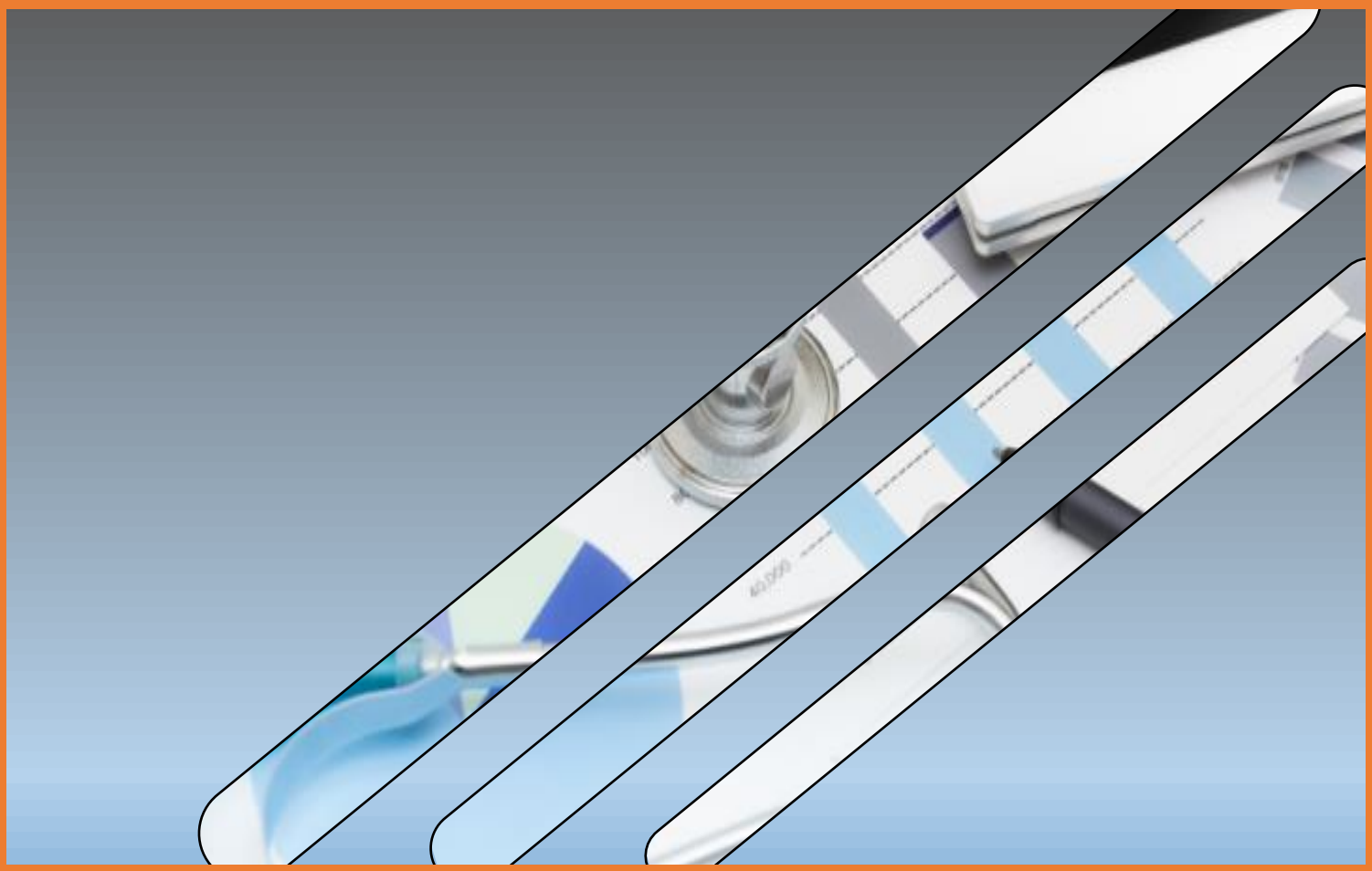

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EDITORIAL COMMENT

Editorial Thanks: IHRJ Completes Five and a Half Years of Successful Publication

IHRJ Editorial Team

Dear readers and authors,

It is an immense pleasure to inform you that the current issue is the 65th Issue in the glorious publishing history of IHRJ, and we have completed five and a half years of providing an international global platform to all our authors and readers to publish, read and disseminate scientific knowledge.

Although we have conquered COVID-19, the world still looms at the threat of various emerging disease outbreaks across the globe.

This issue is a testament of our commitment towards our readers as we have been publishing all issues on time and have been uploading articles on various indexing agencies.

We do look forward to your commitment for our future issues. Our rigorous double blind peer review process ensures maximum transparency both for our readers and authors.

The editorial team of IHRJ wishes you success in all endeavours.

As per our policies since the initiation of the journal, you are free to contact us at our email id or phone numbers mentioned in our website.

It always remains our earnest endeavour to reply to your mails within 24 hours.

With Thanks and Regards,
Editorial Team
International Healthcare Research Journal (IHRJ).

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SHORT COMMENTARY

QR CODE

Bouncing Back To Work-Life – An Overview on Post-Covid Management!!

SURABHI DUGGAL

ABSTRACT

The pandemic disease has affected many countries all over the globe. The ailment mimics various universal illnesses along with peculiar signs and symptoms. Including a high fatality rate, it has also disturbed the dispatch of other diseases thus obstructing the frail health system in India. An effort to vaccinate a majority of the population. The use of non-pharmaceutical preventive measures has been scaled to prevent further decline. The protocols for nutritional management take into account features of the pandemic, along with the condition and need of the patients. Hopefully, the instructions outlined here will help improve health care around the world.

KEYWORDS: Pandemic, Diet, Sleep, Healthy Lifestyle

INTRODUCTION

Microbes present in the environment can be described as 'microscopic organisms' that exists as single cell, many cells, or as clusters of cells. They are universal and are healthful to life, except for some which can cause major harm. Majorly they are bacteria, archaea, fungi, protozoa, algae, and viruses.[1]

A virus is an infectious organism that duplicates only inside the cells of a living organism.[1] They are known as "organisms at the edge of life", since they possess genes, evolve by natural selection, and reproduce by creating multiple copies of themselves through self-assembly. Viruses make use of a host cell to make new products since they do not have their metabolism, thus they cannot naturally reproduce outside a host cell.[1]

COVID-19 induced by a severe acute respiratory syndrome coronavirus 2 has been announced by the World Health Organisation as a pandemic on 11th March 2020. These viruses are essentially responsible for enzootic infections in animals and are also suited to transfer it to humans and cause infections identical to SARS-CoV and MERS-CoV.[2]

The method of spread of the virus is via a cough or a sneeze from an infected person that leaves small droplets in the air or even by stool. Inhalation of these droplets or contact of the infected surfaces may further get infected.[4,5] The patient presents with symptoms such as fever, cough, headache, fatigue, muscle/body ache, loss of taste/smell, sore throat, nausea and diarrhoea.[4]

In case of a mild disease like fever, cough, sore throat it is important to isolate in a well-ventilated room with arrangements of online/ telephonic consultation with a doctor. In case of severe disease such as difficulty in breathing, and persistent high fever it is recommended that medical advise be seeked as well as self-care be emphasized.[4]

Presently, no cure for the disease is available. Thus, alternative methods to control the spread of the virus need to be followed.

A healthy immune system is vital for shielding us from a number of diseases, and one way to accomplish this is a balanced diet. Nutrition has a positive impact as it might be a way to support older people at higher risk and people with pre-existing conditions. The importance of a good diet has gained more significance, with viruses such as COVID-19 having ravaged the globe.

A NEED TO TAKE CARE!

The disastrous virus has devastated homes, lowered immunity levels while inducing weakness in ill-bodies. If the microbial infection was moderate to severe, some harm to the respiratory system might have occurred. Furthermore, people with mild infection have to be watchful in the post-infection stage as manifestations of other health conditions set by the virus may surface.

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The body becomes weak after having battled the dangerous virus for so many days.

Even if our body has killed off all the viruses, we need to shower ourself with a lot of love and care. This will ensure that complete healing takes place and in case of any requirement for additional healthcare checks, the right action at the right time can be taken.

Recuperating from Covid generally takes around two weeks for mild cases and about a month for people with serious infection. A superior recovery rate is seen explaining the reason for a sooner recovery and a slow get back to the old lifestyle after contracting this infection.

Every effort to beat the virus, WHO and the government urge the community to support recovery efforts by boosting their immunity. Here are certain reminders on how to keep the virus at bay.[6-10]

1. Take rest: Staying isolated for another seven days even if the symptoms disappear has been suggested by many doctors, as some studies have found that, the virus may still linger in the body. Give a week of complete rest after recovery since a well-rested body can focus on healing. Enough sleep is essential. Too much work, stress, and anxiety will make the body ill.

2. A nutritious diet: Food eases the path to recovery. The most crucial need of our body is energy. The right kind of food will help gain strength back in days.

NOW IT'S ON IMMUNITY!!!

Keeping the immune system healthy is the key to preventing, fighting infection. Basic good health is the key to immunity.

Eat – Local, Seasonal, Traditional

A balanced diet includes plenty of proteins and carbohydrates. Proteins repair the body while carbohydrates take the least effort on our metabolism. Healthy fats help in boosting the immune response to pathogens by decreasing inflammation.

Whole grains, semolina are rich sources of carbs. Bread and cereals also provide easy-to-digest options. Below are certain points to be followed:

• Intake of small frequent meals.
• Choosing proteins (paneer, egg) in adjunct with a fruit
• Having medication post meals.
• Considerable hydration along with milk, juice, chaas, and smoothies.
• Peanut butter sandwich, parantha, Nuts, and seeds also provide energy.
• Healthy oils and fats - olive oil can be added to a fruit salad and peanuts to curd. Once strength is regained, going back to the normally added fat is recommended. Proteins are the building blocks of our bodies. Muscle mass during illness needs to be replenished thus addition of proteins to every meal is critical to rebuild the body. Depleted proteins also mean lowered immunity. Spreading the intake of proteins through the day will help to utilize it.
• Egg/paneer for breakfast, dal for lunch, and chicken or soy nuggets for dinner is a good option.
• For snacks, a combination of carbs and protein, helps the protein be utilized for its primary function - cheese with fruits, dry fruits with nuts, curd with fruits.
• Probiotics protect our body - consumption of at least 600 ml a day proves beneficial.

A talk to the nutritionist for a supplement that will help tide over in case of a difficulty in eating.

While discharge, the doctor recommends having certain vitamins and mineral supplements for a period. Also, the same vitamins should be consciously included in daily meals to enhance recovery.

Vitamin C is a strong antioxidant specific to lung health. Few good sources being citrus fruits, tomato, spinach, papaya, mango, kiwi and strawberries. It is a water-soluble vitamin, consumption of adequate amounts daily is a must.

Zinc is an important nutrient that strengthens immune health. It is advised to stick to the prescribed amount. Some sources include Rajma, Lobia, Chana, almonds, Pumpkin seeds, Chicken, Milk, and Cheese.

Vitamin D also serves as a hormone and affects the immune system closely. A positive correlation between Vitamin D and better COVID outcomes has been found. Absorbing sunshine is the best source. Soak in early morning sunshine for a minimum of 20 minutes or a division of the same into two or three exposures. Furthermore, sunlight releases Nitric Oxide from our skin stores which is beneficial and protective to heart health.

Certain immune boosting foods include – olive oil, elder berries, turmeric, ginger, garlic, green tea, tulsi,

ashwagandha, brahmi, ginseng, giloy, and other immunonutrients, nuts, oats, oregano.[11]

3. Exercise a little every day: Exercising though unappealing is essential for a speedy recovery. Regular exercise improves the health of every organ in the body. Working out improves blood and oxygen circulation. It detoxifies the body, improves quality of sleep and immunity. Moreover, it helps the brain to produce more happiness hormones. Regular exercise enables the immune system to generate more antibodies. Swimming, running or normal cardio can help fight against COVID-19 in a way that the chances of hospitalization and death are lowered. 10 minutes a day will suffice.

4. Quit smoking: Smokers are at a higher risk of acquiring COVID-19 as the process of smoking involves contact of a finger to the lips. This raises the chances of transmission of viruses from hand to mouth. Smoking hookah or shisha also involves sharing of mouthpieces and hoses. Switch to nicotine replacement therapy such as nicotine gum, patches, lozenges, nasal inhalers to kick the habit.

5. Lose weight: Being overweight is associated with poor immune functions. Overweight people are more prone to develop metabolic syndrome and diabetes, thus compromising immunity. Excess body weight creates excess fatty cells which create inflammatory proteins that desensitize the immune system. It also causes inflammation and increases chances for a blood clot- all of which can worsen COVID-19.

6. Play a few memory games: COVID is known to damage brain and neural cells. To prevent future memory problems, playing some memory games like sudoku, mathdoku, crossword, jigsaw, etc. will help while away the time without getting bored and irritated.

7. Monitor blood oxygen level: Continuous monitoring of blood oxygen saturation levels even after recovering from COVID, can indicate lung damage that we don't know of. If so, the oxygen level will fluctuate and dip below 90.

8. Lesser the stress, the higher the immunity: Stress weakens the immune system as the ability to fight off antigens is reduced, making us prone to infections. To curb stress, regular exercise, a balanced diet, relaxation techniques, avoiding long working hours, setting realistic goals and expectations.

9. Welcoming negative thoughts[8] Being in distress or thinking negatively about possible situations can be painful. It induces and raises apprehension and fear levels finally influencing health.

Few approaches to lower worrying involve:
• Writing down uneasiness and their likely consequences. Looking at a situation and thinking about good likely points. Giving positive affirmations will help cope up.
• Explore facts about one's prognosis and their likely outcomes.
• Talking to a buddy.
• Reading, walking, or binge watching.

10. Watch out for other symptoms: COVID can have long-term consequences on health. It can cause both lung and heart damage. Any experience of shortness of breath, tightness in the chest, warm flushes, should be consulted with a doctor right away.

COVID care is essential and should not be ignored. This is a great investment for future health!

A SARS-CoV-2 virus consists of a lipid outer layer which protects the inner content of the virus thus a soap or an alcohol- based sanitizer works effectively in dissolving this lipid layer and damages the inner content of the virus. Hence the ability to enter a human cell is diminished. This proves the essentiality of regular washing hands or a constant use of a sanitizer.

CONCLUSION

We are at COVID related risks because of-
- Pollution
- Poor investment in public health
- No social distancing

Our health is interlinked with economy and ecology. Eating local and seasonal is good for both the health of the people and of the planet. Regulate junk food as comorbidities make things worse.

Common sense is greater than panic and fear. Let positivity prevail in the mind and air. The perception of security from the virus makes us take great risks (Peltzman effect). Use of masks, hand wash, and sanitizers must be carried out judiciously even if we are vaccinated.

In addition to these diet tips, nutrients necessary for health should also be consumed. Since recovery takes

time, a need to eat, rest as well as setting aside all the bad experiences is the key to becoming truly healthy. As rightly said "When diet is wrong medicine is of no use and when diet is correct medicine is of no need".

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REVIEW

QR CODE

Laser Assisted Root Canal Treatment: A Review

SUCHETA THAKUR [1], SARYU BAKSHI [2]

ABSTRACT

Complexity of root canal system leads to failure of endodontic therapy so to address this issue lasers have been investigated as an adjunctive. Lasers has been used in direct irradiation of root canal or adjunct to irrigants placed into the canals. Laser assisted root canal therapy has more benefits than traditional root canal therapy. It ensures complete sterilization of root canal.

KEYWORDS: Lasers, Root Canal Therapy, Photoacoustic, Disinfection, Benefits

INTRODUCTION

RCT or root canal therapy is a dental procedure that is performed to treat the pulp of an infected tooth. Laser stands for Light Amplification by Stimulated Emission of Radiation. Lasers work by emitting intense, focused light energy, the specific properties of which can interact with living tissue. Hard tissue lasers (Er: YAG, Er, Cr: YSGG) are used to cut tooth structure, while soft tissue lasers (diode, CO_2, Argon and Nd: YAG) are used to clean and disinfect canals.[1]

WHAT IS LASER ASSISTED RCT

This is a procedure where a laser is used to assist the RCT. This is a more safe and effective method than traditional procedures. A laser is used to clean and sterilize the root canal and burn away the remaining tissue, which helps in increasing the success rate of the root canal treatment.[2]

TRADITIONAL RCT VS LASER ASSISTED RCT

The result of root canal treatment is based on effective disinfection of the root canal and is outlined in table 1.

MECHANISM OF ACTION

In endodontics, lasers use photothermal and photomechanical effect. In photothermal interaction due to laser irradiation there is rise in temperature which causes denaturation of proteins, increased mitochondrial membrane permeability and ultimately vaporization.[3]

Photomechanical (photo acoustic) interaction causes the generation of shock waves produced due to pulse-laser interaction. When laser energy is stored in tissue as heat, there is thermoplastic tissue expansion which yields stress. If a pulse is very short the stresses are concentrated in a small region generating very high stresses which can propagate into tissue more intensely and cause physical cellular damage or spallation which is emission of material fragments due to stress that removes surface layers of tissue.[4]

TRADITIONAL RCT	LASER ASSISTED RCT
Cleaning and disinfection by mechanical debridement and chemicals.	Along with mechanical and chemical debridement lasers are used.
Irrigants and intracanal medicament penetrate 100 microns into dentinal tubules.[2]	Laser light penetrate >1000 microns
Cannot ensure complete sterilization	Ensure complete sterilization
More aggressive procedure	Less aggressive

Table 1. Traditional Vs Laser Assisted RCT

BENEFITS OF LASER ASSISTED RCT[5]

1. Less aggressive so it helps in reducing post op complications like swelling, pain and bleeding.
2. Lesser chances of re-infection.
3. Less bleeding, so healing is faster.
4. Less time consuming, so can be completed in a single visit in suitable patients.
5. Minimal invasive technique which conserves the tooth structure and avoids loud drilling sound.

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6. Patient acceptance is high.

DISADVANTAGES

1. Root canal spaces are curved while laser has straight path.
2. Communication between laser energy and tooth structure may cause elevation in temperature.
3. Require attention to safety precautions and specialized training.
4. Costly and requires maintenance.

TYPES OF LASERS AND ITS USES[6]

The types of lasers and its uses in depicted in table 2.

LASERS	USES
Er, Cr: YSGG (2780nm) Er: YAG (2940nm)	Access cavity preparation Cleaning and shaping
Er: YSGG (2780nm), Er: YAG (2940nm) and Nd: YAG (1064 nm)	Canal wall preparation
Argon laser, CO_2, Nd: YAG	Obturation (VERTICAL CONDENSATION)

Table 2. Types of Lasers and its Uses

DELIVERY SYSTEM

The emitted energy can be delivered into the root canal system by:-

1. Thin optical fibre (Nd: YAG, erbium, chromium: yttrium scandium-gallium-garnet [Er, Cr: YSGG], argon, and diode)
2. By a hollow tube (CO_2 and Er: YAG).

COST OF LASER ASSISTED RCT

The cost of laser root canal treatment in India ranges from 5,000 to 15,000 rupees. However, prices vary based on multiple factors such as the severity of the condition, the location of the teeth, the doctor's experience, the location and the type of hospital.

CONCLUSION

After several decades of research, the evolution of laser technology at this period of time is in a high degree of refinement. With the introduction of thinner, more flexible and durable laser fibres, its use in endodontics has enormously increased. The New laser system is focusing on upgrading the existing delivery system and fibre type.

Its improved antiseptic efficacy, more effective root canal irrigation, reduced permeability, reduced microleakage, and elimination of the need to use toxic solvents are major benefits for dentists.

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ORIGINAL RESEARCH

QR CODE

Parenting Practices among Mothers in Obubra, Cross River State, Nigeria: An Exploratory Study

ANTOR O. NDEP [1,2], EMMANUEL E. UGOBO [1,3], MARGARET I. AKPAN [1], MARIAM O. USHIE [4]

ABSTRACT

INTRODUCTION: More than half of Nigeria's children under the age of five are at risk of poor development that may be linked to parenting practices.
OBJECTIVE: This study explores parenting practices among mothers in Obubra Local Government Area of Cross River State.
MATERIALS AND METHOD: Using a Cross-Sectional descriptive design, focus group discussions were held at three communities in Obubra with mothers aged 18 and older. With a sample size of 19, each FGD lasted about 60-90 minutes. Audio tapes were transcribed and data were analyzed to generate themes. Ethical principles were duly observed.
RESULTS: Themes influencing parenting included pre- and post-pregnancy support, social support from female family members, and religious, and cultural practices. Participants attended ante-natal clinics but some gave birth at home or at a Traditional Birth Attendant's (TBA). Some believed that parenting skills are acquired as a child while observing one's own mother, and practicing with younger siblings. Others said they acquired parenting skills while parenting their own children. Female family members helped mothers with everyday caregiving responsibilities. Corporal punishment was widely practiced. Other harmful cultural practices such as female genital mutilation were on the decline.
CONCLUSION: Culture, religion, and reliance on female family members play a strong role in parenting, presenting both positive and negative attributes. Using appropriate behavioural change theories, evidence can be provided to these support systems to aid mothers to acquire skills and information necessary for positive parenting practices.

KEYWORDS: Positive parenting, Social support, Parentification, Harmful cultural practices

INTRODUCTION

The awareness of the impact of parenting on desired child outcomes has increased considerably in the last two decades.[1] Growth in the fields of developmental science, biology, and neuroscience, has led to substantial changes in the understanding of how children develop and the role the early environment plays in that development. This has allowed researchers to move beyond the nature versus nurture debate and direct attention to better understanding "nature through nurture". Child development is a continuous two-way interchange between genetic heredity and environmental experience, primarily the environmental experiences that occur between an infant and their caretakers.[2]

During these early years, the foundation for health and well-being is established. Although there is no one right way to parenting, there are core components of effective parenting that have been linked to improved physical, mental, and social/emotional outcomes for all children.[1] These include nurturance, warmth, sensitivity, and responsiveness; predictability and consistency; parental monitoring and protection; and the absence of harsh and punitive forms of discipline.[3-6] Positive Parenting is part of the set of functions attributed to parents taking care of their children and is fundamental for the child's health and development.[7] Experts believe there are core components of effective parenting that require specific knowledge, skills, and practices as against the assumptions that good parenting flows naturally and automatically from simply having concern for one's children".[8] Positive parenting holds tremendous promise as a counterbalance to the risks associated with negative parenting; thus, evidence-based parenting programs represent one of the most important approaches in the arsenal of maternal and child health services.

Statement of the problem: One child in 12 dies in the first year, and one in eight does not live to age five. More than half of Nigeria's children under the age of five are at risk of poor development due to a lack of

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early childhood development support.[9] A report by United State Central Intelligence Agency (2018), showed that Nigeria ranked 8th in infant mortality rate; 89.8 deaths/1,000 live births.[10] Nigerian children are exposed to many unhealthy practices such as Female circumcision and vaginal mutilation[11,12], early marriage[13], purging of infants to get rid of impurities, and denial of colostrum.[14] These practices complicate maternal and child health; and, in the long term, result in poor physiological and psychological health outcomes.[15] In a typical Nigerian rural society, there are cultural beliefs that children are usually given small meats or bones while the big meat or flesh is reserved for the adults, this leads to a condition of kwashiorkor which is a result of lack of protein in the system. Harmful cultural practices such as female genital mutilation, genital compression[16], scarification and tribal marks are practiced commonly all over Nigeria.[15]

Even though exclusive breastfeeding for the first six months of a baby's life has clearly been shown to improve physical and mental development, only 24% of Nigerian children are exclusively breastfed for six months.[17] Poor knowledge of parenting could lead to unnecessary clinic visits and increased vaccine-preventable diseases including childhood illness, unintended injuries, maternal anxiety, and malnutrition.[18,19] Greater numbers of stressful life events in early life can result in a greater likelihood of negative outcomes later in life. Early-onset of emotional or behavioral problems that are associated with negative parenting increases the risk of numerous adverse outcomes that persist into adolescence and adulthood, such as delinquency, violence, substance abuse, mental health problems, teen pregnancies, school dropout, and long-term unemployment.[20] Evidence suggests that the quality of parenting a child receives is considered the strongest potentially modifiable risk factor that contributes to physical, mental, and psychosocial well being. Despite existing evidence on the effect of parenting on the physical, social, and mental well-being of children, only a few parents make a conscious effort towards acquiring skills required for parenting based on the assumptions that good parenting flows naturally and automatically from simply having concern for one's children.[8,21]

MATERIALS AND METHODS

Study population: The study population consisted of mothers who have given birth to at least one child and are currently residing in Obubra, Cross River State, Nigeria.

Sampling: For the three focus group discussions, a minimum of six and a maximum of 10 information-rich participants each to discuss one subject matter (parenting) in one community in Obubra was considered adequate to achieve data saturation. Two of the groups had six participants each, and the third group had seven, making a total sample size of 19 for the FGDs. This method of recruiting implies that data generated from the study can have substantial relevance to the study participants.[22]

Data collection: A Focus Group Discussions (FGDs) protocol was designed to explore the experiences of mothers on parenting. The FGD protocol was divided into four sections. The first section introduced the FGD, including the ground rules and ethical considerations. The second section had icebreakers and other group activities to help participants relax and feel free to discuss with each other. The third section covered questions on mothers' experiences during pregnancy, childbirth, and parenting, while the final section provided the researcher the opportunity to offer closing remarks and appreciation of the participants. Prior to the FGD sessions, each participant was requested to complete a consent form, an FGD attendance form, and a participant profile form. A variety of group techniques were used in the conduct of the FGDs. These included brainstorming and general group discussion on cross-cutting issues. Each session was moderated by a facilitator whose responsibility was to guide the discussion utilizing the prescribed guidelines, provide relevant background information and clarification on related issues or questions, and provide an open and non-judgmental space for the participants to have free-flowing dialogue. Each FGD was convened at a venue free of interruption or excessive noise interference, and convenient to participants and lasted between one hour and 1.5 hours. Participants were assured of confidentiality, the right to withdraw from the FGD, and to decline to respond to any questions if they felt uncomfortable. The focus group discussion was recorded and later transcribed for analysis. The tapes were locked in a cabinet. Only the lead researcher has access to the tapes.

Data analysis: The focus group discussions were recorded and later transcribed for analysis. The tapes were in a cabinet to ensure confidentiality. Only the lead researcher had access to the tapes. Content analysis was used to evaluate initial coded themes from field notes. All transcripts were coded by the researchers. First, general themes related to overall

perceptions of the experience of mothers were examined. Two coders independently identified codes from the generated textual data, and then three forms of coding (descriptive, topic, and analytical) was applied. In descriptive coding, summary descriptors were created for each paragraph of text. The texts were organized into sections for topic coding by grouping text segments and labelling them. For analytical coding, the researcher created codes that expressed new ideas about the data by considering the meanings in context. Codes used fewer than five times were evaluated to identify if associated quotes within the transcripts would fit more appropriately under another code. The study protocol was approved by Research Ethics Committee of Cross River State Ministry of Health (CRSMOH/RP/REC/2018/105).

RESULTS

Antenatal experiences: The women reported attendance at ANC session and shared information received during session including benefit of putting to birth at the health center, danger signs of pregnancy, family planning, and healthy living.

"During antenatal I was told not to eat meat, and diet that contains salt because of high level of protein diet. I so much like white chalk but was advised not to eat chalk because of its effect on the health" (FGD participant).

"When growing up, I promised myself not to put to birth at the health centre but in my last ANC session, the nurse sat me down and gave me reasons why I should put to birth at the health centre" (FGD participant).

"The last ANC I attended, the nurse educated us on the danger signs of pregnancy and what to do to ensure we remain safe throughout the period of pregnancy" (FGD participant).

Some of the Participants reported delivery at the health centre. Reasons for delivery at the health centre included, safety, fear, trust and pressure from mothers and/or mothers-in-law.

"I gave birth in the health centre … My mother in-law insisted that I must give birth in the health centre due to her previous experience of home delivery that led to loss of life" (FGD participant).

"I gave birth in the health centre, with the hope that when complications arise, they will handle it or refer because they are well trained" (FGD participant).

Healthcare facility versus home birth: Although some of the participants reported giving birth at the health facility, many of them reported giving birth at home and Traditional Birth Attendant (TBA) homes. Reasons for home delivery included religious/cultural believes, attitude of healthcare workers, care and support from TBA.

"My mum insisted that I give birth at home…I gave birth at home… even my last experience in the hospital was worse than giving birth at home… the healthcare worker handled me roughly" (FGD participant).

"My mum suggested that I should deliver at home because only women without strength deliver at home… I should use the money meant for hospital to get baby things" (FGD participant).

"It was revealed to me in the church that I should put to birth in the church to avoid spiritual attack by the enemies" (FGD participant).

"The woman that assisted me during delivery at home was so nice compared to those nurses that will be shouting at you for no reason" (FGD participants).

Postpartum experiences: Some of the respondents shared their experiences during postpartum period including religious and cultural practices in caring for themselves and the infant. The excitement of birth overwhelmed their parenting role. Most of the participant's experience support and love from female members of family throughout the initial postpartum period.

"After delivery my mother in-law visits me, this period is called "Oman…. She stays until I am strong… she educates me on how to take care of my baby…. She encouraged me to exclusively breastfeed my baby." (FGD participant)

"My sister in-law visited me, helped me to prepare fufu…. For four days my mother will bath me and my baby…… mother in-law asked me to used palm oil, salt and close up to clean the baby's novel" [navel] (FGD participant).

"My mother visited me, I was afraid of my baby's novel [navel], she assisted me to bath my baby till the novel fell off. She asked me to give my baby akamu and water at the age of two months so that the baby will not die of hunger" (FGD participant).

"My mother in-law advised me to constantly bath with hot water to expel the bad blood in my system... Imamana [blood clotting inside the womb] happens to women that don't drink hot water or take hot meals" (FGD participant).

Source of parenting skills: The participants reported that they acquired their parenting skills from their mothers, while some of them learned the process of parenting while parenting.

"Whatever am currently doing as a mother, I actually learnt it from my mother.... She is a very good woman with a good heart.... She loves God and a core discipline woman" (FGD participant).

"I was not prepared to be a mother at this age... I got pregnant without preparation; every day I learn something new based on my baby's attitude" (FGD participant).

Participants stated that mothers are the primary caregivers of children. Major activities within the home, such as feeding, cooking, bathing and cleaning the house, are the responsibility of mothers while fathers are responsible for providing financial support and disciplining the children.

"As a mother, my role is to take care of the house, make sure that I prepare food for my husband and children, keep the house clean, bath the baby" (FGD participant).

"My husband is a very busy man; he leaves the house early in the morning in search of money to support the family..... I try as much as possible to prepare the best food for my husband and also take our child to school" (FGD participant).

Caregiving support: Participants agreed that grandparents, aunties, and siblings help mothers in everyday caregiving responsibilities. There were mixed perceptions regarding the extent to which fathers help with caregiving. Grandmothers and siblings appear to be more involved with everyday child care.

"At the early stage of my delivery, my mother in-law came around... she assisted me a lot... Made easier for me..... because when you just put to birth, you will not have enough energy to take care of yourself and your baby" (FGD participant).

"My younger sister is staying with me; she helps me to keep the house clean and also help me to carry the baby when am tired... Without her support, it will have been very hard for me" (FGD participant).

"My own case is different, my husband use to help me carry the baby... He does not play with his baby boy" (FGD participant).

Feeding practices: On feeding practices, most of the participants acknowledged the importance of exclusive breastfeeding, very few them exclusively breastfed their babies. Older, female family members, especially mothers and mother-in-laws played a significant role in encouraging use of water and breastmilk substitutes.

"I know exclusive breastfeeding is good but is not easy, the last time I tried it I was eating like cow and added weight within a short time" (FGD participant).

"My Mother did not support my idea of exclusively breastfeeding my baby... She said I should not starve her grandson" (FGD participant).

"I give my baby Akamu and the breastmilk... the breast milk alone will not be enough for my baby" (FGD participant).

"I use to buy SME gold for my baby... although it is very expensive..... Am thinking of any other food that is cheaper and ok for my baby" (FGD participant).

Interacting/communicating with infants: On talking to babies, most of the mother's belief that the baby will not understand because of their age. Some participants however, agreed that it is important to talk to a baby that is less than two months old.

"It's not a bad idea to talk to your baby that is less than 2-months but the baby will not understand you.... Baby only start understanding at the age of 5 years" (FGD participant).

"Whenever I talk to my baby, she smiles, that actually makes me happy... when my baby cries I speak to the

baby to stop crying, sometimes she stops while sometimes she doesn't respond to my pleading" (FGD participant).

Culture and parenting: Female Genital mutilation classified by the World Health Organization as a harmful cultural practice, is still ongoing in some communities however, the practice is no longer common as reported by participants during discussion.

"Before, when a baby girl is born, they cut the baby's vagina to protect the girl's future but now only few people do it" (FGD participant).

"Some people came to our community to tell us that the practice is not good, because of that, some people decided not to circumcised their children" (FGD participant).

On discipline, participants reported that they all beat children, although the onset of the age when the beating begins varied, with the youngest being five years of age. These mothers reported that the most commonly used form of discipline was corporal punishment. Other strategies include withholding food and/or playtime, or assigning extra chores.

"When my child is stubborn, I beat the hell out of him.... Remember the Bible said if you spare the rod, you will spoil the child" (FGD participant).

"Outside flogging, sometimes when my child is stubborn, I don't give him food when others are eating so that he will learn lesson" (FGD participant).

Although the participants described their experiences of parenting with varying degrees of detail, the women in this study strongly belief that culture has an important role to play in terms of how a child is raised in the community.

"We are all from this community, the way we train our children is based on how we were trained by our parent" (FGD participant).

"We have our own culture that guides how we behave and how we train our children, most women copy other culture which is not good" (FGD participant).

"If all men and women in this community train up their children in the way they should grow according to what the Bible says, we will not be having any issues in our community" (FGD participant).

On setting and enforcing rules, participants were of the opinion that it was their duty as mothers to either be rigid or flexible.

"It's my responsibility as a mother to provide whatever my baby want at any time he or she want it". (FGD participant).

"For you to succeed as a mother or father, you must set out rules and regulations that a child must obey to avoid spoiling the child, for example my children shouldn't stay out late at night" (FGD participant).

"Most children are very lazy; As a mother my role is to ensure that my child eat and go to school while my child has to help me clean the house, sweep the compound, fetch water and follow me to farm" (FGD participant).

"As a mother, what I mostly do is to see the best I can do make my child better at what he or is doing. When a child is encouraged and supported, he or she developed confidence and trust on the parent" (FGD participant).

"As a mother I don't thinks it's advisable to do everything for a child, sometimes you can allow them to do things themselves; although most of them end up making mistakes. I remember one day I left my 13-year-old girl at home to help prepare evening food, when I got home I tasted the food, it was salty, I had to show her how to add salt to food. She was able to learn from experience" (FGD participant).

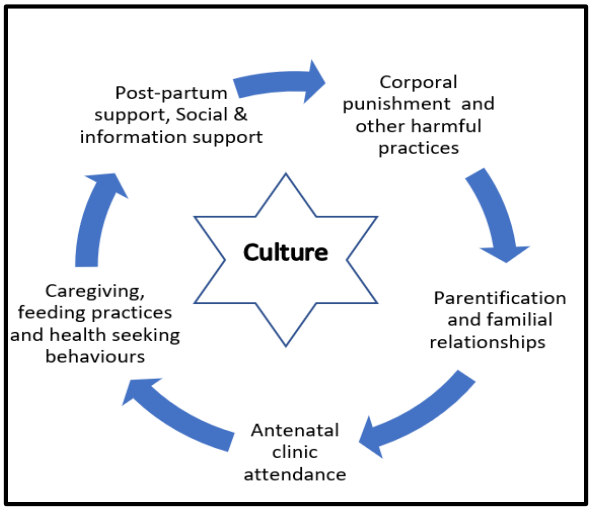

Figure 1. Culture as a Central Domain Influencing All Aspects of Parenting

DISCUSSION

The key themes resulting from this exploratory study include; antenatal experiences, healthcare facility versus home birth, postpartum experiences, source of parenting skills, caregiving support, feeding practices, interacting and communicating with infants and culture and parenting. Although the participants in the FGD described their experiences of parenting with varying degrees of detail, more women strongly believe that culture has an important role to play in terms of how a child is raised in the community. While there are no formal parenting classes in Obubra, this study found two sets of opinion about how parenting skills are acquired. The first group of mothers in this study were those who believed that they learned about parenting while parenting their own children. And then, there are those who learned from their own parents, especially their mothers. These group tended to be those who helped to parent their own younger siblings which is a common phenomenon in Nigeria. The role of older children caring for their siblings is described in child psychology literature as parentification.[23]

Parentification is defined as a situation where a child takes on the nurturing role of a parent towards their own siblings and in some cases towards their own parents (role reversal). Parentification becomes abusive when the physical and emotional expectations exceed the developmental readiness of a child. This emotional abuse may spill over into adulthood and influence the parenting style and other relationships in adulthood.[23,24] Parentification may be a common practice in Obubra as in other parts of Cross River State, Nigeria, and therefore be considered a cultural practice. According to Ulfa, Husniah, and Wijaya, (2019), culture helps parental development and parenting practice. Culture is nurtured and transmitted by influencing parental cognition which in turn is considered to form parenting practices. Useful culture is understood as a set of distinctive patterns of beliefs and behaviors that are shared by a group of people and which functions to regulate daily lives. This trust and behavior shape how parents care for children. Thus, experiencing a unique parenting pattern is the main reason that individuals in cultures are different and often differ from each other.[25] The degree to which respondents in this study were parentified is not clear and may require further exploration.

Mothers in this study narrated their experiences in the pre- and post-partum periods. During pregnancy there was limited support from extended family however, most experienced support and love throughout the postpartum period. Participants reported experience with social support systems, especially among female family members; mothers, mothers-in-law, sisters and aunts. This is a cultural practice popularly known as 'omugwo' where women are taken care of after giving birth. In a 2018 systematic review paper, Downe and colleagues reported one major theme; 'it takes a family to raise a mother'.[26] In contrast, in a related survey study, only 22% of the surveyed population had poor knowledge of child support, services, and systems in the community.[27] Information and support from significant others and sufficient advice from health professionals have been shown to contribute to feelings of competence and success of parents in their new role, and to be significantly associated with the support services they have received.[28]

On feeding practices, most of the participants acknowledged the importance of exclusive breastfeeding, yet very few of them exclusively breastfed their babies. Participants in this study reported that they have introduced water, formula and other complementary foods to their babies below the age of 6-months which is contrary to the World Health Organization's recommendation of six-month exclusive breastfeeding (EBF). Good breastfeeding practices especially EBF could prevent about 11.6% of under-five deaths in developing countries.[29,30] Similar findings were reported by a study on infant feeding in the Democratic Republic of Congo, where regardless of the mothers' knowledge on the benefits of EBF, most babies were given water and breastmilk alternatives within the first three days of life.[31] In this study, older, female family members, especially mothers and mothers-in-law played a significant role in encouraging the introduction of water, breastmilk alternatives and supplementary foods to infants and young children. Similar findings were reported in a South African study.[32]

As for harmful cultural practices, the main one identified by participants was Female Genital mutilation. This practice is aimed at controlling promiscuity among females and it is believed that this control will 'protect the girls; future'. There is no scientific evidence however, that FGM achieves the control of promiscuity or protect a girl's future.[33,34] Rather, it has been shown to violate a woman's right to sexual pleasure, puts women at risk of irregular tearing of the genital area during childbirth and has been implicated in the death of girls and women who got

cut. With a strong female support system, FGM practices can be eliminated completely in Obubra. World Health Organization reports that health workers, girls and women are becoming experts at preventing FGM in Somalia.[35] There is a huge human and economic cost associated with FGM practice. It is estimated that it may cost up to $1.4 Billion per year to treat FGM-related health and economic issues globally.[36] On setting and enforcing rules, participants were of the opinion that it was their duty as mothers to either be rigid or flexible. When asked, participants reported that they all beat children although the onset of the age when the beating begins varied, with the youngest being five years of age. This form of discipline may be illegal on other countries and are considered an infringement of the child's rights[37] but in Nigeria, traditional and religious arguments abound in support of corporal punishment for children. The women in this study gave a scriptural quote, 'spare the rod and spoil the child' when speaking in support of corporal punishment.

On health-seeking behaviours, Mothers in the three FGDs reported similar reactions to children falling ill, including taking them to the health centre, visiting a traditional healer; prayer; seeking advice from friends and neighbours; or relying on traditional remedies involving herbs and leaves. Self-diagnosis and treatment for various ailments is common practice in Nigeria[38] which has led to serious health complications. Use of traditional health practitioners is also common with reasons being that they are readily available, affordable, and are friendly with patients.[39]

Culture plays a strong role in parenting in Obubra, Cross River State, presenting both positive and negative attributes. One of the strongest positive attributes is the availability of female family members as social and information support for mothers who just gave birth. However, this same group have a strong influence on whether or not a mother attends antenatal clinic, gives birth in a health facility, practices exclusive breastfeeding and timely health seeking behaviour as well as harmful cultural practices such as corporal punishment and female genital mutilation. Using appropriate behavioural change theories, evidence can be provided to these support systems to aid mothers in the practice of positive parenting.

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ORIGINAL RESEARCH

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Awareness of Biomedical Waste Management among Health Care Personnel in Bareilly International University, Bareilly, India

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ABSTRACT

INTRODUCTION: Biomedical Waste is defined as any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or in research activities pertaining thereto or in the production or testing of biological products. Healthcare workers are one of the main contributors to the healthcare waste management process.

AIM: The study aimed to assess the level of awareness and attitude regarding biomedical waste management policy and practices among health care workers at Bareilly International University, Bareilly, India

MATERIALS AND METHOD: A cross-sectional study was conducted using a questionnaire with closed-ended questions which was distributed to 150 medical, 154 dental and 100 Class IV employees at Bareilly International University, India. The responses in the questionnaire were used to assess their knowledge of biomedical waste disposal. The responses were evaluated, and each participant's percentage of correct and incorrect responses for each question was calculated.

RESULTS: The results indicated that all healthcare professionals had a low degree of knowledge and awareness regarding the risks associated with biomedical waste formation, legal requirements, and management. Only 11 (7.14%) dental interns had excellent knowledge about biomedical waste generation and legislation while 5 (3.33%) medical interns had extremely poor knowledge about it. Only 4 (4%) Class IV employees had an excellent awareness of biomedical waste management practices. Only 34 (22.08%) dental interns had an excellent level of knowledge of needle-stick injuries among health care personnel.

CONCLUSION: It was concluded that health care professionals have a low degree of knowledge and awareness regarding the risks of biomedical waste generation, laws, and management at Bareilly International University, India hence there is a requirement for regular monitoring and training at all levels of healthcare.

KEYWORDS: Biomedical Waste Management, Hazards, Hospitals, Interns, Questionnaire

INTRODUCTION

There have been significant changes in the healthcare system over the years, but it is ironic that healthcare environments that restore and retain health care also threaten the safety of patients. One of the biggest threats comes from improper waste management which poses a huge risk to public health, the safety of patients and professionals and environmental degradation.

Biomedical Waste is defined as any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or in research activities pertaining thereto or in the production or testing of biological products.[1]

Hospitals produce biomedical waste in both solid and liquid forms. Any blood or body fluid-contaminated waste may be referred to as infectious waste. India is reported to produce 0.33 million tonnes of hospital waste per year.[2]

A particular rule is followed for the handling, segregation, transport and disposal of biomedical waste. The Medical Waste Management Regulations were issued by the Government of India in 1998 and came into effect in January 2003. These rules apply to all those who generate, collect, receive, store, transport, treat, dispose or handle biomedical waste in any form. The law provides for the scheduling of biological waste treatment facilities, such as autoclaves, microwave systems, and incinerators, for the treatment of waste or for assuring the necessary treatment of waste at any other waste treatment facility. Even after the law's implementation, practice in Indian hospitals has not yet reached the intended standard, despite its statutory provision for biomedical waste management.[1]

Lack of proper waste management, inadequate awareness of biomedical waste's health risks, inadequate financial and human resources and poor waste management are the most serious problems associated with healthcare waste.[3]

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Healthcare workers are one of the main contributors to the healthcare waste management process. Although their efforts may seem to be small, their every step builds a base of sound morals and rationale that is necessary for the success of the whole community, Hence awareness is important to prevent themselves as well as the patients from its hazards.[4]

Therefore, the present study was conducted to assess the level of awareness and attitude among health care workers at Bareilly International University, Bareilly, India.

MATERIALS AND METHOD

A descriptive cross-sectional study was conducted on medical and dental interns and Class IV employees of Bareilly International University, India.

The sample size of the study was determined conveniently. A self-reported questionnaire was distributed among 150 medical, 154 dental, and 100 Class IV employees who were present on the day. The questionnaire was adapted using pre-validated and pre-tested questionnaires from earlier studies.[5] Ethical approval for this cross-sectional closed-ended questionnaire study was obtained from the Institutional Ethical Committee, Institute of Dental Sciences, Bareilly.

There were four main categories of questions in the study. This questionnaire consisted of 37 questions which were designed to acquire information about knowledge of biomedical waste generation and waste management practices. The questions were divided into four categories:

1. Biomedical waste generation, health hazards and legislation
2. Biomedical Waste management practices
3. Attitude assessment
4. Needle-stick injuries.

The participants' confidentiality was maintained. The participants were asked to select the best response to each topic. Each question's percentage of correct and incorrect responses from each participant was calculated. All the results were entered into spread excel sheet and analyzed. Results were expressed as percentages and numbers. Based on the responses obtained in the above 4 categories of questions, results were graded into three groups- excellent, good to average and poor.

RESULTS

A total number of 404 respondents participated in the observation. The study population's mean age was 28.5 years. Among them females (83.5%) outnumbered males.

Level of knowledge of biomedical waste generation, hazards and legislation among health care personnel.

Table 1 summarizes the level of knowledge about biomedical waste generation and legislation. It was surprising that only 11 (7.14%) dental interns exhibited excellent knowledge about the generation and legislation of biomedical waste while 5 (3.33%) medical interns had very poor knowledge about it.

	LEVEL OF KNOWLEDGE					
Health care personnel	POOR		GOOD		EXCELENT	
	No	%	No	%	No	%
Medical	5	3.33%	139	92.67%	6	4.00%
Dental	39	25.32%	104	67.53%	11	7.14%
Class IV employees	11	11.00%	87	87.00%	2	2.00%

Table 1. Level of knowledge of biomedical waste generation, hazards and legislation among health care personnel.

Level of awareness of biomedical waste management practices.

Table 2 summarizes awareness about waste management practices, it was found that only 4 (4%) Class IV employees demonstrated excellent knowledge about biomedical waste management practices.

Attitude/behaviour assessment towards biomedical waste.

Table 3 summarizes attitudes towards biomedical waste among all the participants only 30 (20%) medical interns had poor attitudes towards biomedical waste management.

The majority of the study participants (90%) agreed

LEVEL OF AWARENESS						
Health care personnel	POOR		GOOD		EXCELENT	
	No	%	No	%	No	%
Medical	46	30.67%	83	55.33%	21	14.0%
Dental	97	62.99 %	41	26.62 %	16	10.39 %
Class IV employees	24	24.00 %	72	72.00 %	4	4%

Table 2. Level of awareness of biomedical waste management practices.

with the fact that waste management requires teamwork and no single team member can be held responsible.

ATTITUDE/BEHAVIOUR ASSESSMENT TOWARDS BIOMEDICAL WASTE						
Health care personnel	POOR		GOOD		EXCELENT	
	No	%	No	%	No	%
Medical	30	20.00%	81	54.00%	39	26.00%
Dental	30	19.48%	93	60.39%	31	20.13%
Class IV employees	2	2.00%	82	68.00%	16	16%

Table 3. Attitude/behaviour assessment towards biomedical waste.

Level of knowledge of needle-stick injuries among health care personnel.

Table 4 summarizes the knowledge of needle-stick injuries. The results found that only 34 (22.08%) dental interns demonstrated excellent knowledge of needle-stick injuries among all health care personnel.

LEVEL OF KNOWLEDGE OF NEEDLE-STICK INJURIES						
Health care personnel	POOR		GOOD		EXCELENT	
	No	%	No	%	No	%
Medical	33	22.00%	89	59.33%	28	18.67%
Dental	46	29.87%	74	48.05%	34	22.08%
Class IV employees	39	39.00%	55	55.00%	6	6.00%

Table 4. Level of knowledge of needle-stick injuries among health care personnel.

DISCUSSION

The study sought to evaluate knowledge, attitude and practice toward biomedical waste management among the medical and dental interns and Class IV employees of Bareilly International University, India.

Results of the study found that Class IV employees, medical interns, and dental interns had low levels of knowledge and awareness of the risks associated with the development of biomedical waste, as well as the related laws and management practices. Even the level of understanding and awareness of needle-stick injuries was inadequate.

The study's results are in accordance with prior studies. The majority of respondents to a study of 64 dentists who taught in government institutions in New Delhi, India, reported that they were unaware of the proper guidelines for managing clinical waste.[6]

In a study of hospital medical staff in Agra, similar results were found,[7] which demonstrated a lack of knowledge and awareness regarding biological waste legislation, and more recently in a research conducted in an Amritsar dental hospital/clinic.[8] One-third of the workers at a tertiary level hospital in Visakhapatnam did not know where the hospital's waste was ultimately handled and disposed of, the similar issue may even exist at more specialized medical facilities.[9] According to the others, the waste was collected in bags and dumped inside the hospital's grounds before being collected by an unidentified private service. However, a study conducted in Mangalore city, India, to evaluate the management of dental biomedical waste and private dental practitioners' awareness of waste management policy revealed that many practitioners were aware of the legislation policy but had neglected to get in contact with and register their clinic with the certified waste management services of the city.[10]

Another study compared the knowledge, attitude and practices of biomedical waste among health care personnel and found that doctors, nurses, and laboratory technicians had higher knowledge than the cleaning (sanitary) employees.[11] In contrast, another study found that many dentists had appropriate knowledge about biomedical waste management but they lacked proper attitude and practices to deal with the problem.[12]

In the present study, only 7.14 % of dental interns had excellent knowledge which was lower than the results of a study conducted by Sharma et al. where 30% had excellent knowledge.[5]

Thus, It can be determined that introducing laws alone is insufficient to ensure the appropriate disposal of biomedical waste. The general public must be aware of these rules, and that appropriate enforcement procedures and policies are developed.
When possible, proper precautions should be taken to reduce hazardous waste, or steps should be taken to guarantee that all collected waste is disposed of by environmental legislation.[13]

In hospitals, primary care clinics, and at key locations (such as next to trash bins), information about the risks associated with biomedical waste can be displayed on posters with instructions on waste segregation. All sorts of healthcare workers should have access to compiled data on various disposal methods and modern technology. Staff habits and public perception are two typical barriers that ought to be addressed. It is advised to improve localised control and make improvements to the organization's general infrastructure. The recommendations are also focused on creating strategic alliances between the various government and institution departments. An important challenge to be overcome is the need to transition from the idea of "waste management" to one of sustainable resource use, including techniques for waste minimization at source and recycling.[14] Therefore, it is strongly advised that waste management programmes be included in academic curricula for all healthcare professionals as well as in continuing dental education. The present study was conducted on a small group of subjects and in just one medical university. Therefore, it is recommended that similar studies should be performed on a larger sample size.

CONCLUSION

From the current study, it can be inferred that health care professionals have a low degree of knowledge and awareness regarding the risks of biomedical waste generation, laws, and management at Bareilly International University, India. A subsequent assessment of the literature suggests that this is a prevalent problem in many other healthcare facilities in India and other countries. Waste must be segregated and disposed of safely to protect both the environment and human health and this can be achieved by regular monitoring and training at all levels.

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