ISSN 2320-8643 (Print) ● ISSN-2320-8651 (Electronic)

Volume 07 | Number 02 | July-December 2019

INTERNATIONAL JOURNAL OF NURSING CARE

Website: www.ijonc.com

International Journal of Nursing Care

International Journal of Nursing Care is a double blind peer reviewed international journal which has commenced its publication from January 2013. The journal is half yearly in frequency. The journal covers all aspects of nursing care. The journal has been assigned ISSN 2320-8643 (Print Version) and ISSN 2320-8651 (Online Version). The journal is Indexed in many international data bases.

ISSN 2320-8643 (Print Version) and ISSN 2320-8651 (Online Version). Frequency: Half Yearly

Editor

Dr. R.K. Sharma
Institute of Medico-legal Publications
Logix Office Tower, Unit No. 1704, Logix City Centre Mall,
Sector- 32, Noida - 201 301 (Uttar Pradesh)

Printed, published and owned by

Dr. R.K. Sharma
Institute of Medico-legal Publications
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Published at

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International Journal of Nursing Care

www.ijonc.com

CONTENTS

Volume 7, Number 2 **July-December 2019**

DOI Number: 10.5958/2320-8651.2019.00019.X

Quality of Patient Care by the Tech-Savvy Informatic-Nurses Humanizing Care- A Global Perspective

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Abstract

The concept of humanizing and quality care remain a matter of concern with technology entering different facets of healthcare. Nurses bearing the weight of patient care in all phases are experiencing ambivalence in terms of acceptability of technology into patient care. The concern of missing out on the human component as we progress to adopt informatics in all aspects of care, it is essential that the experts incorporate and pay heed towards humanizing health informatics. Nurses have traditionally been the flag bearers of holistic care and the concern about IT affecting the "core component" is genuine. The realization of tailored patient care is long been appreciated by nurses and now introduced in medicine by the name "Precision medicine". The article would discuss the impact of current and future technological advances in healthcare, its implications in healthcare and contribution towards humanizing informatics care in various aspects of care.

Keywords- *Nursing Informatics, Quality patient care, Health Information technology, Humanized Informatics, Precision Medicine*

Introduction

"May our philosophies keep pace with our technologies, may our compassion keep pace with our powers. And may love, not fear, be the engine of change"

Dan Brown, Origin[1]

The word of healthcare remains enthralled with rapid contribution of Information and Communication Technology (ICT) or wisely called the Health Information Technology (HIT). Informatic nurses can comprehend and utilize systems wherever they work very easily such as nursing information system for several purposes like risk assessment, identify challenges and promoting care; understanding the relevance in terms of time, objectivity in assessment and improving safety with such systems[2]. But the key area of focus now is to involve "patients or the general public" as partners in care.

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Humanized Informatics

The term "Humanized Informatics" might not be used officially as per this day and age but time is not far away when it will be acknowledged. As Healthcare professionals we deal with human beings everyday whether prevention, treatment or palliative, a human component is always appreciated.

The term "humanized informatics care" involves "all the efforts" that are mobilized towards "overall wellbeing of patient using technology".

Nursing Informatics and Quality patient care

The contemporary technologies that compose the major chunk of nursing informatics practices include the following:

I. Electronic Health Records- Electronic Health Records (EHRs) today focus on early diagnosis, assessments, reduction in errors through clinical alerts, reminders on quality patient care, big data analytics of patient information, holistic care with relevant inputs at one place, support in diagnostic as well therapeutic decision making, promotion of evidence based decisions at point of care, alerts for adverse events, use of built-in

system against prescribing treatments to prevent adverse events, promotion of tracking, monitoring of clinical quality[3]. With time nurses have become comfortable and are displaying positive attitude towards EHRs and other technologies[4].

Humanized care with EHRs- EHRs are bound to provide efficient and more coordinated patient care as evident by many studies[5,6]. For starters, the EHRs once in final adoption phases the overall documentation time is effectively decreased and nurses can spend more time with patients[7]. Using EHRs also promotes use of data to promote quality patient care to improve patient care experience such as root cause analysis for errors and patient overall stay in the hospital.

Interestingly introduction of EHRs is causing concern among nurses about how much time they spent with patients, with a fear that electronic documentation might hog all the limelight. Contrarily it has drawn us one step closer to the humanized care as more concerns are raised about how and where nurses spend time in patient care which evidently shows no compromise in overall patient care time and positive attitude towards electronic documentation[8,9].

II. Patient care systems and devices- monitoring devices such as cardiac monitor, glucometer, ventilators, smart beds, mobile devices, smart TVs, simulation technology, radio frequency identification (RFID) devices and advance technologies like PET scans, nuclear medicine to name a few, have revolutionized patient care for better. The patient monitoring systems have eased the life of both health professionals as well as patients with benefits like early diagnosis leading to quick actions, more reliable objective assessments, lesser chances of clinical errors to better and more assertive communication among health professionals.

Humanized care with Patient care systems- Monitoring systems are ironing many creases, to help focus health professionals on other patient needs such as communication and ability to explain many things happening around them[10]. However there are reservations about fewer nursing visits and interactions if the patient condition becomes stable. Though devices like smart TVs can help patients to be informed and be engaged about care as well what to expect next. Such devices can elaborate and coordinate overall care of the patient including ability to report pain or send non-clinical request like a meal[11,12]. Such monitoring systems are changing the face of home healthcare monitoring as the patient and nurse interaction can become really easy as health professionals can track relevant health conditions through personal health records (PHRs). Additionally these monitoring systems when planned well as public health informatics tool can provide a means of more flexible and clear line of communication among patients and health professionals which would provide effortless more humanized patient care with more strong interactions.

III. Telehealth- it allows nurses to reach population, monitor condition and interact using audio and visual technologies. Patient monitoring systems installed and connected logically through public health informatics can contribute towards patient wellness, monitoring and educational sessions.

Humanizing Telehealth- Telehealth has been utilized fully by many centers with interaction among professionals globally. Revolutionary steps are happening with many private and government organizations to reach patients through telehealth. Telehealth is focusing not only in rural but urban population as well and has several advantages. It is connecting remote patients to various health professionals which saves patient travel and time for basic checkups to seeking second opinions. Many startups are applying the concept of telehealth to expand the use of simple technologies like apps such as WhatsApp, telephone or video calling[13]. These systems will control the factors that might lead to burnout among health professionals like exhaustion thus able to continue efficiently in countries like India where health professionals to patient ratio is significantly tilted. The overall potential to retain rural health professionals is a challenge today and it would be sorted leading to rationale distribution of resources. Patient overall care would be enhanced as many factors like costs, consultation with expert and follow up will become easy[14]. Better coordination among private and public health resources in telehealth could ensure quality as well as local issues such as abuse of medicines by quacks or insecurity among patients where to go when sick.

Case Studies in use of technology for safe and quality patient care , , ,

1. Electronic Health Record

Intervention

- Bibliographic data from hospital sources obtained.
- Contact with vendors were made
- Twenty hospitals with successful system
- Globally adoption rate in countries was China (96%), Brazil (92%), France (85%), and Russia (93%)

Benefits to Patients

- Patient information obtained securely and shared anywhere any time
- Nurses able to make the direct entry, reduced transcription cost.
- Quality documentation
- Reduced prescription errors
- Improved cure outcomes.
- Data available for clinical decision support system.

2. Patient care systems

Intervention

- Monitoring system evaluated for 40 individuals using wearable sensors while holding an Android device such as smartphone under supervision of the experts.
- Could monitor multiple parameters including heart rate, blood pressure, and body and skin temperature at the same time
- System found to be reliable and helpful due to high speed

Benefits to Patients

- Monitoring system found convenient and reliable to use
- Ensured data security at low cost
- System generated warning messages to doctor and patient under critical circumstances

3. **Telehealth**

Intervention

- Prospective observational study carried over 6-month at level I trauma Center in New Delhi, India.
- Patients called the call centre and nurses answered calls
- Call transferred if unable to respond to senior residents

Benefits to Patients

- Saved time
- Prevented visit to hospital
- Patient satisfaction
- Early intervention

4. Artificial Intelligence

Intervention

- Schneck Medical Center needed strategy to address high number of chronic obstructive pulmonary disease (COPD) patients and reduce associated readmissions
- Care Discovery (Watson) used to identify increased readmission rate

Benefits to Patients

- Data available via solution helped to focus on efforts to improve care for COPD patients
- Reduction in COPD readmission
- Significant amount of cost savings

Other technologies entering healthcare

Artificial Intelligence (AI) - it is a branch of computer science that aims to create intelligent machines to perform cognitive tasks like thinking, perceiving, learning, problem solving and decision making[19]. The concept of artificial intelligence is relatively new to nursing but has entered the healthcare with bigger IT giants such as IBM (Watson) and Samsung to name a few. The use of AI is highlighted across the globe including India and recent discussion by NITI AYOG, 2018 vouch for the same by focusing its use in increased access and affordability of quality healthcare. AI is been looked upon AI driven diagnostics, personalized treatment, early identification of potential pandemics, training and imaging diagnostics[20]. AI is the novice technology encouraging to look for overall health of the patient with objective assessments, focusing on wellness, early diagnosis, education and early interventions.

V. Internet of Things (IoT)/Internet of Medical Things (IoMT) - Internet of things (IoT) describes the idea of connecting everyday physical objects to the internet and the ability to identify themselves to other devices[21]. Internet of Medical Things (IoMT) or healthcare IoT refers to all the medical devices and applications connected to healthcare IT systems through online computer networks. Such medical

devices equipped with Wi-Fi allow the machine to machine communication that is the basis of IoMT. IoMT devices are linked to cloud platforms such as Amazon Web Services, on which captured data can be stored and analyzed. IoMT is surrounding patient care in great many ways including patient wearable devices, monitors, infusion set connected to analytics dashboards, RFID tags that share information with IT systems[22]. *IoMT* is targeting preventive care, advance patient care, improve patient satisfaction, enhance population health, patient care management and utilize data analytics constructively in overall health management[23].

VI. Genomic medicine- it involves using genomic information about an individual as part of their clinical care including diagnostic as well as therapeutic decision-making and health outcomes. Nurses being the bridging professionals have great responsibility to help at community level to counsel parents and significant others about genetics and genomics as we move towards precision medicine. Nursing professionals must invest resources into researching about basic, clinical and translational genomics which will ensure primordial, primary and secondary prevention of many disease conditions[24].

VII. 3-D printing- also referred to as additive manufacturing is a process of making three dimensional solid objects from a digital file[25]. It is expected to be part of healthcare sooner to personalize patient care as the organs and body parts can be created with use of precise measurements of the patients using devices such as CT scans. Use of biological gelatin ink is pushing the limits to create three-dimensional replicas of biological organs as well as prosthetics by these devices. Nurses would be part of the translation process with focus on patient care and education so nurses must be prepared to see significant changes in their work environment in terms of personalized patient care[26]. Use of 3-D printing has been experimented with and used for patients with cranial surgery, maxillofacial, spinal as well as orthopedic surgery; printed parts have good accuracy and improved medical outcomes however the technology remains expensive for now[27].

Conclusion

Humanizing care is a challenge with increased percolation from basic EHRs or use of high end technologies such as Artificial Intelligence; Technology must be seen as "facilitator" however on the contrary if not planned well, it can pose threat to health professionals subsequently affecting their contribution to overall patient care.[28,29]. Therefore a careful balance is required for what to use when and where. To conclude the tech-savvy professionals need to be open and flexible enough to consider the need of fellow professionals[30]. The technology when not seen as hindrance but as facilitators would ensure humanized informatics care. Our machines are learning and if they are learning themselves lets ensure they learn the "human" component every time novel changes are devised by the developer "The Human Being".

Conflict of Interest Statement : The corresponding author confirms on behalf of all authors that there have been no involvements that might raise the question of bias in the work reported or in the conclusions, implications, or opinions stated.

Source of Funding- Not Applicable

Ethical Clearance- Not Applicable

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DOI Number: 10.5958/2320-8651.2019.00020.6

Ground Reality of Nursing Turnover; Professional Discontent

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Abstract

Nurses are the backbone of the global healthcare delivery system and a major group of professionals in the healthcare system. When we discuss the importance and functions of nurses and the nursing profession, we must need to converse the issue of shortage of nurses as well. The shortage is not restricted to a specific geographical area, it's a global concern. The potential causes which make young and energetic male and female nurses to leave this noble profession at the beginning of their career includes stereotyping, feminism in nursing, compromising social and personal life and many more.

This paper aimed at discussing perceptions of nurses regarding professional retention and identification of the factors which compel nurses to leave the profession in their early career. This can help to improve the retention of nurses in the country therefore, prevent from shortage as well.

Keywords: *Nursing turnover, professional discontent, nursing shortage.*

Introduction

Nurses are the backbone of the global healthcare delivery system and a major group of professionals in the healthcare system. Nurses are not only responsible for patients' care, treatment, recovery, health promotion, maintenance and restoration in the hospitals but also for families and communities at large. When we discuss the importance and functions of nurses and the nursing profession, we must need to converse the issue of shortage of nursing staff. The growing population is an increasing demand for healthcare services and simultaneously a remarkable decline in the pool of nurses becomes a serious issue. The shortage is not restricted to a specific geographical area, it's a global concern. According to the most recent official statistics, there are 40,879 nurses in Sri Lanka; 154,309 nurses in Iran; 3.3 million nurses in the USA, and in Pakistan it is around: 94,766 nurses [1]. A figure cited by the Journal of pioneering medical sciences in Pakistan, revealed that the current nurse-patient ratio is around 1:50 whereas the ratio prescribed by the Pakistan Nursing Council (PNC) is 1:10 in general areas and 2:1 in specialized areas [2].

If we compare the number of nursing institutes and production of nurses in Pakistan from the time of independence to now, then we get to know the quantity has increased very much. In 1948, there were only two nursing schools in Pakistan, one in Lahore and the other one in Karachi. But now there are a lot of government nursing schools, colleges, and universities, as well as some private institutions, are also enrolled by PNC for training and education of graduate nurses. Altogether thousands of nurses are graduating every year. According to Meghani et al [3, 4] almost, 13132 nurses per year from all fours provinces are produced. There is one nurse for every 3,175 people. This ratio signifies that nursing has remained a neglected area in Pakistan and healthcare system desperately requires nurses greater than ever before.

According to the WHO report as cited in Flinkman et al [5, 6] "the healthcare workforce crisis is having an impact on many countries' ability to fight disease and improve health". Shortage of nursing has a disastrous impact on health care systems. If any country fails to deal with this issue of shortage, it will lead it to failure in improving health services.

Simultaneously a percentage of nurses are moving into other professions and withdrawing from the workforce. This is observed that attrition rate is higher among nurses from previous a couple of years. In many published studies around the world, a number of variables

have been identified that influence nurses' intention to leave the profession, which includes; demographic, work-related, individual and social factors [7].

Many factors are identified related to young nurses' intentions to quit their profession. An imbalance of effort and reward, higher occupational stress level, a higher job strain, lack of retention policies, horizontal and vertical bullying, poor infrastructure of advance academic resources, and lack of opportunities of involvement in decision making at different managerial levels are the reasons of poor image of nursing profession in public [8,9]. Previous researches have explored a lot of negative societal perceptions of nursing like stereotyping, subordination to doctors, low salary, poor chances of career development which make people think of nursing a low profile job, and which influence nurses intention to quit this profession which led the country to higher attrition rate. Likewise, the nursing profession is perceived as a social stigma, which has become one of the primary reasons for the shortage in the nursing industry [2,10].

According to the director of BscN programs the Aga Khan University Karachi Nursing is not the first choice for many people who joined it [2]. It is not considered a well-reputed profession, especially in Pakistan. In a developing country like Pakistan it's a financial burden on country's economy because it takes much cost to educate one nurse, and if they will not continue with nursing profession it will be a big loss of cost and financial investment. So, there is a dire need to explore the reasons of nurses to early career switch in order to overcome the issue of shortage and improvement in the healthcare system. Below is the narrative synthesis of the findings from relevant studies.

Literature Review

The number of studies which included in this review is 13, out of which 4 are qualitative and remains 9 are quantitative in nature. There was no research relevant to this topic in Pakistan. Therefore, there is a possibility that variables associated with the intention to leave the profession which derived from this literature may or may not the same in Pakistan.

A qualitative descriptive study was done in Iran by Farahani et al [11] on attrition among Iranian nurses to investigate the perceptions of nursing students about factors which influence attrition. It was a content analysis approach in which purposive and snowball sampling method was used and data was collected from 19 participants by face to face interviews and focus group discussion. This study demonstrated that choosing the Nursing as the wrong career due to lack of information about nursing and thus appears to be an incongruity between reality and expectation which further leads to higher attrition rate during earlier in a career of nursing.

A quantitative cross-sectional survey was conducted in Taiwan by Chin et al [12] on workplace justice and intention to leave the nursing profession, data was collected from 2268 nurses by stratified and random sampling to assess the effect of workplace justice on nurses' intention to leave the nursing profession by performing multiple logistic regression and population attributable risks. The findings indicate that nurses with low workplace justice had a higher intention of leaving the profession (odds ratio =1.34, and 95% confidence interval =1.02–1.77). This was the first study which indicates an association between workplace justice and intention to leave nursing; it also suggested that hospital administrations need to increase the autonomy of nurses in order to increase the probability of retaining nurses.

A multi-country multi-level quantitative study on cross-sectional design was conducted by Leineweber et al [13] on the sample of 23076 RNs, from 384 hospitals of 10 European countries in which dissatisfaction related to work was found the reason of intention to leave within a multi-country multi-level context. The limitation of this study is that only dissatisfaction based turnover intention was studied.

A quantitative, longitudinal study conducted in China on newly graduate nurses' intention to leave in their first year of practice by Zhang et al [14] on 343 sample size. This study reveals that occupational stress and professional identity are constantly affecting the intention to leave and the researchers suggested that while planning retention strategies, stakeholders need to provide support to neophyte nurses, for the reduction of their stress and enhancement of their professional identity.

In Japan, a quantitative cross-sectional study was done by Yamaguchi et al [15] to measure job control, family-related variables and work-family conflict among nurses working in different healthcare settings on 1461 participants. Results interpret that in hospitals

by reducing nurses work-family conflict would increase retention of nurses. In healthcare, by allowing nurses to fulfill the family's responsibilities can help to reduce attrition. And in nursing homes, by increasing nurses' job control would help to increase retention.

An integrative review of nurses' intention to leave the profession was done by Flinkman et al [5] . The sample was 31 studies (1995 – 2009) from a different database. They used 5 step coopers method for collection, analysis, and synthesis of data as well as identified demographic, work-related and individual related variables which affect on nurses intention to leave the profession.

A quantitative study on the intentions of nurses to quit the profession in the context of demographic factors was done by Omar et al [16] in Malaysia. By stratified random sampling 700 questionnaires distributed in 11 different hospitals of Malaysia. This study exhibited that income and organizational tenure show differences in intention to leave nursing, while age, marital status, educational level have no impact on intention to leave. These findings fill the research gap. The limitation of this study is that some findings presented only in the Malaysian context.

A study on the Impact of nurses' turnover on organizations' performance in the neighbor country India was conducted by Rajan [17] the study adopted judgmental and convenient sampling and the sample size was 30. The research reveals that turnover increased the workload on remaining staff, this further leads to minor injuries on workplace like needle stick injuries etc and this, in turn, affects the morale of remaining nurses, who may have overworked.

A quantitative study on job insecurity and intent to leave the nursing profession in Europe was conducted by Laine et al [18] in Finland. The study design was a cross-sectional prospective and the sample size was 77,681. The study findings revealed that perceived job insecurity may lead to the high attrition rate of nurses, and the study suggested that effects of job insecurity can be reduced by making nurses feel that they are important to the institution for which they are working.

Another quantitative study on bullying among nurses and its effects, conducted in Turkey by Yildirim [19] in which sample was 286 nurses and it was a cross-sectional and descriptive study to find out that bullying among nurses has a great impact on their performance and intention to leave the profession. This leads them towards poor job satisfaction and ultimately reduces their motivation, performance, and productivity.

Synthesis of the Review

All the researches related to nurses intention to quit the profession and their perceptions related to nursing synthesized under three main themes. These themes are derived from an integrative review of Flinkman et al [7] .

Individual related factors

It is found in different studies that attrition or retention both are individual choices. Many people joined nursing as a second career or choose wrongly without having much information about the pros and cons of this profession. Thus incongruity between expectation and reality leads them to quit this profession in early career or to take the decision to change it ultimately. Professional career advice can overcome this issue [5, 6, 11, 12].

Work-related factors

In most of the studies, reasons are related to the working environment. There are a lot of factors related to the working environment play a significant role in attrition or retention of nurses in any organization. Various studies, it was explicitly defined that staff satisfaction has a very strong impact on their job status either they would like to continue with present job or would try to change it. Moreover, workplace bullying leads to nurses towards many psychological problems as well as it lowered work motivation, poor output lack of loyalty to work and destroy social relations with colleges and patients. In another study in the working environment, there are different pull and push factors which attract and distract nurses to continue with their jobs. The nurses, who experiencing job insecurity are more prone to intend to leave nursing [7, 13, 14, 17, 18, 19].

Demographic characteristics/social community-related factors

Stereotypical public images about nursing are playing a part to make the people to quit this profession as well as being underpaid is another reason for lack of interest and low morale among nurses. By reducing nurses' work-family conflict and by allowing them to fulfill family's responsibilities would increase retention of nurses [5, 15]. Contrary to this study another study

finding showed that there is no role of demographic factors on the nurses' intention to leave the profession [16].

Discussion and Suggestions

According to this literature review, there are multiple factors which effect on nurses intention to leave their profession like stereotyping, bullying, low salary high work demand, occupational stress and imbalances in family-work demands, and job insecurity in different European as well as Asian countries. Most of them are work-related, a few are individual related and very few studies predict that these factors could be demographic. And different strategies were proposed to control the turnover and to increase the rate of retention of nurses to overcome the issue of shortage. Proposed strategies included autonomy of nurses, incentives, involvement in different motivational activities, justice on the workplace, and career advises in order to reduce stress and confusion about the persuasion of a nursing career. In this regard, nursing managers and higher authorities need to keep an eye on these factors and policies and management should be changed according to the situation. As well as there is a need to involve the media to spread positive messages about this sacred profession and struggles should be made to remove the negative images of nurses from social media and the film industry. Involvement of nurses in decision-making processes and policy planning would be crucial in this regard.

Conclusion

This review provided some knowledge about the phenomena that why nurse tend to leave their profession in different geographic areas as well as it is related to their perceptions and experiences. Shortage of nurses can have a direct and negative impact on the health of patients around the communities who needs nursing care. In the light of literature, there is a dire need of applying different strategies to control the turnover ratio and provide satisfaction to the nurses.

Conflict of Interest: There is no conflict of interest in the study.

Ethical Clearance: Taken from Aga Khan University Ethical review committee.

Source of Funding: Self

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DOI Number: 10.5958/2320-8651.2019.00021.8

Effectiveness of Structured Teaching Programme on Knowledge Regarding Oral Hygiene among School Children in St. Bennedict School, Bangalore

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Abstract

Introduction: - Oral hygiene is the important part of the basic care. It helps to maintain a healthy state of the mouth, teeth, gums and lips. Brushing teeth removes food particles plaque and bacteria, messages the gums and relieves discomfort resulting from unpleasant odors and taste. Complete oral hygiene gives a sense of well being and thus can stimulate appetite.

Objectives: - 1.To assess the pre-test knowledge regarding oral hygiene among school children.2.To assess the post-test knowledge regarding oral hygiene among school children.3.To assess the effectiveness of structured teaching programme in terms of improvement in knowledge regarding oral hygiene among school children.4.To find an association between levels of knowledge regarding oral hygiene among school children and selected demographic variables.

Design:-Pre-experimental design (one group pre-test post-test design) was used to study effectiveness of STP. 30 school children from St.Benedict School, Bangalore were recruited by non-probability convenient sampling method. Necessary administrative permission was obtained from concerned authority. Structured interview schedule was used to elicit the baseline data and structured questionnaires were used to elicit the knowledge of school children.

Setting:-The study was conducted at St.Benedict School, Bangalore, 30 samples were selected for the present study.

Result: - The study revealed that among 30 school children, 2 (6.66%) school children had adequate knowledge, 28(93.33%) school children had moderately adequate knowledge & there was no inadequate knowledge found in the post-test score. The mean pre-test knowledge score of school children was 10.1, whereas the mean post-test knowledge score was 18.8. The obtained 't" value was 10.48 which was found statistically significant 0.05 levels.

Conclusion :- The study concluded that the structured teaching programme on knowledge regarding oral hygiene among school children in selected school, Bangalore carried out in the study was found to be effective in the improving knowledge of school children as evidenced by the significant change between pre-test and post-test knowledge score.

Keywords: - *Effectiveness, Knowledge, Structured Teaching Programme, School Children, Oral Hygiene.*

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Introduction

Children are the future of our society and special gifts to the universe. Today's children are the tomorrow's citizens taking care of the children and their families has always been challenging but has become increasingly more complex. Children are most important age group

in all societies. Health status and health behavior of later life are laid down at this stage. Child health care should includes specific biological, psychological needs that must be met to ensure the survival and healthy development of the child.[1]

Oral health is a vital component of overall health, which contributes to each individuals well being and quality of life by positively affecting physical and mental well-being, appearance and interpersonal relations. Oral health is essential to general health and well being throughout the life span and is maker for overall health status. Research and other advances in oral health have lead to safe and effective means of maintaining oral health and preventing dental caries, periodontal disease, and gingivitis. The beginning of school health service in India dates backs to 1909 when for the first time medical examination of school children was carried out in Boroda city. In 1953 the secondary education committee emphasized for the need medical examination of peoples and school feeding programmers. In 1960 the government of India contributed a school health committee to assess the standard of health and nutrition of school children and suggests ways to improve them.[2]

Children with disabilities and special needs are at a higher risk of health problems. Special needs of children include extra help to achieve and preserve physical health, including dental health. A clean mouth is most essential requirement for good health. Children with special needs have enough problems without having poor health due to poor oral health adding to their other life problems. Special needs of the children are those who have special requirements due to developmental, physical, emotional or behavioral conditions who need help from caregivers and associated services. Common oral problems such as tooth decay or gum disease put all children and adults at risk for other health problems. However special needs children often have more oral health problems than the general population. For instance children with disabilities may have problems with mobility, behavioral problems, neuromuscular problems, cognitive problems, gastro-esophageal reflux problem and seizure. These problems may make it impossible for disable children to tend to their own oral care, which puts them at risk for tooth decay, gum disease and other health problems.[3]

Statement of Problem:-

"A study to assess the effectiveness of structured teaching programme on knowledge regarding oral hygiene among school children in a St. Bennedict School Bangalore."

Objectives:-

- To assess the pre-test knowledge regarding oral hygiene among school children.
- To assess the post-test knowledge regarding oral hygiene among school children.
- To assess the effectiveness of structured teaching programme in terms of improvement in knowledge regarding oral hygiene among school children.
- To find an association between levels of knowledge regarding oral hygiene among school children and selected demographic variables.

Hypothesis:

$\mathbf{H_1}$: There will be significant difference in pre-test and post-test knowledge level in oral hygiene among school children.

$\mathbf{H_2}$: There will be significant association between post-test score and selected demographic variables.

Materials & Method

The research design adopted for this study is Evaluative research approach. The research design used for this study is one group pre-test post-test design which belongs to the pre-experimental study.

The study was conducted in St. Bennedict School, Bangalore. The sample size of this study comprised of 30 school children from St. Bennedict School Bangalore, who met the inclusive criteria were selected through the non-probability convenient sampling technique. Structured knowledge Questionnaire was used as a research tool. Since, it is considered to be the most appropriate instrument to elicit the response from subjects. The reliability of the tool was established by using split half method and Karl Spearson's formula. It was found 0.99 for structured knowledge questionnaire and tool was considered reliable for proceeding with main study.

A letter requesting permission was sent to the concerned authority of the St. Bennedict School Bangalore, prior to the data collection during the

month of March 2018, and permission was granted for the same. The data was collected in the month of July, 2018 at St. Bennedict School, Bangalore. The data was collected from 30 school children using non-probability convenient sampling. The purpose of questionnaire was explained to the samples with self -introduction. The questionnaire was distributed to the school children and they took 20-30 minutes to fill up the answers for the questions and they were very co-operative. After conducting the pre-test, they were given structured teaching programme and post-test was conducted within one week using the same tool used for the pre-test.

Findings

Description of pre-test and post-test knowledge of school children regarding oral hygiene

Table No. 1: Frequency, percentage, mean and standard deviation of pre-test and post-test knowledge score of school children N=30

Knowledge level	Category	Classification of school children			
		Pre-test		Post-test	
		Frequency (f)	Percentage (%)	Frequency (f)	Percentage (%)
Adequate	>75% Score	0	0	2	6.66
Moderately adequate	51-75% Score	2	6.67	28	93.33
Inadequate	< 50% Score	28	93.33	0	0
Total		30	100	30	100

The data presented in the table-1 shows that 28 (93.33%) school children had inadequate knowledge, 2 (6.67 %) school children had moderately adequate knowledge and no one had adequate knowledge in pre-test.

Whereas 2 (6.67%) school children had adequate knowledge, 28(93.33%) school children had moderately adequate knowledge and no one found inadequate knowledge in post-test.

Table No.2: Mean, Standard Deviation and paired‘t’ test to determine the effectiveness of structure teaching programme on bedsore & its management among school children N=30

Max score	Mean	SD	Mean difference	paired “t‘ test	Significance
Pre-Test	10.1	3.5	8.7	10.48	0.05*
Post-Test	18.8	2.5			

The data presented in a table-2 shows that the obtained [t] value was 10.48, which was found with statistically significant at 0.05 levels.

Discussion

Structured teaching programme was found to be an affective educative method for improving the knowledge of school children regarding oral hygiene. The findings were similar to other studies, which shown that school children having very less knowledge on oral hygiene. In the present study results revealed that obtained [t] value was 10.48, which were found with statistically significant at 0.05 levels.

Conclusion

The study concluded that the structured teaching programme on knowledge regarding oral hygiene among school children carried out was effective in improving the knowledge of school children as evidenced by the significant change between pre-test and post-test knowledge score.

Conflict of Interest: None.

Source of Funding: - This study was self financed.

Ethical Clearance:- Ethical permission was taken from St.Benedict school authority. The study was conducted keeping all the ethical issues in mind. Consent was taken from all the samples of the study. The information provided by the sample was kept strictly confidential and were used for the purpose of research only.

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DOI Number: 10.5958/2320-8651.2019.00022.X

Purposeful Hourly Rounding by Nurses: A Best Practice Implementation Project

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Abstract

Purpose: The project aimed to improve the patient satisfaction and safety through implementation of purposeful hourly rounding by nurses.

Materials and Method: The FADE Quality Improvement model was used to guide the process. A video assisted training programme was developed about purposeful hourly rounding protocol. Direct observation of staff nurses was done followed by training programme to assess timeliness and utilization of a protocol when rounding. A follow-up audit was conducted to determine compliance with the same criteria. For the project aim, pre- and post-intervention data related to nursing sensitive elements of patient satisfaction and safety was compared.

Results: The purposeful hourly rounding concept was selected for implementation because it is evidence based practice and appeared to be beneficial in all IPD wards. The video assisted training programme was presented to all nurses working in wards. Nurses expressed appreciation that they were consulted, trained and their feedback was incorporated into tool before it was implemented. Resources needed to implement the protocol were identified and those were provided.

Conclusion: Nurses have the ability to improve patient satisfaction and patient safety outcomes by utilizing purposeful hourly rounding concept which serves to improve patient communication and staff responsiveness. Having supportive resources, structured approach and involving all levels of staff, to meet patient needs during their hospital stay was a key factor for success.

Keywords: *Purposeful hourly rounding, 5 Ps, FADE QI model.*

Introduction

Patient safety and satisfaction in hospitals is a continuous focus and concern for nursing leaders and they are endlessly researching on evidence-based care initiatives to improve patient safety. One of the major performance improvement initiatives to promote patient safety and to improve satisfaction is the implementation of purposeful hourly rounding[1].

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Purposeful hourly rounding is the nurse led programme to ensure the needs of the patient are assessed every hour. Hourly rounding incorporates behavioral and environmental components[2]. The focused hourly assessment includes the completion of the evaluation of the"5P's": Pain, Potty, Positioning, Possessions and Personal needs.

The purpose of this project was to improve patient satisfaction and safety through implementation of purposeful hourly rounding by nurses in QRG Health city.

Method and Materials

FADE QI model is the one of the most common models for quality improvement. There are four steps to this model that cover a broad area and are easy to use[3].

The first step is **Focus.** This is an essential part of this model because it establishes the basis for what will set the other three steps in motion[3].

The second step is data **Analysis**. Here, data will be collected and analyzed in an effort to establish baselines, identify root causes of the problem for which a solution is being sought, and then point toward possible solutions[3].

The next step in the process is **Development**. This is where action plans are developed based on the data being examined. These plans are put together for the overall improvement process and encompass implementation, communication, and the measuring and monitoring of the progress[3]. Evidence-based research indicated implementation of hourly rounding would increase patient satisfaction[4]. Hence, it was selected as a solution and an action plan was developed. It includes Competency based (video assisted training & return demonstration) education for all nurses of IPD wards, Nursing operations team rounding to verify performance of hourly rounding by staff and Rounding Log for documentation .

Purposeful hourly rounding is an evidence based model of care that promotes a systematic and proactive approach to patient care[4].

The aims of purposeful hourly rounding are

To address patient needs on a continual basis.

To improve early detection of the deteriorating patient,

To improve patient satisfaction & quality of care,

To reduce the incidence of falls, pressure ulcers & medication errors

To decrease the nurse call bell usage

The procedure is every hour a nurse enters a patient room & asks the patient about 5 P's (See Table -1) and Nurses round every hour from 6 am to 10 pm and every 2 hours from 10 pm to 6 am.

Table – 1: Purposeful Hourly Rounding – 5Ps.

S.No	5 Ps	Way to address 5 P s
1	**Pain**	• Do you have Pain? If yes, then • How you rate your pain from 0 to 10? • What is the frequency of the pain? • What is the location of pain? • Do you want me to do something for your pain relief?
2	**Potty**	• Do you want me take you to the washroom or provide bedside commode or bed pan? If yes, then • Provide assistance as per the need
3	**Position**	• Are you comfortable in this position? If No, then • Provide comfortable position as per patient need • Provide assistive devices like extra pillows, wedge pillows etc.
4	**Possessions**	• Do you need us to move call bell, tissue box, bed remote, TV remote, cardiac table or water jar close to you? If yes, then • Provide the objects as desired.
5	**Personal needs**	• Do you need any other support or services like ✓ Ambulation ✓ Consulting with doctors, dietician, physiotherapist ✓ Meeting up with attendants, relatives

The final step in the quality improvement process is **Execution / Evaluation**[3]. A one-hour training session was developed introducing staff to the concepts of "Hourly Rounding". Demonstration video was shown during the class to reinforce the rounding behaviors. Hourly rounding logs are monitored for completion and to ensure documentation of rounding is being performed. During the nursing operational rounds, process of hourly rounding is verified with the patients. If inconsistencies are noted between the patients' feedback and the rounding log documentation, training and mentoring is provided to each individual staff.

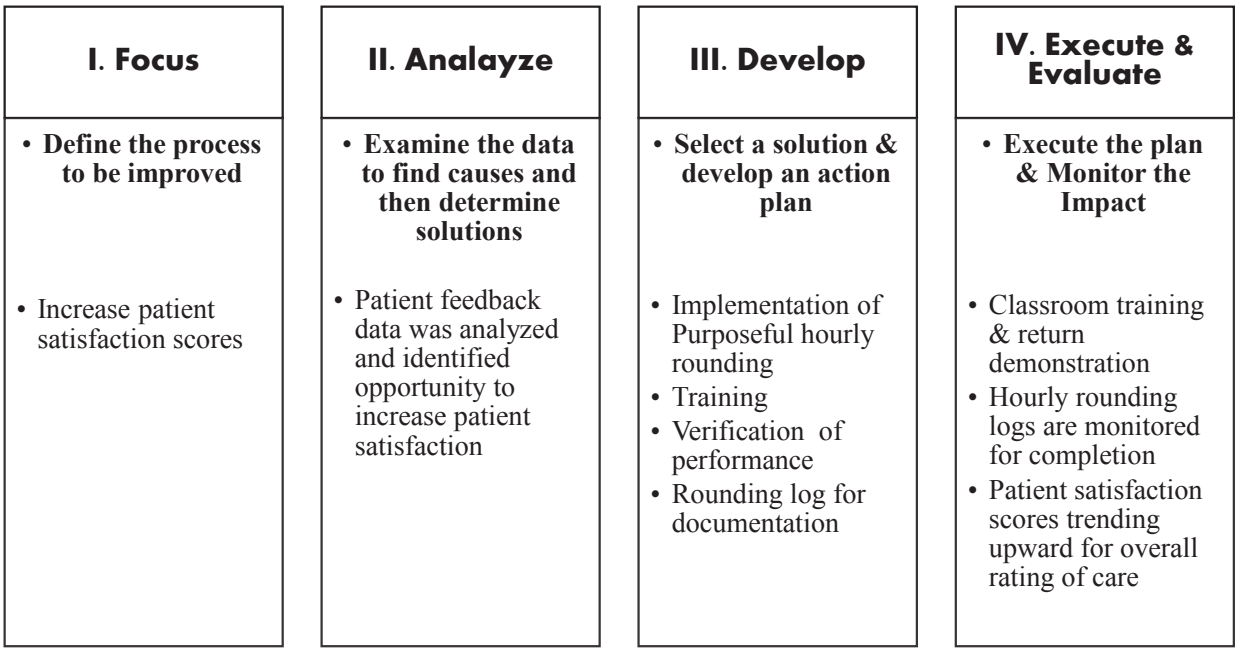

Figure-1: The FADE QI Model offering useful approach to implement purposeful hourly rounding

Results

The FADE QI Model provided a framework for implementing purposeful hourly rounding concept to improve patient satisfaction and safety[3].

Purposeful hourly rounding practice was selected for implementation by nursing quality team as it is a best practice intervention to routinely meet patient care needs, ensure patient safety, decrease the occurrence of patient preventable events, and proactively addresses problems before they occur[5].

The video assisted training programme was presented to all IPD nurses. The findings revealed that training was being effective in enhancing the knowledge of nurses about new practice i.e. purposeful hourly rounding as evidenced by the scores obtained in the pre and post-tests.

Nurses expressed appreciation that they were consulted and trained and their feedback was incorporated into tool before it was implemented. Resources needed to implement the protocol were identified (such as hourly rounding log / education material) and those were provided to all departments.

We also reviewed the documented data of falls rates, pressure ulcer prevalence, patient satisfaction scores and call bell usage before and after implementation of rounding. This proved conclusive and direct link seen between rounding and improved outcomes as patient satisfaction scores trending upward for overall rating of care, fall rate, skin breakdown and nurse call bell usage trending down.

Conclusion

As patient safety and satisfaction has become an increasingly important issue in healthcare, nurse's role in contributing to safety & quality initiatives has grown as well. Therefore, Nurses are striving to deliver safe, high quality care; the literature demonstrates that purposeful hourly rounding impacts quality and safety outcomes. Purposeful hourly rounding consists addressing the 5 P's (Pain, Potty, Position, Possessions and Personal

needs), assessing for a safe environment and setting expectations. Developing and implementing a culture of safety is very important as healthcare organizations continue to focus on patient centered care.

Conflict of Interest: Nil

Source of Funding: The project was supported by Hospital.

Ethical Consideration: Formally obtained from Hospital.

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DOI Number: 10.5958/2320-8651.2019.00023.1

Knowledge and Attitude of Filipino Nurses towards Palliative Care

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Abstract

Terminal illnesses have a disintegrating impact to patients not just physiologically but also psychologically. They undergo a full extent of suffering and distressed deaths that magnifies the need for palliative care (PC). This study aimed to assess the knowledge and attitude of nurses in palliative care. A descriptive comparative method was used as the design of the study and a purposive sample of 236 nurses employed in Level III PhilHealth accredited hospitals in Manila, Philippines were selected. The participant's demographic profile, the level of knowledge and level of attitude were determined. Data were analyzed using frequency, percentage, t-test, and one-way ANOVA. Results revealed that nurses had a fair knowledge and fair attitude towards PC. Also, the level of education and palliative care training showed a significant difference in the level of knowledge in PC.

Keywords: *Attitude, knowledge, palliative care.*

Introduction

Terminal illnesses have a disintegrating impact to patients not just physiologically but also psychologically. Physical suffering is likely to be a major concern, from all the time between diagnosis and the terminal events, but utmost suffering is of a psychological nature[1]. This being taken into consideration; patients undergo a full extent of suffering that does not lead to a dignified passing. Doorenbos et al[2] stated that dignified dying has not been studied extensively, and few studies have focused on interventions to promote dignified dying which means that prioritization of interventions in caring for the dying is not yet fully explored, eventually leading to incompetent nurses. In addition, a stated report indicates that the education of physician and nurses does not adequately prepare clinicians to provide palliative care, and national data show that they are unprepared to teach many of these competencies[3].

In the Philippines, being a resource-onstrained country, there is no concrete system of palliative care; this is propelled by ignorance of public awareness, shortage of training among medical and nursing staff, low credibility and interest on the said field, unwillingness of doctors to refer patients, lack of political will to support palliative care and scarcity of government stream for hospice funding[4]. As a developing country, what magnifies the given is also the fact that the economic status of the country affects most aspects. In addition to that, published literature on palliative care and dignified dying in the Philippines is limited[2]. Notwithstanding the obvious adversities, Filipino nurses can still make use of palliative care through its very own widened perspective and understanding of the situation at hand. The key concepts to consider in understanding the Filipino perspective on death and dying includes cultural values and beliefs related to religion, family, and interpersonal harmony. Nevertheless, Filipino nurses only sometimes or never put spiritual comfort in caring for a dying patient. They just view spiritual comfort and support as an underlying aspect of palliative care when it should be one of their priorities[2].

Acknowledging the universal need of a better healthcare provider to reduce distressing deaths in the Philippine setting where there is an existing palliative care system that lacks government, service and community awareness support, and envisioning what better ways can be done to address this problem is what outlines the foundation of this study.

Purpose

The aim of the study was to:

1. Determine the demographic characteristics such as: age, gender, institution, ward, level of education, work experience, experience of caring in terminally ill, and palliative care training of nurses working in selected hospitals in Manila.

2.Assess the knowledge and attitude towards palliative care among nurses working in selected hospitals in Manila.

3.Compare the demographic characteristics of nurses with their level of knowledge and attitude in palliative care.

Method

Research design and sampling technique

The study utilized a descriptive-comparative research as the design of the study and purposive sampling technique in selecting the participants. Medical-surgical and intensive care unit nurses employed in level III PhilHealth accredited hospitals were chosen to participate among other nursing units in the hospital.

Setting of the study.

The study was conducted in selected level III PhilHealth accredited hospitals in Manila. Hospitals in the Philippines fall under 3 different levels of classifications as directed by the Department of Health (DOH)[5]. Level I hospitals only provide basic medical, nursing, hospital operations, and patient support services. It prevents manage the prevalent conditions, and out-patient services. Meanwhile, level II and III hospitals offer a higher quality of facilities and broad medical and nursing services aside from the basic services it provides. High quality trained personnel and their department. For that reason, hospitals are chosen accordingly to meet the needs of the study.

Instrumentation

Respective questionnaires were administered in English and modified accordingly to the context of the Philippine healthcare and divided into three parts. This included the demographic data, Frommelt's Attitude Toward Care of the Dying (FATCOD), and Palliative Care Quiz for Nursing (PCQN).

Demographic Profile

The first part of the questionnaire aims to identify the demographic profile of the respondents which includes age, gender, institution, ward, level of education, work experience, experience of caring terminally ill and PC training.

FATCOD

The attitude of the respondents was measured using a 24-item questionnaire that modified to the context of the Philippine healthcare. The tool has a range from 0 to 1 which is the KR-20 with options as follows; 1 (Strongly Disagree), 2 (Disagree), 3 (Uncertain), 4 (Agree) to 5 (Strongly Agree). Possible score range was from 0 to 120, wherein a higher accumulated score suggests a more positive attitude towards palliative care[6].

PCQN

The 20-item knowledge questionnaire had a Yes, No, or Don't know answers. The questionnaire provided an adequate measurement of the level of knowledge of the respondents[7]. As stated by Maria et al.[8], a high score indicated a better knowledge of palliative care. The internal consistency of the 20-item quiz was 0.78, indicating high internal consistency or homogeneity for the quiz.

Data Collection Procedures

In able to obtain necessary data, the data gathering procedure was divided into several phases. First, the researchers wrote a letter of intent to conduct the study in eleven (11) hospitals in Manila and asked permission from the developer of the tool regarding the usage of the tool in the study.

Second, as soon as the request has been granted, the researchers coordinated with the nursing department to conduct the administration of questionnaires to the participants. The researchers asked the training officer permission to allow use of one room for participants to answer the questionnaire.

Lastly, the purpose of the study was explained to willing participants and a consent letter was secured prior to the conduct of the study.

Data Analysis

The data were analyzed using IBM SPSS Statistics

for Windows, Version 23.0. Armonk, NY: IBM Corp. with a p-value of 0.05 was considered statistically significant. Specifically, mean, standard deviation, for descriptive statistics and t-test and one-way ANOVA for inferential statistics were utilized.

Findings

Level of Knowledge and Attitude of Nurses in Palliative Care

In terms of the level of knowledge, results showed that only 46 (19.5%) of the participants have fair knowledge while 190 of them (80.5%) have poor knowledge. On the level of attitude, 148 (62.7%) nurse surveyed has a fair attitude while 88 (37.3%) of them have a good attitude.

Table 1. Level of Knowledge and Attitude of Nurses towards Palliative Care

Level of Knowledge and Attitude in Palliative Care	Knowledge		Attitude	
	n	%	n	%
Good	0	0	88	37.3
Fair	46	19.5	148	62.7
Poor	190	80.5	0	0
Total	236	100	236	100

Comparison of the demographic characteristics with the level of knowledge and attitude in Palliative Care

The demographic characteristics of the participants were compared with the level of knowledge and attitude in palliative care.

In terms of the level of knowledge, significant difference was noted between the educational level and the level of knowledge in palliative care (p=0.048). Likewise, significant difference was also noted between the educational level and participants with palliative care training (p=0.005).

Specifically, participants with an MA degree (M=10.33) have a higher level of knowledge as compared to those who have a BSN degree (M=8.43). In addition, participants with palliative care training (M=9.05) have a higher level of knowledge as compared to those who do not obtain any training (M=8.16) (see Table 2).

Table 2. Comparison of the Demographic Profiles with the Level of Knowledge and Attitude towards Palliative Care

Profile	Mean	SD	Knowledge		Attitude	
			value	p	value	p
Age						
21-29	8.51	2.45				
30-38	8.32	2.01				
39-47	8.88	2.23	0.352#	0.788	0.634#	0.594
>48	8.10	2.56				
Gender						
Male	8.85	2.46	1.446+	0.150	-0.470+	0.639
Female	8.35	2.28				

Cont... **Table 2. Comparison of the Demographic Profiles with the Level of Knowledge and Attitude towards Palliative Care**

Educational Level						
BSN	8.43	2.31	-1.988+	0.048*	1.682+	0.094
MA	10.33	2.80				
Working Experience						
1-10	8.41	2.33				
11-20	9.11	2.37	0.557#	0.644	1.568#	0.198
21-30	8.67	2.74				
31-40	9.00	1.41				
Experience in Caring Terminally Ill						
1.-5						
6.10	8.44	2.32				
11-15	8.50	2.30				
16-20	8.71	2.98	0.502#	0.734	2.167#	0.074
21-25	8.00	2.65				
	10.00	2.45				
Palliative Care Training						
Yes	9.05	2.32	2.821+	0.005*	0.598+	0.550
No	8.16	2.29				
Ward						
Medical-Surgical	8.49	2.25	0.147+	0.883	-1.536+	0.126
ICU	8.44	2.51				
*p value is significant at 0.05 level +t test #one-way ANOVA						

Discussion

The result of this study showed that the majority of nurses had poor knowledge towards palliative care (PC). As evident in the description of knowledge scores, only 19.5% had good knowledge. This finding is similar to a study conducted in Palestine[9] where 20.5% had good knowledge. In the contrary, the study of Kassa et al.[6] showed that 30.5% of nurses had good knowledge. The possible reason for this might be that only a few nurses have had been educated about PC and this might be a consequence of the absence of PC education incorporated into the degree curricula.

Establishing baseline knowledge of nurses towards palliative care is necessary so that relevant educational programs can be initiated. Considering the results of this study, it was found that participants with a high level of education show an increasing level of knowledge in PC. This finding is also manifested in other studies[10-16]. Nurses with a masters' degree had greater knowledge and mean score than those with a bachelor's degree. This is supported as Karkada et al.[10] investigated palliative care knowledge among nursing students and found that only 43.4% of them were aware of the term palliative care and it was during their training period. The data showed that 79.5% of students had poor knowledge of palliative care.

Another possible reason for this might be that only few nurses have been trained on PC. As shown in this study, a significant difference was noted between those without palliative care training and those with training, with the latter having a higher mean score. This is also true in other studies including those by Proctor et al[17], Arber[18], Raudonis et al.[19], Knapp[20], Brazil et al.[21], and Harrold et al.[22]. Further recognizing the need of nurses for palliative care training. Training on PC is the most frequently nominated professional need among nurses[23-25].

The current status of the Philippine healthcare can be a contributing factor to these findings since the Philippines is categorized as Group C in the Typology of Hospice-Palliative Care Service Development[26]. This

may be propelled, according to the Department of Health[4] by ignorance of public awareness, shortage of training among medical and nursing staff, low credibility and interest on the said field, the unwillingness of doctors to refer patients, lack of political will to support palliative care and scarcity of government stream for hospice funding.

On the other hand, the description of attitude scores shows that 62.7 % of the respondents had fair attitude towards palliative care. This finding corresponds with the study of Kassa et al.[6] that 259 (76%) had favorable attitude towards PC and Karkada et al.[10] indicated that 92.8% of nursing students had favorable attitude (56.7± 8.5) towards palliative care.

This is the first study of its kind conducted in Philippines. Literature review does not indicate any comprehensive study for palliative care knowledge and attitude targeting practicing nurses anywhere in our country.

Conclusions

Based on the results that were gathered, it was concluded that nurses have a poor knowledge in palliative care but have a fair attitude towards it. Furthermore, it was found that there is no difference with age, ward assignment, working experience, experience in caring terminally ill patients, and PC training; however, a positive difference was noted with gender and level of education was noted in relation with the knowledge in PC.

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DOI Number: 10.5958/2320-8651.2019.00024.3

Review Article

Internet Addiction and its Effects on Life Style of the Adolescents

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Abstract

Internet is an ocean of information. Internet is a universal system of computer networks that are inter connected to serve millions of people around the world. The term "addiction" use in many contexts to describe an obsession, compulsion or excessive psychological dependency. It is also called as "Impulse Control disorder". The aspects of lifestyle are physical health, mental health, academic performance, social health and spiritual health. Around 1,40,00,000 school children have access to PC in home (Madhya Pradesh).India is IInd leading country in using Internet. The internet addiction effects on physical health, mental health, academic performance, social life, spiritual / moral values and behavior. The signs of internet addiction are mood swings, depression, anxiety and feeling of loneliness. The internet addiction can be prevented. We can treat the internet addiction through family counseling , support groups and educational workshops.

Keywords:- *Internet addiction, Impulse Control Disorder, lifestyle, physical health, mental health, academic performance, social health, spiritual health, mood swings, depression, anxiety & feeling of loneliness.*

Introduction

The population of India is around 1.2 billion as of 2012, Out of which the number of internet users (both urban and rural) is around 205 million. It is estimated to increase to 243 million by June 2014. India will be the second-leading country after china, which currently has the highest Internet user base of 300 million. There were about 42 million active internet users in urban India in 2008 as compared to 5 million in 2000.In India 300 million internet users are adolescents (June 2015) during past 5 years, the number of internet users in the world is increasing from 16% to 40% from 2005 to 2014 respectively. Around 1,40,00,000 school children have access to PC in home (M.P.).Total use by adolescents on average of 27 hours per week & over 14% of children with home computers used them for educational purposes (2015).Internet is a universal system of computer networks that are interconnected to serve millions or even billions of people around the world.[1]

"Internet addiction is defined as the compulsive urge to continually use the Net, whether it is to spend hours surfing the Web, hang around in IRC chat rooms, or play on-line games".[2]

The term «addiction» use in many contextes to describe an obsession, compulsion, or excessive psychological dependence, such as: drug addiction (eg. alcoholism, nicotine addiction), problem gambling, crime, money, Works addiction, compulsive overeating, Oniomania (compulsive shopping), computer addiction, vidéo game addiction, pornographie addiction, télévision addiction, etc. Internet Addiction, also known as computer addiction, online addiction, or Internet addiction disorder (IAD) covers a variety of impulse-control problems including: **Cybersex Addiction:** Compulsive use of Internet pornography, adult chat

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rooms, or adult fantasy role-play sites impacts negatively on real-life intimate relationships.[3]

Cyber-Relationship Addiction:- Addiction to social networking, chat rooms, texting, and messaging to the points were virtual, online friends become more important than real-life relationships with family and friends.

Net Compulsions: -Such as compulsive online gaming, gambling, stock trading, or compulsive use of online auction sites such as eBay, often resulting in financial and job-related problems.

Information Overload: - Compulsive web surfing or database searching, leading to lower work productivity and less social interaction with family and friends.

Computer Addiction – obsessive playing of off-line computer games, such as Solitaire or Minesweeper, or obsessive computer programming.

The most common of these Internet addictions are cybersex, online gambling, and cyber-relationship addiction. These concerns about excessive Internet use have been raised not only in affluent developed countries, but in developing nations such as India. It is noteworthy that India ranks third largest internet users nearly of 74 million. In fact, during the past five years, the number of internet users in world level is increasing from 16% to 40% of 2005 to 2014 respectively. In India these cross 300 million (June 2015). In particular, Internet is the representative term of adolescents. This could be natural since this group of teenagers is easily attracted to this medium. According to a recent study, Internet use among teenagers has reached 94%, which was much higher (51%) than among people in their 30s. The study also suggested that as school children are becoming more avid users of the Internet.[4]

Public school children who had access to home computers are around 14,96,75,97 in Madhya Pradesh & 1.5 million students is using Smartphone & it is 5% of total users of all over the world. Total use by teenagers on average of 27 hours per week & over 14% of children with home computers used them for educational purposes (2015).[5]

Sawwy Kaleyvani Geeseeny (2018) Illustrated that adolescents mostly use internet for entertainment and relaxation.Further it is observed that boys use internet mainly to play games and see vedios whereas the girls use internet for seeking information and social interaction.The researcher identified that excessive exposure to internet may lead to violence, addiction, failed social relation, eating disorders, sleep deprivation, neglected family, friends and work.[6]

Internet is an ocean of information ". Internet is a universal system of computer networks that are inter connected to serve millions of people around the world. The internet provides a constant ever-changing source of information, entertainment and most of the time accessed through smartphones, tablets , laptops and desktop computers or PC. Through emails, blogs , social networks, instant messaging and message boards allow for both personal and public communication about any topic .[7]

Internet addiction disorder (IAD), also known as problematic Internet use or pathological Internet use, is excessive Internet use that interferes with daily life. Addiction, defined as a" compulsive need for and use of a habit-forming substance characterized by tolerance and by well defined physiological symptoms upon withdrawal".[8]

Definition

It is the global system of interconnected computer networks that use the internet protocol suite link the devices world wide. It is a network of networks.[9]

Meaning of Internet addiction

Internet addiction is defined as any online-related,compulsive behavior which interferes with normal living and causes severe stress on family, friends, loved ones and one's work environment. [10]

Meaning of life style

It is the habits, attitudes, taste, moral standards, economic level etc, that together constitute the mode of living of an individual or group. [11]

Aspects of lifestyle

There are following aspects of lifestyle:

1) Physical health

2) Mental health

3) Academic performance

4) Social health

5) Spiritual health. 12

Incidence

The population of India is around 1.35 billion as of 2018, Out of which the number of internet users (both urban and rural) is around 500 million by June 2018 (A report by IAMAI and kantar IMRB). At the end of December 2017, India had 481 million users, growing 11.34% from 2016. Around 1,40,00,000 school children have access to PC in home (Madhya Pradesh).India is IInd leading country in using Internet. 13

Types of Internet addiction

These are the following types of Internet addiction:

1. Cyber sex addiction / Internet pornography
2. Computer addiction
3. Addiction to cyber relationships
4. Information Addiction
5. Online Compulsion
6. Internet gaming.14

Causes of internet addiction

There are following causes of internet addiction:

1. To get relief from stress
2. To increase pleasure
3. To get comfort.15

Effects of Internet addiction

These are the following effects of Internet addiction:

1. Physical Health :Back pain,Headache ,Eye strain ,Insomnia

2. MentalHealth : Anxiety,Depression,Feeling of anger, Feeling of loneliness

3. Academic performance :Poor grades ,Low attendance ,Poor personal health

4. Social life:Broken relationship,Isolation from society, Relationship gap

5. Spiritual / Moral values : Lying, Stealing, Cheating

6. Behaviour : Violent behaviour ,Irritable behaviour, Non-socializing behaviour. 16

Signs and symptoms of internet addiction

Signs

a) Mood swings

b) Depression

c) Anxiety

d) Feeling of loneliness

Symptoms

a) Compulsive use of the internet

b) Preoccupation with being Online

c) Inability to control excessive use of internet

d) Interfere with daily activity

e) Inability to prioritize the tasks.17

Preventive measures

These are the following preventive measures

a) Gradually disconnect the internet

b) Prepare a study plan

c) Prioritize the work

d) Hangout with friends

e) Help in household activities

f) Don’t eat meals while at your computer

g) Use an alarm clock or timer while being computer. 18

Treatment options

a) Family counseling

b) Support groups

c) Educational workshops. 19

Summary

We have discussed about introduction, term internet

and internet addiction, meaning of lifestyle, aspects of lifestyle, incidence of internet addiction, types ,causes, effects, signs and symptoms, preventive measures to deal with the internet addiction and treatment options available for internet addiction among adolescents.

Conclusion

In India, a wide range of studies conducted on Internet addiction, theses studies focused on the status of the addiction in middle & higher secondary school students Who are highest Internet users. Recently, the studies on the factors related to Internet addiction are actively being carried out.

As India around 500 million people are using internet, which is drastically increasing every day. Now-a-days individuals are getting hooked on the Internet such as on pornography, Internet gambling, online shopping, searching for non important information or chatting for a very long time. Adolescents are indiscriminately exposed to the Internet although they do not have the ability to judge its positive and negative aspects. 20

Conflict of Interest : None .

Source of Funding: This study was self financed.

Ethical Clearance: This is a review article based on the study topic of Ph.D scholar and reviewer of this article. Ethical permission was taken for the study (on which this above review done) from Institutional Ethics Committee (IEC) of People's college of nursing and research centre. The information and reviews were only used for research study purpose.

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DOI Number: 10.5958/2320-8651.2019.00025.5

The Transmission Paths, Methods of Diagnosis, Prevention and Treatment of Hepatitis C in Hemodialysis Patients: Review Study

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Abstract

Introduction and Objective and Methods: Hepatitis C is one of the major health problems around the world. According to the World Health Organization, the prevalence of this disease is about 3%. Patients with renal failure undergoing hemodialysis are at risk for various infections, including hepatitis C. Immune system disorders and transmission of contamination during supportive treatments such as blood transfusion in anemic patients, and the inadequate disinfection of hemodialysis devices, increase the risk of transmission of diseases such as hepatitis C. Serum levels of liver enzymes, serological examination of hepatitis C antibodies, qualitative and quantitative molecular analysis, determination of viral genotype, liver biopsy, and histological examination, are methods that help diagnose, determine the type and extent of disease progression. In order to reduce the transmission rate and the risk of hepatitis C, we decided to review the studies to providing a small assistance for these patients, especially for high risk groups, to reduce their risk of infection.

Results and Conclusions: Due to the lack of a specific vaccine for the prevention and control of hepatitis C infection, care of patients against the infection has a significant impact on reducing their mortality.

Key words: *Hemodialysis, Hepatitis C, Renal failure*

Introduction and objective and Methods

By the 1980s, hepatitis A and B viruses were the only known types of hepatitis viruses, and other types were considered non-A and non-B hepatitis viruses. Hepatitis C virus was identified in 1989 and subsequently hepatitis D or Delta and E viruses were identified. Hepatitis C virus is a small virus that belongs to the flaviviridae family[1,2]. The genome of the virus consists of a nucleus-rich RNA protein of about 55 nm and positive polarity[3]. Hepatitis C is divided into six genotypes with different subunits. The response to treatment and the length of disease are vary in different genotypes of hepatitis C. Response to treatment in hepatitis C genotype 1b is not as good as genotypes 2 and 3. Distribution of hepatitis C genotypes is very diverse in different societies[4].

Progression and epidemiology of hepatitis C Hepatitis C has slow progression and tendency to enter the chronic phase. The situation has been reported in 50-70% of cases. 20-30% of patients develop hepatic cirrhosis and subsequently hepatocarcinoma[5]. According to the World Health Organization, the prevalence of the disease is about 3%. The majority of patients were below the age of fifty years[6].

Hepatitis C in Iran : The first study on hepatitis C in Iran in 2004 was carried out by Rezvan and et al. in the blood transfusion organization of Iran that the prevalence among blood donors in Tehran was 0.03%[7].

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The screening of blood donors in the country has now dropped to about 0.001% for each bag of blood. Now the most common way of transmitting in Iran is the shared use of infected syringes in injectable addicts[2,9].

Hepatitis transmission routes and high-risk groups

Hepatitis A and E transmitted through food and water contaminated, hepatitis B and C will be transferred through blood, semen and other bodily fluids, and hepatitis D is transmitted to people with a history of hepatitis B[24-44]. Intravenous drug users, blood transfusion, accidental exposures to contaminated syringes, transmission from mother to fetus, hemophilia, hemodialysis and organ transplants could be the most important risk factors for hepatitis C[13].

The main reasons for the transmission of hepatitis C in hemodialysis patients

Hemodialysis patients are susceptible to various infections including hepatitis C[14,15] and death due to anemia[16]. Hepatitis C is the most important cause of liver disorders, such as chronic hepatitis, liver cirrhosis, and liver cancer in hemodialysis patients[17]. According to studies published, hepatitis C is the most common chronic blood transfusion infection in the United States[18] and Eastern Europe[19,20].

The annual incidence of hepatitis C infection in different hemodialysis centers is 0.73-3%[21]. Although the incidence of infection is related to the socioeconomic status of the communities[22], regardless of the geographical area, the prevalence of hepatitis C is proportional to frequency of receiving various blood products[23]. Also, the role of personnel working in hemodialysis departments in increasing the incidence of patients should not be overlooked[24,25]. The duration and type of hemodialysis, the incidence of hepatitis in the center and the history of intravenous injections for patients in the center can be added to the above factors[19,27,28]. In addition, inappropriate disinfection of equipment also be effective in transmission of infection[24]. The prevalence of hepatitis C in Iran among patients with hemodialysis was 5-24% and 13.2% on average[29,30]. The early detection of hepatitis C in renal dysfunction patients is important.

Hepatitis C diagnostic methods in hemodialysis patients-

A – Study of liver enzymes serum levels

Centers for disease control and prevention is recommended screening for hepatitis C in hemodialysis patients, continuous monitoring of serum levels of alanine aminotransferase (ALT) and hepatitis C antibodies[31]. Hepatitis C elevates the level of alanine aminotransferase, this is known as a non-specific liver injury, although alanine aminotransferase measurements to assess the presence or progression of hepatitis C in uremic patients[23].

B – Serologic examination of hepatitis C antibodies

1. The presence of antibodies against the hepatitis C virus in the tested persons indicates an exposure to this virus. The laboratory method is enzymatic immunoassay (EIA)[22,32]. The result of this negative or positive test reveals the presence or absence of this antibody and does not indicate the presence of the virus and its titer[33,34].
2. Serologic assay (RIBA) for hepatitis C is another way that tests the presence of antibodies against the hepatitis C virus.

C – Molecular studies

1. Qualitative and quantitative RNA analysis of hepatitis C virus: measurement of RNA in hepatitis C virus is more accurate with reverse transcription polymerase chain reaction (RT-PCR)[3,32]. Several studies have shown that a percentage of patients with negative serological tests for hepatitis C antibodies were identified as positive in molecular experiments[35]. Therefore, the standard diagnostic laboratory is a molecular measurement of RT-PCR to detect the nucleic acid RNA of the hepatitis C virus. As an example, in a study of 206 hemodialysis patients in Iran, based on serological examination of hepatitis C antibodies, 23% were positive, while this rate was found to be 3.3% in the molecular method[36]. It is suggested that a molecular test for hepatitis C performed on the 4th and 12th weeks after dealing with suspected cases[37,38].

In quantitative RT-PCR virus's copies are examined. This test is often used before and during treatment (usually repeated during the first trimester of treatment) to evaluate the response to the treatment

by comparing the existing virus[34,39].

2. The genotype of hepatitis C virus is determined by RT-PCR method. Determining the genotype of virus indicates prognosis that how long treatment may be successful, and how long it lasts. Compared with genotype 2 and 3, genotype 1 (which is also the most common type) have greater resistance to treatment and usually requires longer treatment (48 compared to 24 weeks for types 2 and 3)[40,41,42].

D – Clinical examinations and biopsy of the liver tissue

In addition to laboratory investigations, a biopsy of liver tissue also helps determine the severity and extent of disease. In general, there is a weak relationship between serum alanine aminotransferase and liver disease[43]. In such cases, transjugular biopsy is a safer way with a lower risk of bleeding. Recently, a non-invasive alternative method has been introduced, called fibrotest, which based on six-biomarker serum level study, determines the extent of damage to the liver (fibrosis and tissue necrosis)[44].

Hepatitis C treatment in hemodialysis patients

A hemodialysis patient with hepatitis C who wants to get kidney transplantation should be treated before receiving kidney. Because interferon alpha treatment may result impaired renal function and rejection after receiving kidney[45]. The standard treatment for hepatitis infection in non-hemodialysis patients is a combination of interferon and ribavirin. Patients with hepatitis C are treated with intravenous interferon and oral ribavirin for six to twelve months depending on the hepatitis C genotype. But ribavirin is contraindicated in uremic patients and using of interferon cleansing the PEG chain (commercial name "pegasys") is the only therapeutic treatment in these patients[46].

The best treatment response was observed in patients with genotypes 1 and 4, with the onset of treatment in the eighth week. At least the treatment is twelve weeks, and in some cases lasts for up to six months[45,46].

Preventive methods for hepatitis C in hemodialysis patients

Due to the lack of a specific vaccine for prevention and control of hepatitis C , care for patients against the infection has a significant effect on reducing their mortality. Patient's screening for hepatitis C when entering the hemodialysis center for the first time and repeated at least twice a year, some survey recommends every three-months screening[17].

Almost all articles written about hepatitis in hemodialysis patients believe that compliance with hospital health rules is vital in prevention the spread of hepatitis, and carry out the general health rules in the dialysis ward, and disinfection of the hemodialysis apparatus, is contributing to decrease infection. Disposable products in the hemodialysis process should be discarded after being use by the patient. The fixed parts of the device should be well disinfected or assigned to a specific patient. Disinfection of the internal path of the device is necessary only in case of blood leakage. Also, in the interval between hemodialysis of patients, staff members should have enough time to completely disinfect the contaminated surfaces and the device[47].

Results and Conclusions

In surveys around the world about the spread of hepatitis C infection in hemodialysis patients, using laboratory methods with high sensitivity and specificity and early detection of carriers of hepatitis C virus before using hemodialysis units, proper monitoring of hospital's health and disinfection of hemodialysis units after patients' use and promoting the cultural and health level of communities have been introduced as the main methods of controlling this infection. Well-timed and appropriate treatment of the patient is also important in reducing the complications of disease and preventing its transmission to the family members of the patient and other community members.

Conflict of Interest and Source of support: There isn't any conflict of interest in our article , and Islamic Azad University of Borujerd, Iran is our sponsor for doing this project.

Ethical Clearances: Our study was review of literature and had not any samples.

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