WEB BASED LEARNING REGARDING GROWTH AND DEVELOPMENT: A REVIEW

Ms MamtaYadav[1], Mr. Surendra Sharma[2], Ms Supreet Rupam[3]

M.Sc. Nursing student[1], Associate Professor[2], Assistant Professor[3]

Amity College of Nursing, Amity University, Haryana.

Abstract

Education in its general sense is form of learning, in which knowledge, skills and habits of a group of people are transferred from one generation to the next through teaching, training or research. The advancements of Information and multimedia technology and the use of internet as a new way of teaching has a made are evolutionary changes in the traditional teaching process

The main aim to conduct a review on how web-based education that can improve learning and teaching in students. It can be self-paced or instructor-led and includes media in the form of text, image, animation, streaming video and audio. Studies shows that web-based education has an effective teaching method for E-Education it has positive impact on E-Education among college students.

Key words- web based learning, growth and development.

Introduction:

A toddler is a young child who is of the age of learning to walk between infancy and childhood. During the toddler stage, the child also learns a great deal about social roles, develops motor skills, and first starts to use language.[1]

During the toddler years, child will rapidly change and grow, learn skills, and be able to interact with the world in new and different ways. This process is known as development, and it encompasses several areas, including cognitive development, physical development, language skills, and social development.[2]

Technological change, which not only permits new activities but makes those new activities superior in many important ways over the previous method of operation, creates long lasting innovations in society. Web-based education is one of those innovations. [3]

The review of literature had been done here under the following subheadings:

I. Literature related to growth and development of toddler.

II. Literature related to growth and development of children.

III. Literature related to effectiveness of web based.

I. LITERATURE RELATED TO GROWTH AND DEVELOPMENT OF TODDLER:

Murdiningsih, Nurul Komariah (2017) conducted a study in srijaya of Palembang city is to analyze the correlation between knowledge and parenting patterns with toddler's growth and development in Pre-school class in urban area of Srijaya of Palembang city within year 2017. This study is an observational research with a Cross-sectional study design; it was conducted in September to October 2017. Research Samples are all toddler who follow the Pre-school class in Srijaya Palembang in year 2017 that meet the criteria of inclusion and exclusion. The instrument use questionaire for knowledge and collection of biodata. For parenting variables we use Parenting Style Questioner (PSQ). In growth variable we do the measurement of body weight and height, while variable of development done by using KPSP. The result is there is correlation between mother's knowledge with child growth (p=0.047) and child development (p=0.001). There is relationship between parenting pattern with child growth (p=0.047) and child development (p=0.001). The conclusion shows there is correlation between mother's knowledge with child growth and development and there is correlation between parenting pattern with growth and development of child. [4]

Adila Abdul kareem, Alphonse Augustine (2019) conducted a study to investigates the "Effectiveness of structured teaching programme on knowledge of mothers regarding growth and development of toddlers at selected Anganwadis of Vazhayoor Panchayath". The study was conducted among 30 mothers of toddlers who were attending the Anganwadis of Vazhayoor Panchayath, Malappuram district. Nola J Pender's Health Promotion Model has been used as the theoretical framework for the study. A quantitative approach with a pre experimental one group pretest posttest design was used for this study. A pretest has been conducted among 30 mothers of toddlers attending the Anganwadis and the pretest scores were calculated. Further a structured teaching programme was given and a posttest was conducted. The posttest score compared with pretest score by using descriptive and inferential statistics to identify the effectiveness of STP. The results of the study revealed that among the 30 sample 21(70%) had inadequate knowledge and 9(30%) had adequate knowledge before the educational intervention. On the other hand out of 30 sample 23(76.6%) have adequate knowledge and rest

7(23.3%) have inadequate knowledge after the educational intervention.There is no association between pretest knowledge score and socio demographic variables. [5]

Lalruatsangi Khiangte (2018) conducted a study in Guwahati , Assam to assess and compare the growth and development among 40 toddlers of working and non-working mothers residing in Mathura Nagar and Dwaraka Nagar, Guwahati. Assam. Comparative descriptive survey research design and Purposive sampling technique was used to select 40 toddlers Data was collected by questionnaire on demographic proforma and developmental milestone of toddler. Anthropometric measurement of the toddlers was taken using weighing machine to measure the weight of the child and measuring tape to measure the mid upper arm circumference. The result shows that the independent 't' value of the weight, mid upper arm circumference, gross motor development, fine motor development, language development, cognitive development, selfhelp development and social development was found to be t= 0.879, 1.304, 0.079, 0.713, 0.133, 0.078, 0.283, 0.623 respectively, which were not significant at $p<0.05$ levels of significant. The mean weight of toddlers of working mother was $\bar{x}=11.67$ while in toddlers of non-working mother it was $\bar{x}=11.32$. The mean mid upper arm circumference of toddlers of working mother was $\bar{x}=13.22$ and in toddlers of nonworking in mothers it was $\bar{x}= 13.35$. The finding of the study revealed that there is no statistical significant difference between the growth and development among toddlers of working and non-working mothers. [6]

Anita Shankar Acharya, et.al. (2019) conducted a study in Delhi for the Assessment of growth and development of toddler The study was a pilot study designed as healthy baby show contest at an urban health center (UHC) in a resettlement colony of east Delhi. A total of 36 mother–child pairs (children were in the age group of 0–3 years) were enrolled at the UHC for the comprehensive assessment of the child using healthy baby scorecard. Weightage was given to growth which was assessed by three criteria: weight for age, length/height for age, and weight for length/height. In-depth interviews of mothers were conducted to assess their understanding about child development. The results shows that Overall, 61.1% (n = 22) of participants showed satisfactory nutritional status. Of 14 children with poor nutritional status, 50% of mothers perceived their child to be healthy. Exclusive breastfeeding was present in only 10% of the participants. Correct knowledge about child's normal development was present in 17%–30% of the mothers for various aspects of child rearing. The conclusion revealed that child-rearing practices were not conducive for the child's normal development and growth. The main factors are poor knowledge of mother in the concept of child development and child-rearing practices besides other factors such as social and cultural. [7]

Rebecca J Scharf et. al(2016) conducted a study to examine the relationships between growth (birth to age 2 years) and developmental outcomes in children born with very low birthweight (VLBW). Design was Motor and mental development in children born with VLBW were regressed on anthropometric measurements at birth, 9 months and 2 years using multivariable regression. The Early Childhood Longitudinal Study—Birth Cohort, a longitudinal cohort, community sample, designed to be representative of children born across the USA. Patients—

950 children born with VLBW . A high proportion of children exhibited poor growth, with length-for-age z-scores −2, children with growth shortfalls in head circumference, length and weight had a higher adjusted OR (aOR) of low Bayley motor scores at 9 months and 2 years , while low Bayley cognitive scores were predicted by 9-month deficits in length and weight and 2-year deficits in length and head circumference. The conclusion of the study is Anthropometric measures of growth were linked to current and future neurodevelopmental outcomes in children born with VLBW. While careful length measures may be a particularly useful marker, deficits in all anthropometric measures were risk factors for developmental delays. [8]

II. LITERATURE RELATED TO GROWTH AND DEVELOPMENT OF CHILDREN:

Uma Negi et. Al. (2017) conducted a quasiexperimental study on School children to evaluate the effectiveness of structured teaching programme on knowledge regarding IMBP in primary school children among teachers and to find out the association between the knowledge score of primary school teachers and selected demographic variable. one group pre-test post-test design was conducted in selected primary schools of Doiwala, Uttarakhand. The study was confined to sixty six primary school teachers who fulfilled inclusion criteria. Pre-test was taken with the help of structured knowledge questionnaire and administered STP on IMBP using posters, PPT and charts. Post test was conducted after 7 days of intervention using same questionnaire. The study shows that in pre test mean knowledge score was 23.9 and in post test it was 38.51 and 't' calculated value is 27.58 which is more than the tabulated value of 2.00 at 0.05 level of significance. The findings of the study revealed that there was significant gain in knowledge score of primary school teachers after STP. So the study concluded that structured teaching programme had a great potential for accelerating the awareness regarding behavioural problems. [9]

Atul Kumar , Mahalingam Venkateshan, Selvi (2016) conducted a quasiexperimental study on Adulthood is the pinnacle of all stages of human growth and development. The main aim of the study was to evaluate the effectiveness of structured teaching programme on knowledge regarding sexual health among young adults. Quasi experimental one group pre-test and post-test research design was used. Sixty young male adults were selected by using non probability convenient sampling. After the pretest structured teaching programme (STP) on sexual health was implemented among young male adults and on 15th day of STP post-test was done by using the same tools. The results shows during the pre-test majority (91.7%) of males had inadequate knowledge regarding sexual health .The mean knowledge score was significantly increased from pretest (9.80±1.7) to post test (24.10±2.19) where the mean difference was 14.30. The demographic variables like age, education and marital status had significant association with the post-test knowledge score. [10]

Laxmikanth S Bhangennavar, Sumitra La (2017) conducted a study in Belagavi, Karnataka. The objectives of the study were to assess the existing knowledge regarding growth and development among the mothers of an infant, to evaluate the effectiveness of STP, to find out an association between pre-test knowledge scores with selected socio- demographic variables. A descriptive method research designed was adopted and data were collected by purposive sampling technique from selected 60 mothers of an infant admitted in pediatric ward at KLE Dr. Prabhakar Kore Charitable Hospital, Belagavi, Karnataka, using structured questionnaire. The result shows main pre-test knowledge scores (89.69%) was higher than the mean post-test scores (17.72%) and paired "t" test calculated value (51.78%) was higher than tabulated value (1.96). Conclusion: The study concludes that the education is an effective method for providing knowledge regarding growth and development among mothers of an infant. [11]

Arun Raj GR, Shailaja U, Rao Prasanna N (2013) was studied an ayurvedic perspective on growth and development of children . Growth is an essential feature of life of a child that distinguishes him or her from an adult. The process of growth starts from the time of conception and continues until the child grows into a fully mature adult. Development refers to qualitative and quantitative changes and acquisition of a variety of competencies for functioning optimally in a social milieu. Further development is a continuous process from birth to maturity.. It may be stressed that, besides 10% prevalence of developmental delay, the early identification of such problems remains difficult.There are different factors explained in Ayurvedic classics which are going for the maintenance and promotion of growth and development in children. This paper throws light on all those concepts aiding in a positive build-up of child's growth and development. [12]

Shilpa Akkinen , Phanikanth Kondaparthi (2014) conducted a study to assess the caregivers' knowledge about child development and to study the association between caregivers' knowledge and sociodemographic parameters. 110 Caregivers of children presenting to the child psychiatry OPD were screened for assessment criteria. A semistructured intake proforma was administered to collect the sociodemographic details. Results was 84% of caregivers were mothers. On an average, caregivers were able to answer only 36% of the questions correctly. Maternal age (p=0.048) and maternal education (p=0.009) were identified to be significant predictors of higher CKCDI scores. The conclusion was Caregiver's knowledge regarding the child development is low. Younger mothers and higher maternal education are associated with higher knowledge about the development of their children. [13]

Enrique Villarreal-Ríos et. Al (2021) conducted a study Growth and development reflect the child's health condition. Currently, child care is supported in daycare centers. We conducted an analytical cross-sectional study in children aged 25 to 48 months. Two groups were identified: 68 children attended daycare, and 68 children did not attend daycare. Growth was assessed with weight-for-height curves, and psychomotor development was evaluated with the child developmental assessment instrument (psychosocial, language, psychomotor, and cognitive area). The X2 test was used for statistical analysis. Results was The percentage of daycare children with

ideal weight was higher than those not attending in daycare (p = 0.035). Psychomotor development was significantly higher in daycare children: in the psychosocial (p = 0.000), language (p = 0.000), motor (p = 0.000), and cognitive development (p = 0.000) areas. The conclusion is psychomotor development of children attending daycare centers is superior to that of children not in daycare centers. [14]

Deepika David (2014) et. Al. conducted a study to assess the knowledge of mothers regarding developmental milestones of infant and to ascertain the relationship of knowledge of mothers with selected demographic variables . A non experimental , descriptive study conducted in various child care areas of selected hospital Ludhiana, Punjab. The study sample consisted of total 100 mothers of infants from child care areas. Data was analyzed by inferential statistics and presented through tables and figures. Findings revealed that maximum number of mothers (53%) had good knowledge score regarding developmental milestones of infants. Mean percentage and rank order of knowledge score was highest in introduction (63% and rank 1st) and lowest in the area of social development (21% and rank 6th). Variables i.e. age, parity, educational status, occupation, monthly family income, source of information, place of living and number of children were found to be non significant. [15]

III. LITERATURE RELATED TO EFFECTIVENESS OF WEB BASED.

Hyosook Jung et. al. was conducted a study Seoul , Korea. The use of the Web (World Wide Web) has had many positive effects on education. It overcomes time and space limitations in traditional schools. Teachers and students are now using the Web to access vast amounts of information and resources in the cyberspace. Also, learning via the Web enables both synchronous and asynchronous communication. Despite of many benefits of the Web, it may weaken students' motivation due to lack of face-to-face communication. In this paper, we provide a learning model called Web Project Learning, which is based on the principles of contructivism, to provide motivation and collaborative learning for students in the Web environment. The model is based on the Project-Based Learning model and is revised for use on the Web. The model can also encourage the participation of parents as well as students, and be applied to any subject. We implement our model and show that it can be applied for environmental education as an instance. [16]

S.R.Bharamagouda et. Al. was conducted a study in Andhrapradesh. Student Information Management System (SIMS) provides a simple interface for maintenance of student information. It can be used by educational institutes or colleges to maintain the records of students easily. The creation and management of accurate, up-to-

date information regarding a students' academic career is critically important in the university as well as colleges. Student information system deals with all kind of student details, academic related reports, college details, course details, curriculum, batch details, placement details and other resource related details too. It tracks all the details of a student from the day one to the end of the course which can be used for all reporting purpose, tracking of attendance, progress in the course, completed semesters, years, coming semester year curriculum details, exam details, project or any other assignment details, final exam result and all these will be available through a secure, online interface embedded in the college's website. Different reports and Queries can be generated based on vast options related to students, batch, course, faculty, exams, semesters, certification and even for the entire college. [17]

A.J.Kadam et. Al. was conducted a study in Maharashtra , India. The main objective of this project is to add mobility and automation to the process of managing student information in an institute. In a real world scenario, such as college campus, the information is in the form of notice, hand-written manual, verbal message, is being spread among the students. The application will be used by students, teachers and parents. In the previous system, all the information has to view in a hard file, or in website. At the same time while searching any information it is too difficult to access and takes a lot of time to search the particular website. The Android platform provides a number of algorithms for encrypting sensitive information.Some of these algorithms provide stronger cryptographic guarantees in protecting data than others. Cryptographic algorithms are harder to break when there is more unpredictability in the random numbers generated for use in encryption. A way of introducing unpredictability in Android is to use the Secure Random class. The need for encryption is twofold. Firstly, encryption makes it difficult to read and use any sensitive information that an app stores on a device. Secondly, encryption adds an additional layer of security to sensitive information that is exchanged between apps and remote server [18]

Nicol Nijland et. Al, was conducted a study in Netherlands. The aim of this study was to explore the factors that influence the initial and long-term use of a Web-based application (DiabetesCoach) for supporting the self-care of patients with type 2 diabetes. A mixed-methods research design was used for a process analysis of the actual usage of the Web application over a 2-year period and to identify user profiles. Research instruments included log files, interviews, usability tests, and a survey. The result showed that the Diabetes Coach was predominantly used for interactive features like online monitoring, personal data, and patient–nurse email contact. It was the continuous, personal feedback that particularly appealed to the patients; they felt more closely monitored by their nurse and encouraged to play a more active role in self-managing their disease. The main barrier to enrollment had to do with a lack of access to the Internet (146/226, 65%). Although 68% (34/50) of the enrollees were continuous users, of whom 32% (16/50) could be defined as hardcore users (highly active), the remaining 32% (16/50) did not continue using the Web application for the full duration of the study period.

Patients with a greater need for care seemed to be more engaged in long-term use; highly active users were significantly more often medication users than low/inactive users (P = .005) and had a longer diabetes duration (P = .03). Conclusion is Innovations in health care will diffuse more rapidly when technology is employed that is simple to use and has applicable components for interactivity. [19]

Minal Kumari et. Al. was conducted a study to assess the effectiveness on mobile based learning. Mobile applications are being developed at a rapid speed and are intensively used by students. It can help to achieve better performance in organizing, managing and monitoring classroom activities. The aim of the study was to assess and compare the knowledge and practice regarding FBNC among nursing students in MBL group and MABL group before and after the administration of MBL and MABL. The conceptual framework of the study was based on CIPP model by Stufflebeam. The research approach adopted for the study was quasi-experimental and design was non-equivalent comparison group pre-test and post-test design. The study was conducted at two nursing colleges of Ambala, Haryana. A total of 70 BSc Nursing 3rd year students, randomly allocated to 2 groups i.e., 35 in MBL and 35 in MABL. The tool used for the study consisted of structured knowledge questionnaire and observational check list was used to assess knowledge and practices by OSCE method of nursing students regarding FBNC. Data collection was done in January 2017. The obtained data was analyzed and interpreted in terms of objectives and research. The major findings revealed that mean post- test knowledge and practices score in MBL group (21.4±0.89) and in MABL group (22.4±0.54) was significantly higher than pre-test knowledge score in MBL group (14.6±15.0) and in MABL group (16.2±17.0). Also, the mean post-test practice score in MBL group (38.1±1.91) and in MABL group (38.9±1.20) was significantly higher than pre-test practice score in MBL (20.4±3.70) as well as in MABL group (20.5±4.26). Mild positive significant relationship (r=0.03) was found between post-test score of knowledge and practices. It was concluded from the study MABL was more effective in developing the practices of nursing students regarding FBNC than MBL. [20]

Suresh Chalasani was published a paper on WEB-BASED MEDICAL INFORMATION SYSTEMS. Corporations and academia are currently exploring medical Information Systems. Medical information systems that contain information on the patients' health records, appointments, laboratory tests/results, billing and insurance in one comprehensive web site are almost nonexistent. Some of the reasons for this include privacy concerns and reluctance to invest in new technology by health-care providers. In this paper, we provide architectures for delivering medical information on the Internet. It also presents a security architecture for confidential and secure access to medical data on the internet. [21]

Nurul Fitrahminarsih N et. al (2021) conducted a study in AKBID Pelamonia Makassar to determine the influence of Web-based learning media on improving perineum rupture stitching skills for D-III Midwifery students. The Quasi-Experimental research with a non-equivalent control group design was conducted in January-February 2020 at AKBID Pelamonia Makassar. totaling 64 people who were divided into two groups of intervention and control. The intervention group I (WEB media giving) amounted to 32 people and control 32 people. The sampling technique used is purposive sampling. At the end of the meeting, a post-test was conducted. The statistical test used was the paired sample t-test and Wilcoxon test. **Results shows that** The percentage of application assessment using the Technology Acceptance Model (TAM) questionnaire to assess the application's usability level is a very good category and can be interpreted that students accept WEB-based learning media. Statistical tests showed differences in the results of measurement I and measurement II in the removal of grade II perineum rupture in the control group ($p<0.05$) and contributed 15.6%. In the intervention group I (WEB-based learning media), there were differences in skills before and after media giving ($p<0.05$) and contributed 89.8% in improving the skills of the second semester Midwifery DIII students regarding the sewing of second-degree perineum rupture. **Conclusion is** the use of Web-Based Learning Media facilitates and enhances students in performing second-degree perineum rupture sewing skills. [22]

Helene Bylow ,et.al (2019) conducted a study to compare the learning outcome in terms of practical skills and knowledge of BLS after participating in learning activities related to BLS, with and without web-based education in cardiovascular diseases (CVD). **Method was** Laymen (n = 2,623) were cluster randomised to either BLS education or to web-based education in CVD before BLS training. The participants were assessed by a questionnaire for theoretical knowledge and then by a simulated scenario for practical skills. The total score for practical skills in BLS six months after training was the primary outcome. The total score for practical skills directly after training, separate variables and self-assessed knowledge, confidence and willingness, directly and six months after training, were the secondary outcomes. **Results was** BLS with web-based education was more effective than BLS without web-based education and obtained a statistically significant higher total score for practical skills at six months (mean 58.8, SD 5.0 vs mean 58.0, SD 5.0; p = 0.03) and directly after training (mean 59.6, SD 4.8 vs mean 58.7, SD 4.9; p = 0.004). The study is concluded that A web-based education in CVD in addition to BLS training enhanced the learning outcome with a statistically significant higher total score for performed practical skills in BLS as compared to BLS training alone. However, in terms of the outcomes, the differences were minor, and the clinical relevance of our findings has a limited practical impact. [23]

Reference :

1. Surendra Sharma, "A Textbook of Pediatric Nursing" Published by Kumar Publishing House, Pitampura, Delhi, first edition, 2018, pp. 66.

2. American Academy of Pediatrics. Developmental Milestones: 2 Year Olds.

3. Franklin, Sue and Peat, Mary. (2001). "Managing Change: The Use of Mixed Delivery Modes to Increase Learning Opportunities." Australian Journal of Education Technology Volume, 17. Number, 1. Pp. 37-49.

4. Murdiningsih, Nurul Komariah ; "Knowledge and parenting patterns with toddler's growth and development" ,International Journal of Public Health Science (IJPHS) Vol. 8, No. 2, June 2019, page.179~184 .

5. Adila Abdul kareem , Alphonse Augustine , Arya O , Shine Thomas , Dr .Assuma Beevi T M , Mithu Joy. Journal of Emerging Technologies and Innovative Research (JETIR) , June 2019, Volume 6, Issue 6

6. Ms Lalruatsangi Khiangte, Journal of Emerging Technologies and Innovative Research (JETIR) JETIR1806731, june 2018 , volume 5 , issue 6 , page : 244 – 250

7. Anita Shankar Acharya, Nidhi Tiwari, Archana Thakur, Sanjeev Kumar Rasania, Damodar Bachani1 , Jyoti Khandekar **,** "Indian Journal of Medical Specialities " Volume 10 , Issue 3 , July-September 2019

8. Rebecca J Scharf, Annemarie Stroustrup, Mark R Conaway, and Mark D DeBoer , "Growth and development in children born very low birthweight"Arch Dis Child Fetal Neonatal Ed. 2016 September ; 101(5): F433–F438. doi:10.1136/ archdischild-2015-309427.

9. Uma Negi , Sanjenbam Emon Chanu , Shobha Masih , IOSR Journal of Nursing and Health Science Volume 6, Issue 4 Ver. I (Jul. - Aug. 2017), PP 05-09 .

10. Atul Kumar, Mahalingam Venkateshan, Selvi , "International Journal of Research in Medical Sciences" , April 2016 , Vol 4 . Issue 4, Page 1119 – 1123.

11. Laxmikanth S Bhangennavar, Sumitra La , "International Journal of Science and Research (IJSR)" , Volume 6 Issue 10, October 2017, Page 1972 – 1973.

12. Arun Raj GR, Shailaja U, Rao Prasanna N , "GROWTH AND DEVELOPMENT IN CHILDREN: AN AYURVEDIC PERSPECTIVE", International Journal of Ayurvedic and Herbal Medicine 3:5 (2013) Page: 1337–1342.

13. Shilpa Akkineni , Phanikanth Kondaparthi "a study to assess knowledge about child development" , Telangana Journal of Psychiatry, July-December 2020:6(2):153-159

14. Enrique Villarreal-Ríos, Cynthia Cruz-Hernánde, Karina Morales-Morales, Emma R. Vargas-Daza, Liliana Galicia-Rodrígue, Dulce M. Isassi-González, and Eduardo Guzmán-Padilla , "Comparison of growth and psychomotor development in daycare centers attended by professionals", Bol Med Hosp Infant Mex. Year 2021; volume : 78(6) page : 565 - 570

15. Deepika David, Mrs. Khushlata J. Toppo and Mrs. Kamla Saini, "a study to assess the knowledge of mothers' regarding developmental milestones of infants", International Journal of Current Research, july 2014 , volume 6 , issue 7 , page : 7524 – 7528.

16. Hyosook Jung , Woochun Jun and Le Gruenwald; "A Design and Implementation of Web-Based Project-Based Learning Support Systems"International Journal of Advanced Research in Computer and Communication Engineering, Vol. 2, Issue 8, June 2014.

17. S.R.Bharamagoudar , Geeta R.B., S.G.Totad ; "Web Based Student Information Management System" International Journal of Advanced Research in Computer and Communication Engineering, Vol. 2, Issue 6, June 2013.

18. A.J.Kadam , Aradhana Singh , Komal Jagtap, Srujana Tankala, "Mobile Web Based Android Application for College Management Sysytem" , International Journal Of Engineering And Computer Science ISSN: 2319-7242 Volume 6 Issue 2 Feb. 2017, Page No. 20206-20209.

19. Nijland et al , "Factors Influencing the Use of a Web-Based Application for Supporting the Self-Care of Patients with Type 2 Diabetes: A Longitudinal Study" , JOURNAL OF MEDICAL INTERNET RESEARCH, J Med Internet Res 2011 , vol. 13, iss. 3 , e71 | p. 1 – 16.

20. Minal Kumari, Yogesh Kumar and Parvinder Kaur , "Industrial Health, Healthcare and Medical Tourism" volume :5 , issue : 4 (Suppl) , page : 58, DOI: 10.4172/2329-6879-C1-038

21. Suresh Chalasani **, "**WEB-BASED MEDICAL INFORMATION SYSTEMS" , IACIS 2003 , Journal of computer information systems , volume 44 , issue 2 , Page 59 – 65.

22. Nurul Fitrahminarsih N , Syafruddin Syarif, Mardiana Ahmad , Budu, Yusring Sanusi B, 'Web-based learning media the skills of suturing rupture perineum of midwifery students',*The 3rd International Nursing and Health Sciences Students and Health Care Professionals Conference (INHSP),* Vol. 35. Issue S2., Pages S103-S618 (January 2021).

23. Helene Bylow ,Thomas Karlsson, Margret Lepp, Andreas Claesson, Jonny Lindqvist, Johan Herlitz , "Effectiveness of web-based education in addition to basic life support learning activities: A cluster randomised controlled trial" Published: July 11, 2019