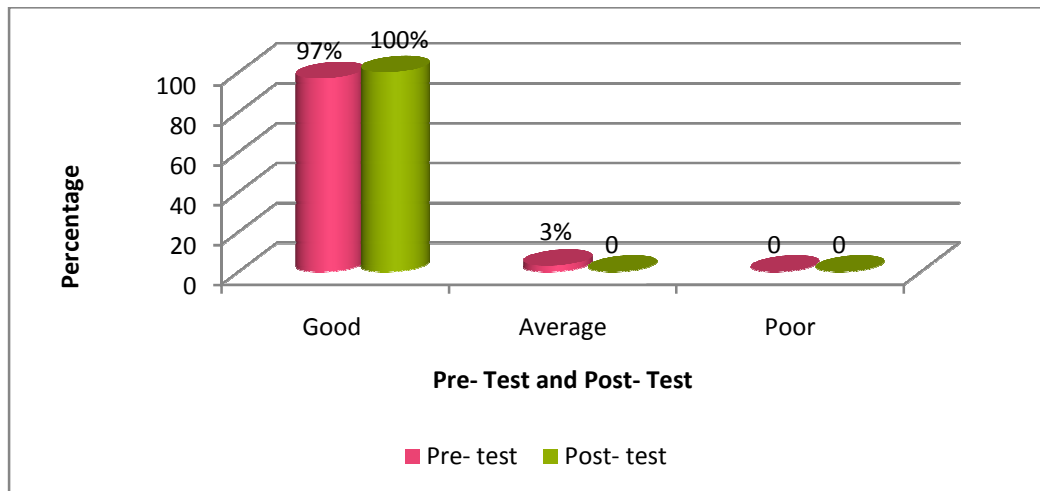
RESULT: The Brownie reliability test for each tool and was found reliable. Reliability Test

The reliability first variable HANDWASH is 1.14 , which is accepted

 The reliability first variable LOADING OF PPIUCD is 1.35 which is accepted

The reliability first variable INSERTION OF PPIUCD is 1.17 ,which is accepted

All the 3 variables value aggregate is shown as 1

Figure No. 1: Distribution of Samples according to Hand washing Pre Test and Post Test Score

Figure No. 1 revealed that distribution of samples according to Hand washing Pre Test and Post Test Score. The highest scores were from Good scores in both pre-test and post –test that is 97% and 100% respectively.
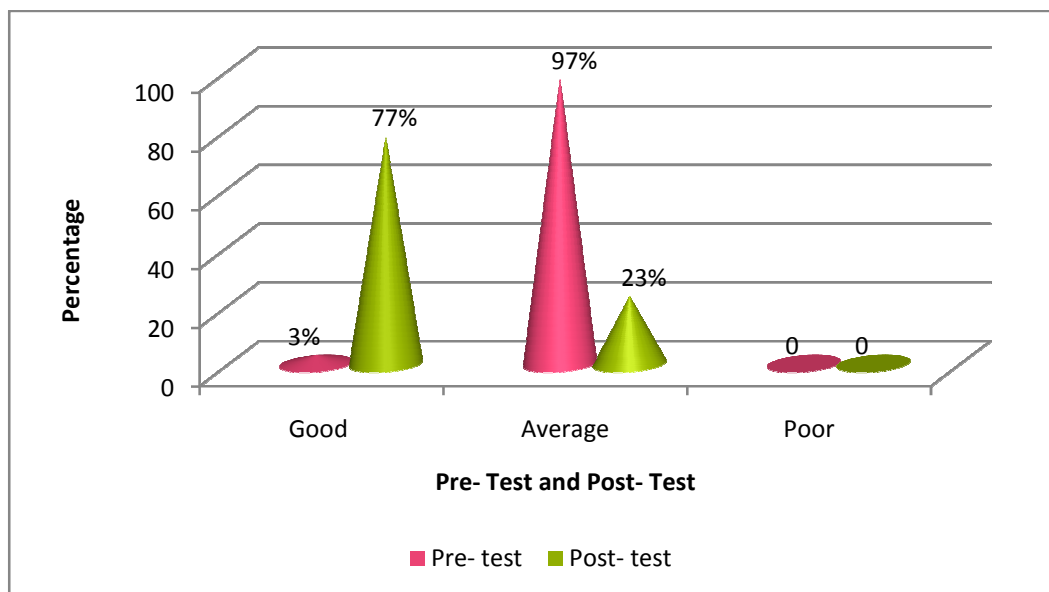
Figure No. 2: Distribution of Samples according to Loading of PPIUSD Pre Test and Post Test Score

Figure No. 2 showed that the highest score of pre-test was in average score that is 97% whereas the highest score of post-test was in good score that is 77% respectively.
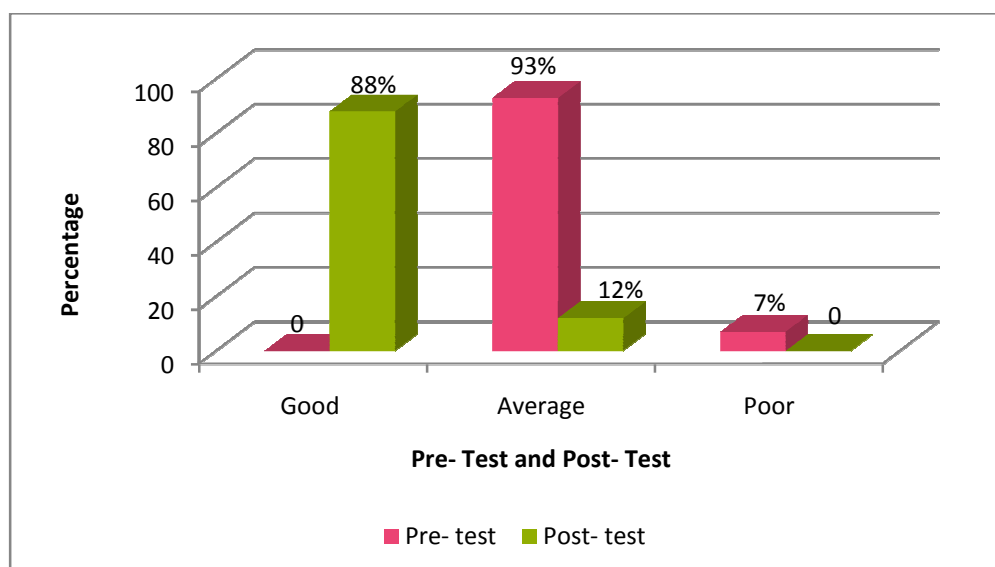
Figure No. 3: Distribution of Samples according to Insertion of PPIUSD Pre Test and Post Test Score

Figure No. 3 concluded that the highest score of pre-test was in average score that is 93% whereas the highest score of post-test was in good score that is 88% respectively.

The pre-test and post-test skill was statistically tested by applying t-test method at the 0.05%. In all 3 cases the calculated value of t was more than the table value (2.02),the difference between the two conditions was significant, showing effectiveness of the blended learning on skill in postpartum intrauterine contraceptive (loading and Insertion) among nursing students.

LIMITATIONS:

1. This study wass limited to the availability of samples in selected nursing colleges.
2. The study was limited to the permission of the higher authority from selected nursing colleges.
3. This study was limited to B.sc.nursing IIIrd year students participating in this study.
4. This study was conducted at the selected area of Jabalpur city.

CONCLUSION:-In concluding this study, findings suggest that blended learning is an effective method among nursing students for skill development and can be done on a larger sample size to generalize the result. As we all know that practice brings perfection so does blended learning as the learner has ample opportunity to practice the skill thoroughly in blended learning skills can be improved significantly.

REFERENCES:

1. C.Tara, Maura et.al (2018) "Intrauterine device expulsion after postpartum placement A Systematic Review and Meta analysis", obstretics and gynaecology 132 (4) 895 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6549490/

2. Cohen (2016) Twelve month contraception and repeat of pregnancy among young mothers chosing post delivery contraception or postplacental intrauterine device.178-183

3, Devi,S S (2017) STUDY ON PPIUCD ACCEPTORS AND THEIR FOLLOW UP-tnmgrmu.ac.in/4430/1/220624017

4. E Williams,Ebasant, S Holcombe et.al (2019) in their article titled "Practce so that the skill does not disappear"Human Resources for Health, 17(1) 24

5. IftikharN.P (2019)Efficacy and Satisfaction Rate in Postpartum Intrauterine Contraceptive Device Insertion: A Prospective Study, National Library of medicine, 13;11(9):e5646. doi: 10.7759/cureus.5646.

6. LM Lopez. (2015) "strategies for improving postpartum contraceptive use evidence from nonrandomized studies". cd 011298. doi.10.1002/14651858.PMD 25429714

7. M.J. Kintu., Zhu C. et.al (2017) "Blended learning effectiveness: the relationship between student characteristics, design features and outcomes". International education technology, vl-14,doi 10.1186/s41239-017-0043-4

8. Mishra S(2014) 'Evaluation of Safety, Efficacy, and Expulsion of Post-Placental and Intra-Cesarean Insertion of Intrauterine Contraceptive Devices (PPIUCD)' 64(5):.Published online 2014 May 18. doi: 10.1007/s13224-014-0550-3. 337

9.Naomi K Tepper,Kathryn M kurtis(2018) "Intrauterine device expulsion after postpartum placement." obstretics and gynaecology132(4)895

A COMPREHENSIVE ENHANCEMENT ON SECURED DEDUPLICATION IN CLOUD STORAGE

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ABSTRACT:-Data deduplication is a process that only saves data once, preventing the same data from being processed again in the cloud storage environment. Data deduplication is a technique for reducing cloud storage capacity and making better usage of bandwidth for storing and retrieving data from the cloud storage region. Secure De-duplication refers to a process that prevents existing records from being re-entered or uploaded to cloud storage. The aim of this technique is to eliminate data storage by eliminating duplicate entries and documents. The convergent encryption strategy is used to encrypt sensitive data before outsourcing to protect its secrecy during deduplication. This paper discusses the problem of data deduplication authorization in order to improve data security. In a hybrid cloud method, there are a number of recent deduplication implementations that include approved deduplication authentication.
Keywords: Secure De-Duplication, Deduplication, encryption, decryption.

INTRODUCTION:-Cloud computing is one of the newest technologies to emerge in the current millennium. Per consumer has a significant amount of information to exchange and store in a safe location that is easily accessible. The principle of deduplication was developed to help cloud storage users make the most of their bandwidth and storage space. Is it possible that avoiding duplicate copies of the same data on the cloud would result in a loss of time, bandwidth, and space? Cloud storage is a model for providing on-demand access to a shared pool of configurable figuring properties from everywhere. As shown by several corporeal case studies, the preliminary of cloud infrastructure persuades programs and oversight to outsource knowledge to arbitrator cloud providers for storage. One of the most dangerous challenges facing today's cloud computing providers is managing a large amount of files. According to an IDC survey, data volume is estimated to hit a total of 40 trillion gigabytes by 2020. Deduplication is a data processing strategy that reduces disk space and upload speed in the cloud while still increasing scalability. In the cloud, a single data copy is processed, and all other data copies are referred to the single data copy. The size of any of these data copies may be defined.

Figure 1: General Structure of Cloud

From the user's perspective, data replication is advantageous since it eliminates the bulk of safety and protection concerns. They are shielded from attacks that might prove to be dangerous in the future because of their protection concern. Although data encryption provides data security, it is incompatible with data replication and defines data chunks, i.e. a unique number. Exact duplicate data records by multiple users would result in distinct cipher messages, rendering data re-entry difficult.Data deduplication is a lossless compression method that prevents duplicated data from being saved on storage devices. The rapid growth in data is a significant obstacle that must be overcome. Data deduplication is a phenomenon that supersedes indistinguishable data in a file or equivalent regions of a network, essentially referring to data already contained on the disk (similar data).
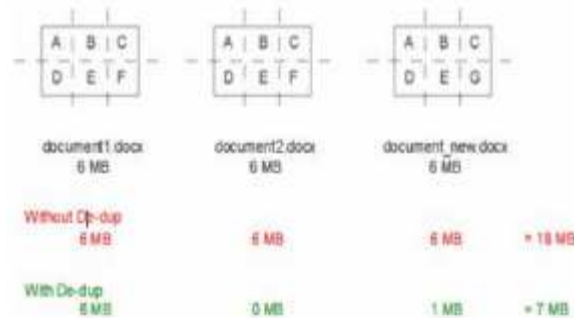
Fig.2 Data Deduplication Process

The data deduplication technique entails categorizing file forms, ripping file data into lumps, and calculating chunk fingerprints using MD5 or SHA-1, which aids in determining whether data is distinct or similar. The unique data is saved in the disk room, while the copied data is deleted from the archive and a pointer is used to link to the initial copy.The distributed data deduplication poses problems in terms of scalability and data reduction ratio around the method, which are similar to those faced by a centralized system that searches and compares data internationally in order to achieve the best data deduplication ratio. The primary challenge that data deduplication systems face is quickly identifying repeated data fragments. Data deduplication may be done at the file level, which ensures that no duplicate files exist, or at the block level, which ensures that duplicate data segments inside a file are found, and at the byte level, which requires so many I/O operations.

RELATED WORK:

Symmetric Encryption:-Symmetric encryption makes use of a shared secret key shared by several people that all have the same data copies. The data is encrypted and decrypted using the same key, which is saved on the computer. To obtain the cipher messages, the data is encrypted using the Advanced Encryption Standard. In comparison to other encryption algorithms, AES is more stable. AES is designed to keep the information safe from prying eyes. To encrypt files, you used to need three functions: I What you're encrypting (ii) Key (iii) Initial vector. Since this deduplication method is done at the block stage, AES is the easiest block cipher to use. Advance Encryption is primarily used to address the issue of secrecy. In this symmetric advanced encryption norm, decrypting the initial plain text is more complex.

Convergent encryption:-In the case of deduplication, convergent encryption ensures data privacy. The convergent key is derived from the first recipient from their initial data copy. The data is encrypted and decrypted using the convergent key. The same convergent key is used for all users who have access to the same information. Four features make up the convergent encryption system.

I Encryption: When a convergent key is used to encrypt data, the same cipher text is produced for the same data.

(ii) Decryption: Using convergent keys, the cipher text is decrypted from the initial plain text from the server.

(iii) Cloud Tag Generation: The tag value is calculated separately from the material and used to locate duplicate copies.

(iv) Key Generation: Convergent keys are created using a data copy of the user's initial code.

LITERATURE SURVEY:

Naresh Kumar et al (2017) In this report, a novel approach for data deduplication is proposed that unifies the Hadoop Distributed File System (HDFS) with the hash value generator Message Digest 5 (MD5) for spotting identical chunks and eliminating data redundancy by acquiring an input message of arbitrarily long length and generating a 128-bit hash code; the hash code produced is then stored in buccal storage.

Bhushan Choudhary et al (2014) Authorized Deduplication Techniques in Cloud Computing is the subject of this investigation. The convergent encryption strategy is used to encrypt sensitive data before outsourcing to protect its secrecy during deduplication.

Youngjoo Shin et al (2017) Many cloud service providers (CSPs) have embraced data deduplication as a means of lowering storage costs. Despite the fact that the general deduplication solution is becoming more widely adopted, it comes with a slew of protection and privacy issues due to cloud storage's outsourced data distribution models. As a result, we address ongoing research on stable deduplication for cloud data in this post, taking into account the most common attack scenarios in cloud computing.

Jainab Begam S.C (2016) Duplication becomes a security problem as the same data is stored in the cloud. The deduplication concept is used to solve this difficulty. The term "deduplication" refers to the process of removing redundant records. Consider a hybrid cloud system that combines a private cloud with a public cloud in order to solve the issue of deduplication of unequal rights.

Module Implementation

1) User Module 2) Server start up and Upload file 3) Secure DE duplicate System

USER MODULE
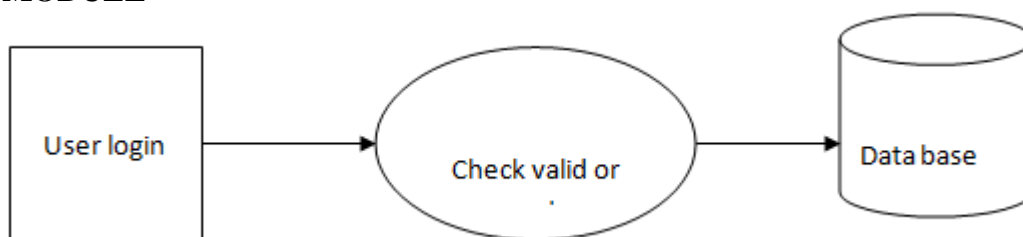
In this module, users must first register in order to gain entry, after which a username and password will be generated based on the user's acceptance. We must check that it is an authorized user until it has been entered. The database is checked to see whether the person is registered or not. Since the archive has a full backup to all documents, it is safe to use.

Experimental Setup:
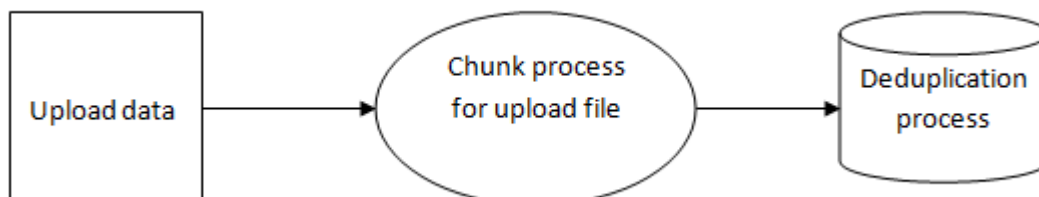
Server Startup and Upload File
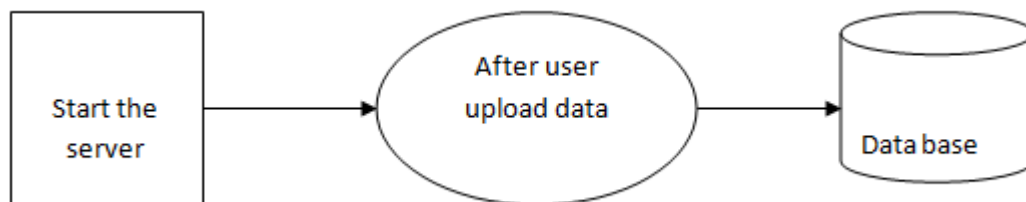
When the cloud environment is accessed, the user will start up the server[6a]. The consumer will then transfer the data in the form of a file to the server.

Experimental Setup:


Secure De Duplication System:

Since downloading a.txt file, the administrator must use chunks after uploading the text file. Each term in a text file is separated and assigned a unique number; after storage, the unique

number is saved for that specific word, and re-entry is not necessary, reducing storage waste. The user has submitted B.txt; if the data is stored in the same way, the term would not be uploaded, since it has already been assigned a specific number via chunk, preventing the storing of duplicate data.

Experimental Setup:

RESULT ANALYSIS
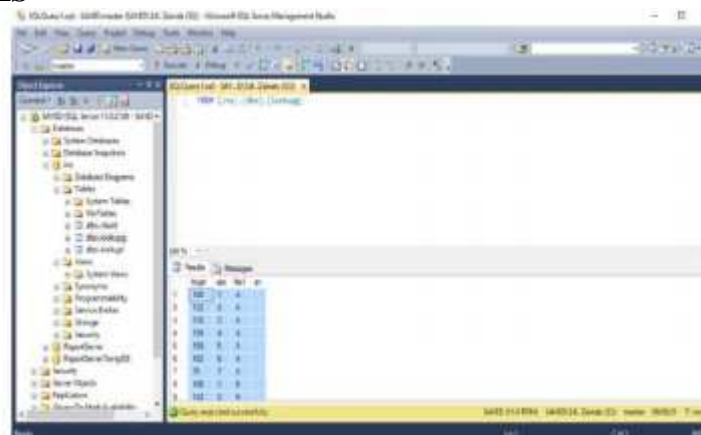
The data base has been modified with the user logins.

SQL with Proof is used to archive data text files that have been uploaded.

Finally, the previously mentioned chunks are registered as well. As a result, SQL demonstrates the execution is back on track.

In a database, chunks of separate text files are processed. Our project's backup end support is Structured Query Language, which displays different records of any entry made in the project.

EXAMPLE

BLOCK 1: Data deduplication is the method of removing redundant copies of the same data from a system.

71738kwhcevceskuorr27548 is a tag code that can be used to identify a particular item.

This code is made up of the following elements: word size, block size, amount of words per block, and word pattern.

What are the capabilities.

• Measurement of the block
• The total number of terms in the block.
• Size of words
• Theme of the words

Deduplication Process:-After the user uploads the information, the server scans the tag value; if the tag value has already been saved, the server will not save the data copy; instead, if the tag value has not yet been stored, the data will be stored in the storage. This deduplication system reduces the amount of disk space and bandwidth used for uploading.

The amount of storage capacity available for conventional storage and deduplication storage will be used to analyze the results. By deleting redundant copies of the same data submitted by separate people, deduplication frees up more computing space.

The number of files placed on the server is represented by the X-axis in this graph. The Y-axis reflects the amount of storage space available on the server to hold the image.

The traditional storage capacity demanded more space in the server to hold the records. Due to the fact that the duplicate file has its own storage room. As a result, the amount of computing capacity available has expanded. When the number of duplicate copies is raised, the storage capacity required increases rapidly.

Deduplication is a disk space-saving technique that involves removing redundant copies of the same records and storing them only once. As the number of files grows, the number of redundant files grows as well. In traditional encryption, further storage is needed to store the same data file over and over again. Deduplication is a technique for saving disk space and bandwidth while streaming. This strategy is effective for every organisation or business to use storage space effectively.
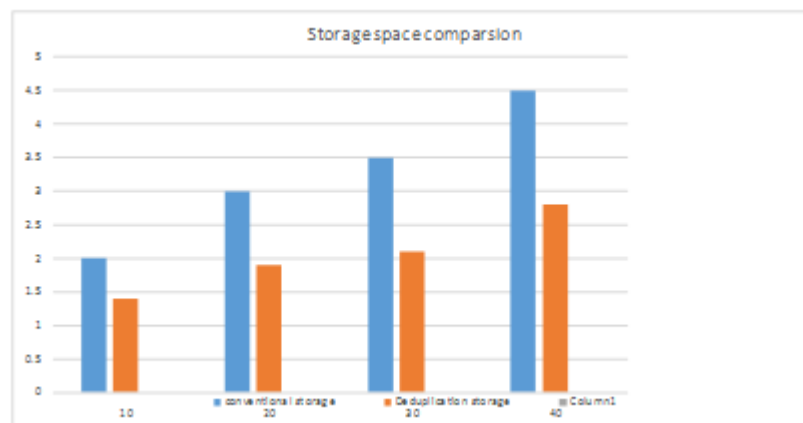
Fig3: Storage Space Comparison

CONCLUSION:-Deduplication is one of the most effective techniques for reducing physical capacity and increasing productivity. The critical point for the Convergent key sharing Scheme is determining the disk capacity and bandwidth. In this article, we improved the system by removing duplicate data from the server, which saves storage space while maintaining data confidentiality. We also ensured that re-entry of data is not feasible using Secure Replication Mechanism, which helps to reduce storage space. The tactic was to eliminate data re-entry, which was made feasible by the Chunks Strategy, in which each term was assigned a unique number, preventing repeated data entry in cloud storage. The Convergent Key Exchange Scheme is used to create and keep track of the hidden key that is exchanged by many people. Convergent key encryption is mostly used to efficiently produce the same ciphertexts for the same data uploaded by several users. Our algorithm has increased the storage capacity, according to the findings of the experiments. We would integrate and measure the server's reliability and bandwidth in future explorations.

REFERENCES:

1. Naresh Kumar, Preeti Malik, Sonam Bhardwaj, S.C. Jain (2017), "Enhancing Storage Efficiency Using Distributed Deduplication for Big Data Storage Systems", IJEE, Volume-9 ,Number-1 pp. 96-108.

2. Bhushan Choudhary, Amit Dravid (2014), "A Study on Authorized Deduplication Techniques in Cloud Computing", International Journal of Advanced Research in Computer Engineering & Technology (IJARCET) Volume 3, Issue 12, PP: 4191-4194.

3. Youngjoo Shin, Dongyoung Koo, Junbeom Hur, (2017), "A Survey of Secure Data Deduplication Schemes for Cloud Storage Systems", ACM Computing Surveys journal, Vol 49, Issue 4.

4. Jainab Begam, S.C., P.Krishnaveni, (2016), "An Enhanced Secure Deduplication System with Differential Authorization in Cloud Computing using Hybrid Method", International Journal of Engineering Science and Computing, Vol 6, Issue no 6, PP: 7674-7677.

5. Chun-Ho Ng and Patrick P. C. Lee(2013) 'Revdedup: A reverse deduplication storage system optimized for reads to latest backups' in Proc. 4th Asia- Pacific Workshop Syst.,

6. Jia Xu, Ee-Chien Chang and Jianying Zhou (2013) 'Weak leakage-resilient clientside deduplication of encrypted data in cloud storage' in Proc. 8th ACM SIGSAC Symp. Inform. Comput. Commun. Security, pp. 195–206.

7. Xia, W., Jiang, H., Feng, D., and Hua, Y., "Silo: A Similarity-Locality Based Near-Exact Deduplication Scheme with Low Ram Overhead and High Throughput", In Proceedings of the USENIX conference on USENIX Annual Technical Conference, 2011, pp. 285–298.

8. Xia , W., Jiang , H., Feng , D., and Tian , L., "Accelerating Data Deduplication by Exploiting Pipelining and Parallelism with Multicore or Manycore Processors", In Proceedings of the 10th USENIX Conference on File and Storage Technologies, 2012, pp. 1–2.

9. Debnath , B., Sengupta , S., and L I , J, "Chunk Stash: speeding up inline storage deduplication using flash memory", In Proceedings of the USENIX Conference on USENIX Annual Technical Conference 2010, pp. 1–14.

10. Sven Bugiel, Stefan Nurnberger, Ahmad-Reza Sadeghi and Thomas Schneider (2011) 'Twin Clouds: An Architecture for Secure Cloud Computing' in in Proc.Workshop Cryptography Security Clouds, pp. 32– 44.

11. Luis Marques and Carlos J Costa. Secure deduplication on mobile devices. In Proceedings of the 2011 Workshop on Open Source and Design of Communication, pages 19–26. ACM, 2011.

Life Style Issues Assessment - A Survey Study amongst the Mumbai College Students

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Abstract;-Anxiety, stress-related physical and emotional disorders have been common causes for college students to take time off, drop out, or commit suicide. The aim of this survey study was to assess the lifestyle-related issues of college students residing in the Mumbai city. An online survey was conducted amongst 816 students of the age group between 17 and 23. The data analysis report of the survey report reveals that beside academic and career issues, there are many other social, mental and physical issues students are facing in their life. There is lack of communication between parents and children, and the result is that they feel shy to open their hearts with their parents/guardian, teachers. These survey report points that there is a requirement of good counselling support to students so that they can share their thoughts, problems, and this will help them to solve their lifestyle issues.

Keywords: College students, Lifestyle Issues

1.Introduction:-College students are the most involved, emotional, and vulnerable group in today's culture when it comes to numerous psychological issues. Anxiety, depression, and suicide rates have risen in recent years as a result of increased peer competitiveness, which includes multiple stresses such as tests, evaluations, economic loss, emotional loss, and jobs.Any student's academic success is the product of a dynamic interplay of different variables, including the student's research patterns, personality traits, and personal interests, as well as the teaching abilities of concerned faculties. However, it has been found that today's college students are underachieving academically.They're more anxious, frustrated, and perplexed about their work and personal lives. As per the National Crime Report Bureau's (NCRB) most recent report, 10,159 students died by suicide in 2018. A student in India attempts suicide every hour, according to the study. (https://www.thehindu.com/news/national/student-suicides-rising-28-lives-lost-every-day/article30685085.ece).College students' suicide rates are directly influenced by stress, anxiety, and depression. Anxiety and stress-related physical and emotional disorders have been common causes for college students to take time off, drop out, or commit suicide. Different psychiatric issues affect different college students. It is possible to identify the key causes underlying college students' psychological issues as quickly as possible, thus enhancing their general mental health. [11].Aside from academics, a student's lifestyle is affected by a variety of topics and questions. Family and colleagues are the most

dismissive of student lifestyle questions. If questions about lifestyle problems are not answered promptly, medical issues such as depression will worsen, leading to suicidal symptoms.

Objectives

The objective of this research workis:

- To perform a survey on Mumbai city college students to gather their lifestyle issues.

This paper is organized as follows: Section 2 explains the review of literature, Section 3 presents material and method, Section 4 focuses on results and Section 5 gives the discussion and conclusion of the study.

2.Review of Literatures:-This section imparts a summary of discourse on past few years of work done on students' lifestyle problems, counselling methodsand techniques to solve those problems.

Peng Yang (2012) studied 25 college students and presented them with imagery communication, psychotherapy-based community counselling for ten weeks. In the experimental sample, there were 10 boys and 15 girls with an average age of 18 to 20 from 232 colleges who were given imagery communication psychotherapy-based group counselling. An experiment found that visualization therapy helps people manage their emotions, improve their emotional health, and perfect their personalities. N. Gaur and A. Singh (2016) investigated and proposed a model for a systematic diet and nutritious eating. They introduced an information retrieval-based recommender scheme to assist young people with maintaining healthier eating habits, which would improve their energy and job performance.

So, J. C., and Lam, D. S. (2015) investigated the connection between engagement in school activities and the creation of four core generic competencies among science and technology students. The results show that high levels of involvement had a positive influence on students' presentation and problem-solving abilities, but the effect varied by cohort.J. C. and D. S. Lam (2015) looked at the connection between participation in school activities and the development of four core generic skills in science and technology students. High levels of participation had a positive impact on students' presentation and problem-solving skills, according to the findings, but the effect differed by cohort.The findings of the study revealed that educators' teaching effectiveness, study patterns, distraction factors, and the student's family atmosphere are all important predictors of college students' academic success.

Liu, Y., et.al. (2017) suggested a mobile sleep scheduling method that included self-regulated learning interventions and cognitive behavioral therapy. This model assists students in planning their daily schedules by assisting them in setting goals, implementing plans, tracking their life process, and changing strategies in order to develop good learning and safe lifestyle behaviors.A number of 18 undergraduate students from a northern Taiwanese university took part in a two-week trial of this management scheme. The experimental results revealed that the proposed method was both useful and simple to use for the students.Embarak, O. H. (2018) conducted analysis to determine the big fits based on students' personality characteristics and important personality patterns that influence focus.

Tang, J. C., et al. (2019) concluded from their study that parental style and the teacher-student partnership have an effect on high school students' self-directed education.S. Inagaki et al. (2019) proposed instructional methods for preventing and improving Internet addiction by allowing high school students to grow their "knowledge" and then analyze the effects.Hasanbasic, A. et al. (2019) used wearable monitors to track 10 learners throughout tests in order to determine their stress levels. Different classification techniques used characteristics of the electrocardiogram and electro dermal activity signals as data. The obtained results showed that recognition accuracy for three grades, including relax condition, written test, and oral exam, is between 86 and 91 percent.

N. Mavuso et al. (2020) undertook research to see whether student smartphone ownership and use could be linked to mobile use in teaching and learning. The use of a comparative case study approach was considered. An online questionnaire was used to involve students at a particular institution.Students are hooked to their electronic devices, according to the findings.Meng, X., and Zhang, J. (2020) worked on college students' psychological wellbeing and mental health concerns. Using a Takagi-Sugeno-Kang (TSK) fuzzy scheme and deep features strategies, the researchers suggested a way to automatically classify college students' anxiety.

3Material and Method:-We designed an online questionnaire using Google Form. The questionnaires were divided into five categories where the college students of age groups between 17 and 23 were asked to type in their queries in English. The five categories were: -

1. Academic
2. Addictions
3. Personality
4. Spiritual
5. Relationship.

The query form was filled by students of Mumbai region. The total number of students who filled the form were 816 which is attributed to 1298 queries in different categories.

4Result:-The data analysis process conducted after the data collection and the following issues were observed in defined categories.

Academic: Sleep during Study Time, Exam Stress, Disappointment after result, Marks Expectation, Concentration, Study, Insecure about Future, Time-management, Family Pressure for Job, Financial Issues for study, Hesitation while answering in class, Nervous in exam, Patience for study

Personality: Overthinking, Procrastination, Stage Fear, Suicidal Thoughts. Regulate Lifestyle, Anxiety, Success, Failures, Can't Sleep early, Maturity, Fear of Speaking,

Honest, Emotions, dealing with classmates, Violent, Shy, Introvert, Ego, Distractions, Social-media, Anger, Fear, Depression, Laziness, Financial Hardship, Hopelessness, Temptation, Lust, Confusion, Envy, Demotivation, Greed, Pride, Discrimination, Health, Wickedness, Ignorance, Negative Thinking, Stress, thinking about Past, Failure Right Decision, Trust, Low confidence, Jealous, Mood Change, Lying, Steal, Self-confidence, Weak Decision making

Relationship: Loneliness, Death of loved one, Marital Relationship, Parents, Girlfriend, Boyfriend, Love, Friends, Dealing with Teachers, Dealing with Parents, Dealing with Seniors, Attraction towards Opposite Sex, Divorce, Frustration, Dating before Marriage,

Addictions: Intoxications, Gambling, Meat eating, Illicit Sex, Porn addiction, Masturbation, Alcohol, Drugs, Drinking, Cigarettes, Steroids, Smoking, Tobacco, Internet Addiction, YouTube Addiction, Phone/Mobile Addiction, Sex Desires, Abusive words, Mobile game addictions

Spiritual: Bhagavad-Gita, Hell, God, Evidence for God, Evolution, Brahma Muhurta, Simple Life, Meditation, Religion, Life After Death, Relationship with God, Vedic Scripture, Sinners, Imposters, Krishna, Origin of Everything, Peace formula, Yoga, Sinful Activities, Science of Soul, Body, Karma, Reason of Suffering, Time, Free Will, Death, Maya, Krishna Consciousness, Animal Body, Purpose of Life, Chemical Life, Reincarnation, Gates to Hell, Abortion, Life Ups and Downs, Demigods, Material Education, Spiritual Education, Caste System, Symptoms of Purity, Peace of Mind, Happiness, Superstitious, Wake-up early, Material Nature, Kingdom of God, Bhakti Yoga, Women Protection, Charity, Theistic, Atheist Chanting, Diet

I) Facts obtained from online questionnaire form:

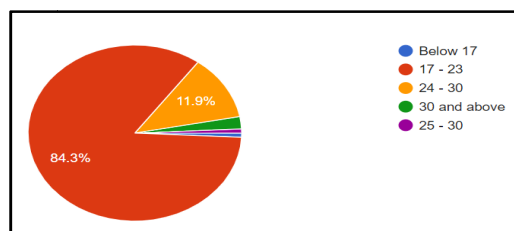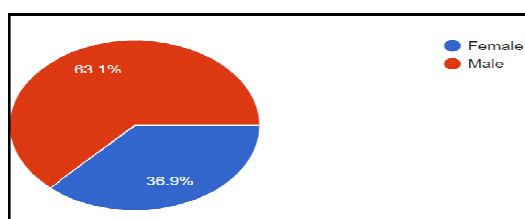Fig.1 Percentage of boys and girls filled form

Fig. 2 Response from different age group of students

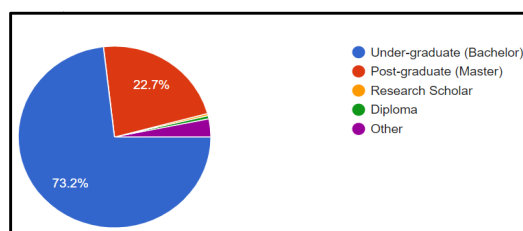Fig. 3. Number of students belonging different academic levels
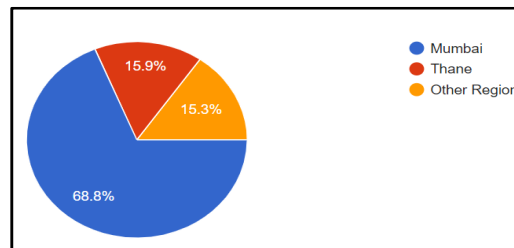
Fig. 4 Students belonging to Regions
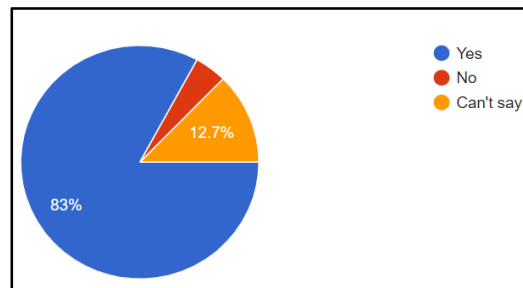

Fig. 5 Students believing in God

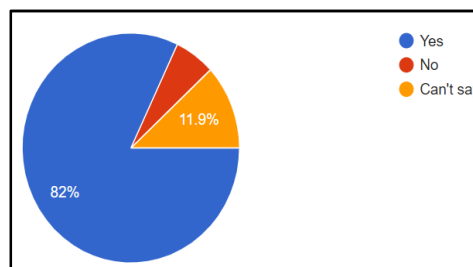Fig. 6 Students trust in Holy Scriptures

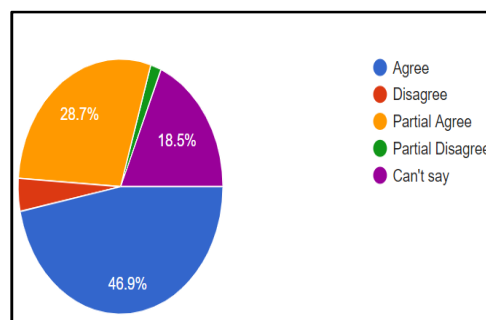Fig. 7 Students view on practical application of Holy Scripture knowledge

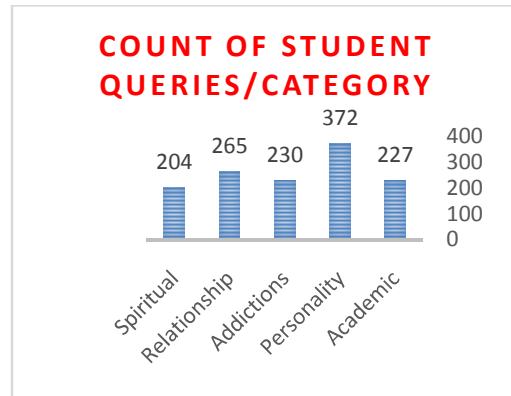Fig.8 Count of student queries/ categories

Fig. 9: Word frequency of queries

5   Discussion & Conclusion:-This survey was conducted to gather the problems/issues which college students face in the age group between 17 and 23. After the survey, we analyzed the data and following stats and facts were obtained.

- 63.1% of boys and 36.9% of girls filled the questionnaire form.
- 84.3% of students in the age group between 17 and 23 responded in an online survey.
- 73.2% under-graduate, 22.7% post-graduate and 4.1% includes research scholar, diploma students filled the questionnaire form.
- Around 85% students from Mumbai and Thane regions gave responses to survey form.
- 83% of students believe in God.
- 82% of students believe in Holy scripture likeBhagavad-Gita, Bible, Quran.
- 46.9% of students agree with the question- "Does the Holy Scripture have solutions to all your problems?"
- 17% queries were related to 'academic', 29% issues asked related to 'personality', 18% questions entered related to 'addictions', 20% queries associated to 'relationship' and 16% queries related to 'spiritual'.

These facts emphasize that following steps are necessary to work on lifestyle issue of students.

- Good mental support from parents' side.
- Requirement of a good counselling system for college students.
- Friendly environment is required.
- Just providing education in big schools and good modern facilities are not the solution. To cultivate spiritual knowledge with life-core values teachings are also important.

References

[1] Peng Yang. (2012). Effect of imagery communication psychotherapy-based group counseling on mental health and personality of college students. 2012 International Symposium on Information Technologies in Medicine and Education. doi:10.1109/itime.2012.6291424

[2] Gaur, N., & Singh, A. (2016). Recommender system — making lifestyle healthy using information retrieval. 2016 2nd International Conference on Next Generation Computing Technologies (NGCT). doi:10.1109/ngct.2016.7877463

[3] So, J. C., & Lam, D. S. (2015). Relationship between student development activities and core generic competencies among tertiary science and technology students. 2015 IEEE

International Conference on Teaching, Assessment, and Learning for Engineering (TALE). doi:10.1109/tale.2015.7386045

[4] ARORA, N., & SINGH, N. (2017). FACTORS AFFECTING THE ACADEMIC PERFORMANCE OF COLLEGE STUDENTS. I-manager's Journal of Educational Technology, 14(1), 47-53. doi:10.26634/jet.14.1.13586

[5] Liu, Y., Wang, L., Chu, H., & Yang, C. (2017). Development of a mobile sleep-management system for improving students' lifestyles based on a self-regulated learning strategy. 2017 6th IIAI International Congress on Advanced Applied Informatics (IIAI-AAI). doi:10.1109/iiai-aai.2017.179

[6] Embarak, O. H. (2018). Debrief students personality to detect the best computing major. 2018 Fifth HCT Information Technology Trends (ITT). doi:10.1109/ctit.2018.8649490

[7] Tang, J. C., Zhang, Y. T., & Chen, Y. W. (2019). Influences of parenting style and the teacher-student relationship on self-directed learning of high school students: The mediating effect of core self-evaluations. 2019 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM). doi:10.1109/ieem44572.2019.8978950

[8] Inagaki, S., Wada, Y., &Horita, T. (2019). Preventive education for high school students' internet addiction by being aware of the actual usage of the internet. 2019 8th International Congress on Advanced Applied Informatics (IIAI-AAI). doi:10.1109/iiai-aai.2019.00053

[9] Hasanbasic, A., Spahic, M., Bosnjic, D., Adzic, H. H., Mesic, V., &Jahic, O. (2019). Recognition of stress levels among students with wearable sensors. 2019 18th International Symposium INFOTEH-JAHORINA (INFOTEH). doi:10.1109/infoteh.2019.8717754

[10] Mavuso, N., Jere, N., &Matsebula, F. (2020). An evaluation of students addiction to mobile devices at a South African University. 2020 International Conference on Artificial Intelligence, Big Data, Computing and Data Communication Systems (icABCD). doi:10.1109/icabcd49160.2020.9183883

Diversity and Density of Insect Pests of Brinjal (*Solanummelogena* L) crop from Nazare (M.S)

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Abstract

Present study was carried out abundance of insect pest associated with diversity and density of Brinjal (*Solanummelogena*L) crop. Total 12 species insect pest belongsto the 5 orders were affecting the Brinjal crop from vegetative to reproductive stage of crop.4 species of insect pest were major crop pest infested early stage of crop development,recordedthe major and minor insect pest on brinjal crop.

Keywords:-Diversity,Density, Major crop pest, Density. Brinjal crop.

Introduction:-The brinjal (*Solanummelongena*. L) also commonly called as egg plant belonging to the family *Solanaceae*. Brinjal is one of the most popular crops cultivated throughout the world including India also. In India total annual brinjal averagecultivation production 1,23,33 lakh tones during 2016-17 (Anonymous 2017). Brinjal is mainly cultivated in Indian stateare Karnataka, Andhra Pradesh west Bengal, Maharashtra, Tamilnadu, Uttar Pradesh, Orissa, Bihar and Rajasthan. Brinjal contain highland attitude value as minerals like iron calcium phosphorous, vitamin A,B and C also. In Indiaunripened fruit mainly used primarily as vegetable food. Brinjal contain low calories, fats, water, some protein, fibres and carbohydrates (Gopal*et al.,* 2013). In vegetable cost of brinjal mainlydamage due to the low quality caused by serious infestation of brinjalcrop pest.Brinjalcost mainly decreases there production due to the infestation of a brinjal crop pest. Insect can damages various parts of plants as leaf, fruit, shoot also. Insect attack on crops shows a common symptoms as yellowing and willing of affected shoot (Hedge *et al.,*2009) .Yield loss due to the insect pest (Chakraborh and Sarkar. 2011).

Material and Methods:-The present study was conducted at Nazare, TahsilSangola, District Solapur during 2017- 2018. The study was conducted at 1st week July and end with the 2nd week of December. Randomly selected one hector crop field for preset study.The agriculture field divided in to randomly 5 zones were selected for the study of diversity of insect pest for the study of diversity of insect pest of brinjal. The diversity were measured by 5sights were selected consisting in 5 plants randomly. This method suggested by Healthcare (1972) and Satpthy 1873).

Result: In preset study 12 species were recoded from 5 order are Aphid (*Aphis gossypii*)**, Pod bug (*Anoplocnemisphasiana*), Whitefly (*Bemisiatabaci*). Brown leafhopper (*Cestiusphycitis*), Leafhopper (*Amrascadevastans*), Mealy bug (*Coccidohystrixinsolitus*), Budworm (*Scrobipalpablapsigona*), Leaf roller (*Antobaolivacea*), shoot and fruit borer (*Leucinodes orbonalis*),**Leaf webber (*Psarabipunctalis*) **Brown leafhopper (*Amrascadevastans*),** Thrips (*Thripstabaci*)**,** Ash weevil (*Micraspis discolour*)**.The major number of insect crop recorded from order Hemiptera including 6 species.** The minimum number of species of insect pest recoded from orderThysanoptera and Coleoptera consists of only one species. Order Lepidoptera recorded 4 species of insect crop pest. In present study density of various insect pests was recorded. The maximum mean density and relative density

was observed in Ash weevil (27.97, 41.16), shoot and fruit borer (14.2, 2.89), Thrips (13.93, 2.50), Whitefly (1.76, 2.58) Leaf hopper (7.11, 10.46), Mealy bug (1.43, 2.10), Aphid (0.64, 0.94), leafhopper (0.17, 0.25), Budworm (0.15, 0.22), Pod bug (0.08,0.11) , Leaf roller (0.05, 0.08), Leaf Webber (0.03, 0.50) respectively (Table-2). . Latif *et al.,* (2009) recorded total twenty species of damaging arthropods species under 17 families belonging to 6 orders. More mean density of Ash weevil as 27.97 and very low mean density as Leaf Webber 0.03 and also high relative density of Ash weevil (41.16) and low relative density leaf roller (0.08) (Kumar et al., 2018. In preset study similar type of study was carried out.

This data was analyses to mean density and relative density:

Mean density= ∑ Xi

N

Where, Xi= Number of insects or natural enemies in ist sample per month

N= Total number of plants sampled.

Relative density (RD %)=

Number of individual of one species

_____×100

Total number of individual of all species

Table No.1 Diversity of insect pest on brinjal crop duringkharifseason.

Sr. No	Common Name	Scientific Name	Order	Family
1	Aphid	Aphis gossypii	Hemiptera	Aphididae
2	Pod bug	Anoplocnemisphasiana	Hemiptera	Coreidae
3	Whitefly	Bemisiatabaci	Hemiptera	Aleyrodidae
4	Brown leafhopper	Cestiusphycitis	Hemiptera	Cicadellidae
5	Leafhopper	Amrascadevastans	Hemiptera	Cicadellidae
6	Mealy bug	Coccidohystrixinsolitus	Hemiptera	Pseudococcidae
7	Budworm	Scrobipalpablapsigona	Lepidoptera	Gelechiidae
8	Leaf roller	Antobaolivacea	Lepidoptera	Noctuidae
9	shoot and fruit borer	Leucinodes orbonalis	Lepidoptera	Crambidae
10	Leaf webber	Psarabipunctalis	Lepidoptera	Pyralidae
11	Thrips	Thripstabaci	Thysanoptera	Thripidae
12	Ash weevil	Micraspisdiscolor	Coleoptera	Coccinellidae

Table No.2Diversity and Density and of crop pest on brinjal.

Sr. No	Common Name	Scientific Name	Order	Family	Mean Density	Relative Density
1	Aphid	Aphis gossypii	Hemiptera	Aphididae	0.64	0.94
2	Pod bug	Anoplocnemisphasiana	Hemiptera	Coreidae	0.08	0.11
3	Whitefly	Bemisiatabaci	Hemiptera	Aleyrodidae	1.76	2.58
4	Brown leafhopper	Cestiusphycitis	Hemiptera	Cicadellidae	0.17	0.25
5	Leafhopper	Amrascadevastans	Hemiptera	Cicadellidae	7.11	10.46
6	Mealy bug	Coccidohystrixinsolitus	Hemiptera	Pseudococcidae	1.43	2.10
7	Budworm	Scrobipalpablapsigona	Lepidoptera	Gelechiidae	0.15	0.22
8	Leaf roller	Antobaolivacea	Lepidoptera	Noctuidae	0.05	0.08
9	shoot and fruit borer	Leucinodes orbonalis	Lepidoptera	Crambidae	14.2	2.89
10	Leaf webber	Psarabipunctalis	Lepidoptera	Pyralidae	0.03	0.50
11	Thrips	Thripstabaci	Thysanoptera	Thripidae	13.93	2.50
12	Ash weevil	Micraspisdiscolor	Coleoptera	Coccinellidae	27.97	41.16

Graph 1:Mean density of insect pest on brinjal crop during kharif season
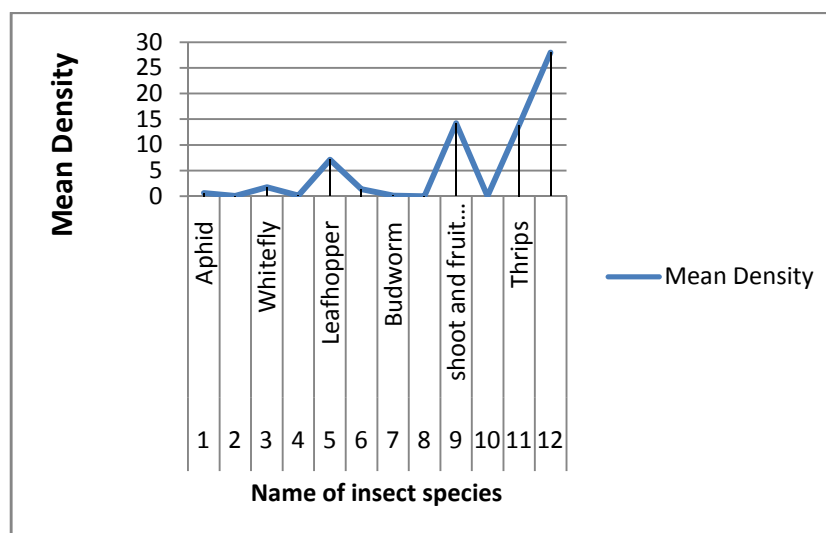
Graph 2: Relative density of insect pest on brinjal crop during kharif season
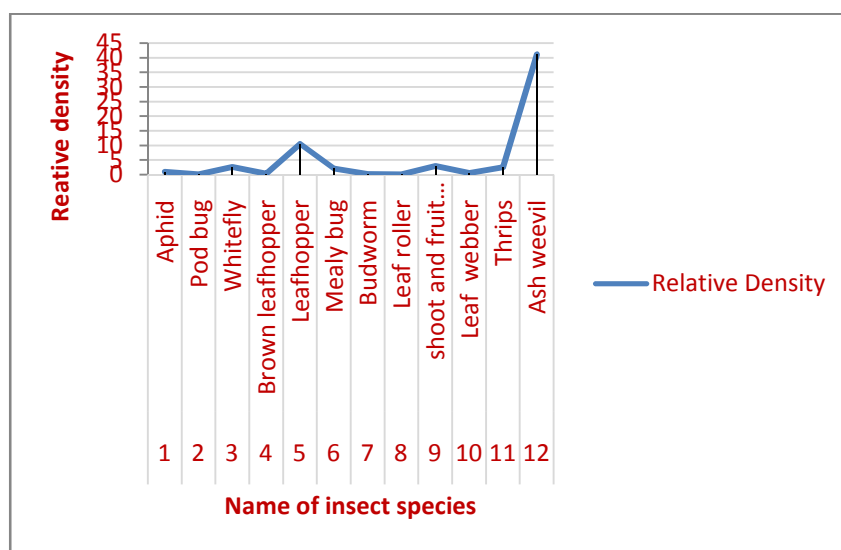
Dicussion:-In preset study different types of insect pest observebelonging to the order Hemiptera, Lepidoptera, Thysanoptera, Coleoptera (Latif *et al.,*2009).Bhadauria,et al., (1999) recorded most commo types of insect belonging to the different orders species jassid, aphid, leaf roller, stem borer, fruit and shoot borer from MadhyaPradesh, India. Many researchers reported thatBrinjalmainly damaged by Shoot and fruit borer, Jassid, Thrips, White fly.

References:-

1.Atwal, A. S. and Dhaliwal, G. S. 1976. Agricultural Pests of South Asia and their Management, Kalyani Publishers, Ludhiana.

2.Axmacher J C, G Brehm, A Hemp, et al. 2009. Determinants of diversity in afro tropical herbivorous insects (Lepidoptera: Geometridae): plant diversity, vegetation structure or a biotic factors? Journal of Biogeography,36 (2): 337–349.

3.Behera, T. K., Singh, N., Kalda, T. S. and Gupta, S. S. (1999). Screening for shoot and fruit borer incidence in egg plant genotypes under Delhi condition. Indian J. Ento., 61: 372-375.

4.Bhadauria, N. K. S., N. S. Bhadauria and S. S. Jakmola. 1999. Insect pest complex of brinjal, *Solanummelongena*Linn. In north-west Madhya Pradesh. Adv. Plant Sci.12: 607-608.

5.Enotmology. 11th edn. Tata MeGraw-Hill Publ. Co. Ltd. 4/12, Asaf Ali Road, New Delhi-110002. pp. 557.

6.Heathcote, G. C. 1972. Evaluating of aphid population on plants. : Aphid Technology (Ed. H.V. Van Emden.) Academic Press, New York. pp. 105-145.

7.Huston M. 1979. A general hypothesis of species diversity. The AmericanNaturalist, 113: 81–101.

8.Lal, B. S. 1964. Vegetable pests: Entomology in India, Entomological Society of India, IARI, New Delhi,pp.187- 211.