Print ISSN 2207-7715
Online ISSN 2207-7723

UNESCO Chair in Bioethics (Haifa)

United Nations Educational, Scientific and Cultural Organization

Global Bioethics Enquiry

The Scholarly Publication of the UNESCO Chair in Bioethics

Volume 6, Issue 1
APRIL 2018

The scholarly publication of the UNESCO chair of Bioethics

GLOBAL BIOETHICS ENQUIRY

United Nations
Educational, Scientific and
Cultural Organization

UNESCO Chair
in Bioethics
(Haifa)

Editorial Board

TABLE OF CONTENTS

List of Reviewers

Prof. Dr. Russell D'Souza
Prof. Dr. Mary Mathew
Prof. Dr. E. Mohandas
Prof. Dr. Derek D'Souza
Prof. Dr. Princy Palatty
Prof. Dr. Smita Deshpande
Prof. Dr. Barna Ganguly
Prof. Dr. Avinash De Sousa
Prof. Dr. Eleanor Flynn
Prof. Dr. Mini Jacob

Editorial

Ethical, Social and Legal Consequences of Genomic Medicine and Personalized Psychiatry

Russell D'Souza[1], Avinash De Sousa[2]

[1]Director of Education, Head and Chair Asia Pacific Division, UNESCO Chair in Bioethics, Melbourne, Australia.
[2]Research Associate, Department of Psychiatry, Lokmanya Tilak Municipal Medical College, Mumbai.
Corresponding Author: Russell D'Souza
Email – russell.f.dsouza@gmail.com

Genomics has contributed greatly to our understanding of the molecular basis of disease and, to a lesser but growing extent, to the development of effective interventions. Clinicians and society at large, however, are concerned about the effect genetic knowledge will have on the well-being of individual persons and groups. Much effort is being devoted to trying to anticipate, understand, and address the ethical, legal, social, and political implications of genetics and genomics [1].

Understanding the social effects of genomics requires an analysis of the ways in which genetic information and a genetic approach to disease affect people individually, within their families and communities, and in their social and working lives. Genomics presents challenges with respect to clinicians' ethical and professional responsibilities, including the appropriate use of genomic information in the health care setting [2].

Genes affect virtually all human characteristics and diseases. These influences can be ascertained in individual patients through a review of the family history, physical examination, and the use of medical diagnostics. Given the variety of these effects and the limits of knowledge, the term "genetic information" is used in various ways at different times. These various meanings may make sense in context, but confusion can occur requiring the speaker and listener are defining the term in the same way [3].

What people in general are worried about

The most commonly expressed fear is that genetic information will be used in ways that could harm people — for example, to deny them access to health insurance, employment, education, and even loans. Part of that concern is fueled by the growing recognition that health information is not entirely private, despite people's expectations and desires to the contrary. This debate is informed appropriately by the recognition that limiting access to the medical record to the patient and the treating clinician is neither possible nor desirable [4].

People tend to see genetic information as more definitive and predictive than other types of data, human characteristics are the product of complex interactions over time between genes — both a person's own and those of other organisms — and the environment. It is felt, that the way to allay people's fears about genetics is simply to give them a more realistic understanding of the informative power of these tools. An approach to addressing the social implications of genetics requires knowledge, of how genes are perceived and what is known about their function [5].

The issue with Discrimination

The question of whether genetic information should ever be used to affect one's access to health and other forms of insurance has been a dominant issue of public concern in the past decade. People cite fear of losing insurance as a major reason to avoid genetic testing.4 Others argue that discrimination by insurance companies is not a problem, often pointing out that few of these cases, which are difficult for employees to win, have been filed. Insurers assert that they do not perform tests to obtain genetic information but argue that they should be free to use such

information if it is available, citing the need to avoid "moral hazard" — the risk that people who know they will become ill or die soon will try to obtain insurance at regular rates [6].
The complexity of the issues surrounding discrimination can be illustrated more generally by examining a case involving Burlington Northern Santa Fe Railroad (BNSF). Allegedly relying on the advice of its company physician, who in turn had apparently relied on the representations of a diagnostic company, BNSF began obtaining blood for DNA testing from employees who were seeking disability compensation because of carpal tunnel syndrome that occurred on the job. The employees were reportedly not told the purpose of the tests, which was to detect a mutation associated with hereditary neuropathy with liability to pressure palsies. The company's motive for pursuing testing was never made clear, but it seems reasonable to suspect that BNSF would have tried to deny disability benefits to any employee who had such a mutation, arguing that the mutation, and not the job, caused the carpal tunnel syndrome, the company settled claims brought by its employees for an undisclosed amount of money [7].
The first step in developing an appropriate response is to determine how the use of genetic information fits within the broader framework of antidiscrimination laws, which were passed to create a certain kind of society, one in which people must be included regardless of race, sex, or disability, even at some cost to employers.

The Challenge of Genomic Medicine with respect to the Physician – Patient Relationship
Consider the case of a man who died of colon cancer in the 1960s. When the same disease developed in his daughter approximately 25 years later, she obtained her father's pathology slides, discovered that he had had diffuse adenomatous polyposis coli, and sued the estate of her father's surgeon, alleging that the physician should have warned her about her 50 percent risk of having the disorder. An intermediate appellate court in New Jersey ruled that the physician had a duty to warn the daughter directly (she would have been a child at the time of her father's death), perhaps even over her father's objections.
This is only one court's view in one case, but given how much attention it received, it is important to ask whether this was a good result. Two central tenets of Western medicine are that physicians should focus on the interests of their patients and that they should protect the confidentiality of their patients' medical information. Yet the tools of genomic medicine often reveal information about health risks faced not only by patients but also by their relatives. What should clinicians do? It seems clear that they should tell their patients about the risks faced by family members. The harder questions are whether physicians are ethically permitted to contact the relatives themselves, in contravention of traditional patient-centered norms, and whether they should be legally required to do so [8].
This issue must be viewed in the light of the fact that the duty to protect confidentiality is not absolute. Physicians are required to report numerous infectious diseases,23 and they have been held liable for failing to warn people whom their patients have specifically threatened with violence. The question then becomes more complex: are genetic risks sufficiently similar to these existing exceptions to the requirement of confidentiality that they warrant an exception as well? Over the years, numerous prominent advisory bodies have said no, opining that physicians should be permitted to breach confidentiality to warn third parties of genetic risks only as a last resort to avert serious harm [9].

Genomic Medicine and Public Health
Complex questions arise when the government requires testing and interventions. State-mandated screening of newborns for metabolic and genetic disorders. Governments undertake many activities to promote health — universal screening of newborns for phenylketonuria, for example, is generally considered a resounding success — but it is worth asking in each case whether there is sufficient justification to pursue mandatory as opposed to voluntary action or to place such activities in the public rather than the private sector. Requiring public health agencies to assume such responsibilities has advantages, such as more transparent accountability to the public and greater uniformity in access and results. Relying on public health entities in matters that directly affect the health of individual persons, however, entails certain risks as well.

Physicians and patients count on receiving accurate and informative results regardless of whether a private or a public entity is doing the testing [10].

A public health analysis of genomics, of course, involves more than state-run testing. The broadest question is whether the public's health is improved by the knowledge derived. A major determinant is access to testing and to the medical interventions that may be warranted as a result. In our current multiplayer system of health care, people will have widely differing levels of access to these forms of technology. One cannot assume that everyone will reap the benefits of this knowledge [11].

From a public health perspective, it might do to go one step further and ask whether people will use the test results to alter their behavior in ways that improve health. Some people whom testing identifies as predisposed to cancer subsequently decline to undergo surveillance or other interventions for psychological reasons or because of other demands on their time. Some preventive or therapeutic measures are more likely to be pursued than others; most people find it difficult to take medications for a lifetime or to maintain major lifestyle changes, no matter how important such approaches are for their health [12].

Public health agencies exist not only to identify barriers to health but also to improve health and health care. Efforts to determine when genetic tests are reliable enough for routine clinical use are quintessential public health activities. The development of strategies to educate health care providers and patients about genomic medicine, and to decrease obstacles to health-promoting behavior also falls comfortably within this [13].

Personalized Psychiatry

Personalized medicine in psychiatry, eg. in the form of tailored antidepressant or antipsychotic treatment, has already made important progress, notably in terms of adjusted therapeutic doses, and predictable drug responses or drug-induced side effects. Although promising, these opportunities also give rise to numerous scientific, ethical, legal, and social challenges. An adequate assessment of personalized medicine in psychiatry must within all these perspectives be based both on analyses of the science behind pharmacogenomics research to get a realistic view of what can be achieved, and on analyses of the relevant sociopolitical structures surrounding this research [14].

The ethical considerations that have been considered in terms of adequacy, cost, and therapeutic equity raise no objections to the development of personalized medicine per se in this domain. Rather, they point to the necessity of developing a social infrastructure with adequate guidelines to ensure the responsible implementation of these promising new techniques [15].

Conclusions

This brief discussion illustrates public expectations and fears about the effect of genomics, challenges to the goals of antidiscrimination laws and to the nature of the physician–patient relationship, the contrasting perspectives, legal rules that apply to personal medical care, public health and personalized medicine. Acknowledgment and examination of these complex issues are critical for identifying the appropriate ethical principles that should be applied and for creating the necessary legislative and regulatory responses.

REFERENCES

1. The Health Privacy Project. The state of health privacy: an uneven terrain (a comprehensive survey of state health privacy statutes). (Accessed July 15, 2003, at http://www.georgetown.edu/research/ihcrp/privacy/statereport.pdf.)
2. Gostin LO. National health information privacy: regulations under the Health Insurance Portability and Accountability Act. JAMA 2001;285:3015-21.
3. Lapham EV, Kozma C, Weiss JO. Genetic discrimination: perspectives of consumers. Science 1996;274:621-4.
4. Hall MA, Rich SS. Patients' fear of genetic discrimination by health insurers: the impact of legal protections. Genet Med 2000;2:214-21.

5. Pokorski RJ. Insurance underwriting in the genetic era. Am J Hum Genet 1997;60:205-16.
6. Calvo C, Johnson A, eds. Genetics policy report: insurance issues. Washington, D.C.: National Conference of State Legislatures, September 2001.
7. Genetic information and health insurance: enacted legislation as of April 29, 2002. (http://www.nhgri.nih.gov/Policy_and_public_affairs/Legislation/insure.htm.).
8. Hall WD, Morley KI, Lucke JC. The prediction of disease risk in genomic medicine: Scientific prospects and implications for public policy and ethics. EMBO Reports 2004;5(1S):S22-6.
9. McGuire AL, Burke W. An unwelcome side effect of direct-to-consumer personal genome testing: raiding the medical commons. JAMA 2008;300(22):2669-71.
10. Bayer R, Galea S. Public health in the precision-medicine era. New Eng J Med 2015;373(6):499-501.
11. Collins FS. Medical and societal consequences of the human genome project. New Eng J Med 1999;341(1):28-37.
12. Séguin B, Hardy BJ, Singer PA, Daar AS. Genomics, public health and developing countries: the case of the Mexican National Institute of Genomic Medicine (INMEGEN). Nat Rev Genet 2008;9(S1):S5-10.
13. Goldenberg AJ, Sharp RR. The ethical hazards and programmatic challenges of genomic newborn screening. JAMA 2012;307(5):461-2.
14. Gurwitz D, Weizman A. Personalized psychiatry: a realistic goal. Pharmacogenomics 2004;5(2):213-7.
15. Möller HJ, Rujescu D. Pharmacogenetics–genomics and personalized psychiatry. Eur Psychiatry 2010;25(5):291-3.

****

Acknowledgements–Nil
Source of Funding – Nil
Conflict of Interest – Nil

Review Paper

Ethical Issues in Mandatory Vaccination

Manmeet Kaur Gill[1], Sahiba Kukreja[2], Rahul Mannan[3], Anureet Gill[4], AP Singh[5]

[1]Associate Professor, Department of Microbiology, Sri Guru Ram Institute of Medical Sciences and Research, Sri Amritsar.
[2]Professor & Head, Department of Biochemistry, Sri Guru Ram Institute of Medical Sciences and Research, Sri Amritsar.
[3]Professor, Department of Pathology, Sri Guru Ram Institute of Medical Sciences and Re-search, Sri Amritsar.
[4]Undergraduate BDS 3rd year student, Sri Guru Ram Institute of Dental Sciences and Research, Sri Amritsar.
[5]Professor, Department of Anaesthesia, Sri Guru Ram Institute of Medical Sciences and Re-search, Sri Amritsar.
Corresponding Author : Manmeet Kaur Gill
E-mail: drmanmeetgill@gmail.com

ABSTRACT

Vaccination carries significant health benefits and is a widely accepted intervention for public health care. Compulsory vaccination was first introduced in Europe and United States of America for smallpox and mandatory vaccination is still in practice in few counties across the globe. Although vaccine mandates are an important tool for achieving high vaccination coverage but enforcement of such mandates by governments often precipitates debates on ethical issues. There are people who believe that authorities emphasize more on the benefits of vaccination and trivializes the adverse effects. They do not accept existing medical or safety evidences. On the other hand, some communities disagree because they have their religious or philosophical beliefs which do not support vaccination. They think these regulations infringe upon an individual's autonomy. There is an inextricable link between public health care and human rights which cannot be ignored. This paper aims to identify various ethical issues concerning mandatory vaccination.

Key words: ethical issues, immunization, vaccine mandates.

Vaccination is a proven and widely accepted intervention for public health care. It has an important role in curtailing the morbidity and mortality due to diseases which are preventable [1,2]. Since the advent of vaccines, wide use of immunization has significantly reduced the incidence of serious infections like polio, measles and lead to complete eradication of smallpox, worldwide. Vaccination, not only provide immunity to the person immunized but also protect the community. If majority of the population (90%) is vaccinated against a disease, it will protect even those who are not vaccinated (eg. newborns). This is called as "Herd Immunity". There are 26 diseases for which vaccines are available and many more for which vaccines are in developmental phase, "pipeline vaccines" [3]. Immunization schedule varies from country to country but most of the countries include diphtheria, pertussis, tetanus, poliomyelitis, tuberculosis, measles and Hepatitis B in their schedule.

A brief history of vaccination

History of vaccination dates back to ancient times when primal attempts were made to prevent disease in humans. There are evidences that indicates that for Smallpox which was prevalent in all

regions of the world, inoculations were practiced in China, India and Turkey around 1000 AD [4-8]. This was called as Variolation, a method first used to immunize an individual against smallpox (Variola) with material taken from a patient or a recently variolated individual in the hope that a mild, but protective infection would result. Small pox vaccine was discovered much later in 1798 by Edward Jenner. He observed that a person inoculated with cow pox virus would develop a mild cow pox infection but was protected against smallpox infection. Soon after he published his work, smallpox vaccination spread to many parts of the world [9-10].

Indian scenario

Smallpox vaccine arrived in India in 1802 but acceptance by general public was low due to certain beliefs and misconceptions. Variolation continued despite ban [11]. In 1880, The Compulsory Vaccination Act was passed to prohibit inoculation and to make the vaccination of children compulsory in certain states but ironically it largely remained confined to papers only.

Other important events during this period were Cholera vaccine trial in 1893 and development of plague vaccine in 1897 by Dr Haffkine, in India. The lab where he developed the plague vaccine was named after him 'Haffkine Institute' in 1925 [12].

At the time of independence although vaccines for four diseases viz smallpox, cholera, plague and typhoid, were available in the country, still India accounted for maximum number of smallpox cases in the world, cholera and plague epidemics were occurring and tuberculosis was gaining an epidemic proportion. However in 1948, first BCG vaccination programme was conducted and also a BCG vaccine laboratory was set up in Guindy same year [13-14]. In 1962 National Tuberculosis Control Programme (NTCP) came into being focusing on early diagnosis and treatment of the disease and BCG vaccination was part of this programme [15].

In 1967-68, smallpox eradication policy was reformulated with more focus on surveillance and containment of the outbreaks. Vaccination technique (1969) and vaccine (1971) were improved. All these intensified efforts by the government paid off and India was declared smallpox free in 1977 and world in 1980. In 1988 a resolution for polio eradication by 2000, was passed by World Health Assembly and Government of India also joined this programme. Beginning with Tamil Nadu, state wise polio vaccination campaign 'Pulse Polio', was established by the government of India to eliminate poliomyelitis by vaccinating all children under the age of five years against the polio virus. In 1997 an organized surveillance was established as National Polio Surveillance Project (NPSP). The last case of wild polio virus (type1) was reported on January 13, 2011 in West Bengal and on 25th February, 2012, WHO removed India from list of polio endemic countries. The South-East Asia Regional Certification Commission for Polio Eradication declared the South-East Asia Region of the WHO, polio-free on 27th March 2014 [16-19].

National Immunization Schedule (NIS) in India

National immunization Programme was introduced in 1978 as Expanded Programme of Immunization (EPI) and in 1985 and it was expanded as Universal Immunization Programme (UIP) to be implemented in phased manner to cover all districts in the country by 1989-90. In 1992, UIP become a part of Child Survival and Safe Motherhood Programme. Since 2005, immunization activities have been an important component of National Reproductive and Child Health Programme and are currently one of the key areas under National Rural Health Mission (NRHM). The UIP in India is one of the largest in the world, targeting 27 million infants and 30 million pregnant women every year. Under this programme, Government of India is currently providing free vaccines, against eleven life threatening diseases ie. Tuberculosis, Diphtheria, Pertussis, Tetanus, Polio, Hepatitis B, Rubella, Meningitis and pneumonia due to Haemophilus influenzae type b (Hib), Measles, Japanese Encephalitis (JE) and Rotavirus diarrhoea [1]. However, the average coverage of the UIP vaccines at the national level is below 50% [20].

On 25th December 2014 Mission Indradhanush was launched under National Health Mission. It aims to immunize all children under 2 years of age, as well as all pregnant women, against seven vaccine preventable diseases i.e. Diphtheria, Pertussis, Tetanus, Poliomyelitis, Tuberculosis, Measles and Hepatitis B (Table 1). In 2016, four new vaccines were added namely Rubella, Rotavirus, Injectable Polio Vaccine Bivalent and Japanese Encephalitis [20].

Table 1: National Immunization Schedule (NIS) for Infants, Children and Pregnant Women

National Immunization Schedule				
Vaccine	**When to give**	**Dose**	**Route**	**Site**
For Infants				
BCG	At birth or as early as possible till one year of age	0.1ml (0.05ml until 1 month of age)	Intra -dermal	Left Upper Arm
Hepatitis B Birth dose	At birth or as early as possible within 24 hours	0.5 ml	Intramuscular	Antero-lateral side of mid-thigh LEFT
OPV Birth dose	At birth or as early as possible within the first 15 days	2 drops	Oral	-
OPV 1,2 & 3	At 6 weeks, 10 weeks & 14 weeks	2 drops	Oral	-
IPV (inactivated Polio Vaccine)	14 weeks	0.5 ml	Intramuscular	Anterolateral side of mid-thigh-RIGHT
Pentavelant 1, 2 & 3	At 6 weeks, 10 weeks & 14 weeks	0.5 ml	Intramuscular	Anterolateral side of mid-thigh-LEFT
Rota Virus Vaccine	At 6 weeks, 10 weeks & 14 weeks	5 drops	Oral	-
Measles 1st Dose	9 completed months-12 months. (give up to 5 years if not received at 9-12 months age)	0.5 ml	Subcutaneous	Right Upper Arm
Vitamin A, 1st Dose	At 9 months with measles	1 ml (1 lakh IU)	Oral	-
For children				
DPT 1st booster	16-24 months	0.5 ml	Intramuscular	Anterolateral side of mid-thigh-LEFT
OPV Booster	16-24 months	2 drops	Oral	
Measles 2nd dose	16-24 Months	0.5 ml	Subcutaneous	Right Upper Arm
Vitamin A (2nd to 9th dose)	16 months with DPT/OPV booster, then, one dose every 6 month up to the age of 5 years)	2 ml (2 lakh IU)	Oral	-

DPT 2nd Booster	5-6 years	0.5 ml.	Intramuscular	Left Upper Arm
TT	10 years & 16 years	0.5 ml	Intramuscular	Upper Arm

Risks and benefits of vaccination

There are always some risks associated with immunization programmes and there has always been an anti-vaccination lobby, vociferous in its objections against mandatory vaccinations. Vaccine side effects may range from mild to sometimes life-threatening conditions. In 1948, in Kyoto, Japan, 68 of 606 children died after diphtheria immunization as a result of improper manufacture of toxoids which reverted to toxin, with disastrous effects [21]. In 1976, in the USA, the vaccination programme against swine flu was stopped because it was thought to be associated with a concomitant increase in Guillain-Barré syndrome [22]. In 1976, in Britain, "National Childhood Encephalopathy Study" (NCES), first largest prospective case-control study of vaccine-induced encephalopathy, thought to be related to whole cell pertussis vaccine and caused a serious public alarm, was conducted [23]. Bacille Calmette-Gue □ rin (BCG) is a widely used and a safe relatively vaccine, even though its efficacy ranges from zero to 80%. But it can cause disseminated infection, especially in immunocompromised hosts [24].

Measles-Mumps-Mubella (MMR) vaccine was believed to be associated with autism. The adverse effects are attributed to a compound thimerosol, in the vaccines. Although there are no data to support any association between MMR vaccine and autism but bad publicity resultant in decrease in MMR vaccination, and consequently resulted in increased measles incidence in certain communities [25]. The list is endless and beyond the scope of this article.

Ethical issues related to vaccination

Although vaccines are responsible for accomplishments of many global public health aims, such as the eradication of smallpox and significant reductions in other serious infections, still vaccinations have been the subject of various ethical controversies. The key ethical issues related to vaccine regulation, development, and use usually involve (1) vaccine mandates (2) research and testing (3) informed consent (4) access disparities.

Vaccine mandates

Enforcing mandatory vaccinations is one of the strategies that some countries adopted for high vaccination coverage among children. Compulsory vaccination was first introduced in Europe and United States of America (USA) for smallpox, around 1850. Indian Government passed the compulsory vaccination act in 1892 to prohibit inoculation and to make the vaccination of children compulsory, against smallpox [4].

Mandatory vaccination is still in practice in few counties across the globe. In USA, all 50 states mandate certain immunization before school entry. However certain exemptions are permitted on medical grounds in all the states, 48 states allow religious exemptions and 20 states allow exemptions for philosophical reasons [26]. In Australia childhood vaccination, before school entry, was legislated in 1999 [27]. In 2010, a survey on mandatory vaccination in Europe was conducted and information was collected from all 27 EU Member States, Iceland and Norway. Out of total, 15 countries did not have any mandatory vaccinations; the remaining 14 had at least one mandatory vaccination included in their programme [28]. But there are counties like Italy, who have moved from compulsory to voluntary immunisation programme in certain regions that have reached the herd immunity, while providing effective monitoring of the incidence of communicable disease [29].

Ethical issues with vaccine mandates

Although mandatory vaccination is an important tool in improving compliance to vaccination programmes; but enforcement of such mandates by governments often precipitates debates on ethical issues. Two such major issues are –

Risks of vaccination

There are people who believe that authorities emphasize more on the benefits of vaccination and trivialize the adverse effects. They do not accept existing medical or safety evidences. Similar views were highlighted in a paper by Angus Dawson in which he critically reviewed the common objections to the preventive medicine, referred as "prevention problem". He argues that the successes of immunization programmes generally lie in their ability to create herd immunity. The key elements of the problems with these programs are "a) preventive public health measures are performed on asymptomatic individuals; (b) every such public health intervention will carry a risk of harm; (c) the benefits of such interventions lie at the level of populations, whilst the risks of harm are borne by the individual participants in the programme. Conclusion: such preventive programmes are unethical (given distribution of risks and benefits." [30].

Religious or philosophical beliefs

Some communities disagree because they have their religious or philosophical beliefs which do not support vaccination. They think these regulations infringe upon an individual's autonomy and beliefs [31]. One such example is the issues related to Human papilloma virus (HPV) vaccine, which was approved by FDA in 2006 to be used for immunization of girls aged 11-12 years. When various state legislations in USA attempted to mandate the vaccination, ethical objections, which arose against the mandate, ranged from religious concerns that a vaccine to protect against an STD contradicts abstinence-based messages; and human rights questions about the fairness of providing a vaccine to one sex only [32,33].

Basically, any kind of mandatory testing, treatment or isolation is violation of rights of people. In public health practice. Out of four principles of Bioethics, principal of beneficence often carry more weightage than the principle of autonomy and that is why most of the vaccination programmes have coercive and paternalistic approach.

John Stuart Mill stated that "power can be rightfully exercised against somebody against her/his will if it is done to prevent harm to others" [34]. In the context to immunization, such coercion is often justified on the grounds of eradicating a life-threatening disease [35].

Informed consent

Informed consent is a process for getting permission before conducting a healthcare intervention on a person, or for disclosing personal information. It not only helps to develop trust and confidence in the patient, for the doctor but also helps the doctor to carry out the planned medical intervention in a more composed manner, being confident in the protection of this doctrine if anything untoward occurs [36]. However, even though serious life-threatening complications due to vaccinations have been reported, but informed consent for vaccination not much in practice. Also, informed consent in relation to immunizations has a limited direct application in pediatrics as here generally the parents provide the consent.

Global scenario

In USA, there is no Federal law which makes informed consent mandatory before vaccination but the National Childhood Vaccine Injury Act of 1986 requires that doctors should give vaccine recipients, or their parents, a Vaccine Information Statement (VIS). It provides the basic information about the risks and the benefits of the vaccine and thus provides the information, a patient or parent needs to make an informed decision [37].

Indian scenario

In India, valid consent has been taken for vaccine trials; but whether they were informed or not is still a question. In 2009, the Ministry of Health and Family Welfare (MOHFW), Indian Council of Medical Research (ICMR), PATH and the state governments of Andhra Pradesh and Gujarat conducted a 'démonstration project' to determine the feasibility of the introduction of the vaccine, against, Human Papillomavirus (HPV) in India. In these trials, three doses of the HPV vaccine were administered to 16,000 girls, in the age group of 10-14 years, without monitoring the adverse reactions, which lead to the death of four girls in Andhra Pradesh and two girls in Gujarat. On the

top of it, the vaccine was administered in camps organized in school campuses and wardens of the schools were allowed to provide consent for hundreds of children, without consulting their parents. This project was widely criticized for violating all scientific and ethical norms [38-39].

What is need for informed consent

In USA in 1983, children were required to have 10 total injections of the polio, MMR, and DTP vaccines prior to entering the public schools. The policy created debilitating injury in some of the children and parents of these children sued the pharmaceutical companies and got huge claims. Vaccine manufacturers companies then approached U.S government and threatened to stop production of vaccines in light of the settlements. This gave way to the legislation of 1986, The National Childhood Vaccine Injury Act. Under this Act, the pharmaceutical companies gained their freedom from liability if their product causes harm; because U.S government outlined vaccines as "unavoidably unsafe" [40]. After this, began the tax collection from the sale of every vaccine to be placed in a compensation fund for the injured, thereby the product consumers are now liable for product failures.

Equity in distribution of vaccines

Health disparities exist both on a global level and within our nation's health care system, where we see persistent racial, ethnic and socioeconomic disparities in medical care and overall health. In India, Equity in health care, have always been a guiding principle with a commitment to serve the poor and underprivileged, in formulating a health policy document. First official National Health Policy was put forward in 1983, reprise the need for universal comprehensive care [41]. However, the utilization of preventive health services like immunizations remains suboptimal. The UIP in India is one of the largest in the world, but the average coverage of the UIP vaccines at the national level is below 50%. In a survey (2011), it was found that nearly 22.4 million children globally, were partially vaccinated till the age of 12 and remained at risk for vaccine-preventable communicable diseases. More than half of these partially vaccinated children were reported to be residing in India (32%), Nigeria (14%) and Indonesia (7%). There are disparities in the utilization of these services by gender, socioeconomic status, and geography. In 2005-2006, the national immunization coverage was 44% and major inequalities in immunization exist by socioeconomical status and education. Inequalities also exist by caste: in 2005-2006, immunization coverage among scheduled tribes and scheduled castes was 31.3% and 39.7% respectively, compared to 53.8% among other castes. Coverage remains higher in urban areas (58%) as compared to rural areas (39%). Gender gap has also increased with an absolute of 2.6% in 1993 and increasing to 3.8% in 2006. Realizing the roadblocks in immunisation programmes, the current government has launched Mission Indradhanush in December 2014 as a special drive to vaccinate all unvaccinated and partially vaccinated children by 2020 under the UIP [42].

Ethical considerations

These disparities in India and globally, signal the need for continued efforts by Public health and medical officials, to ensure equal opportunities for people to benefit from vaccination. In concordance with the forth principal of bioethics, distributive justice requires fair allocation of resources. Children should be guaranteed 'the right to basic health care services'. Realizing the gravity of the situation, the current Indian government has launched Mission 'Indradhanush' in December 2014 as a special drive to vaccinate all unvaccinated and partially vaccinated children by 2020 under the UIP.

Conclusions

In conclusion, mandatory vaccination may not lead to utopian state of 100 % vaccination uptake rather it is fraught with maladies and societal/religious backlash. Coercion and forced vaccination can lead to a state where babble of misinformation can lead to cacophony of chaotic thought processes and fractured ground realities. Instead integrating vaccination as a part of healthy positive vital life is the answer to the current pressing need of improved vaccine uptake. A healthy discussion on mandatory vaccination and its benefits on future generation can have a positive

momentum and can dampen the current environment of anti-vaccine narratives swirling around. Along with this, resource back up (such as adequacy of vaccine supply and vaccine related health services) and respecting the cultural diversity and specific community needs will lead to more and more vaccine acceptance redundant the ever-occurring debate and need of vaccine mandates.
Hence research findings, sharing experiences, availability of trained medical health with aforementioned repeating the local culture, sensitivity towards customs/beliefs/ societal norms and integrating the vaccine acceptability within the cultural and religious milieu of a specific population may be the answer in increasing the vaccine acceptability rates in the resource challenged third world countries of Asia and Africa such as ours. This in turn will lead to control of vaccine preventable diseases, leading to alleviating a significant population form morbidity and mortality associated with them in absence of such prophylactic measures. Vaccine mandate or policy of local targeted inclusivity- the jury is still out there.

REFERENCES

1. Arora S. National Immunization Schedule India: A Review. Res Rev J Immunol 2017;7(3):6–10.
2. Madhavi Y. Vaccine policy in India. PLoS Med 2005;2(5):e127.
3. World Health Organization. Global immunization data. May 16, 2018. Available from http://www.who.int/immunization/diseases/en/
4. Lahariya C. A brief history of vaccines & vaccination in India. Ind J Med Res 2014;139(4):491-511.
5. Fenner F, Henderson DA, Arita I, Jezek Z, Ladnyi ID. Smallpox vaccine and vaccination in the intensified smallpox eradication programme. Smallpox and its Eradication 1988:539-92.
6. Dowdle WR. The principles of disease elimination and eradication. Bulletin of the World Health Organization. 1998;76(Suppl 2):22.
7. Fitchett JR, Heymann DL. Smallpox vaccination and opposition by anti-vaccination societies in 19 th century Britain. Hist Med 1995;2:e17.
8. Riedel S. Edward Jenner and the history of smallpox and vaccination. Baylor University Medical Center Proceedings 2005;18(1):21-5.
9. Holwell JZ. An Account of the Manner of Inoculating for the Small Pox in the East Indies: With Some Observations on the Practice and Mode of Treating that Disease in Those Parts.... By JZ Holwell, FRS. London:: printed for T. Becket, and PA De Hondt; 1767.
10. Wujastyk D. A pious fraud: the Indian claims for pre-Jennerian smallpox vaccination. In Meulenbeld G, Wujastyk D. Studies on Indian Medical History. Delhi: Motilal Banarsidass Publishers; 2001;pp121–54.
11. Bhattacharya S, Jackson M. London: Wellcome Institute. Vaccination against smallpox in India. 2005.
12. Wikipedia Haffkine Institute. May 16, 2018. Available from: https://en.wikipedia.org/wiki/Haffkine_Institute.
13. Madras: Tamil Nadu State Archive, Health Department. 1950; 809.
14. Central TB Division. Tuberculosis Control India. Directorate General of Health Services. May 16,2018]. Available from: http://www.tbcindia.nic.in/history.html .
15. Khatri GR. National tuberculosis control programme. J Indian Med Assoc 1996;94:372– 84.
16. Lahariya C. Global eradication of polio: the case for" finishing the job". Bull WHO 2007;85:487-92.
17. New Delhi: MoHFW. Ministry of Health and Family Welfare. Polio eradication in India. 2021.
18. The National Polio Surveillance Project. A Government of India-WHO Colloboration. May 16, 2018. Available from: www.npspindia.org.
19. World Health Organization. India records one 55. year without polio cases. May 16, 2018. http://www.who.int/mediacentre/news/releases/2012/polio_20120113/en/index .html.
20. Universal Immunization Programme. May 16, 2018. Available from: https://mohfw.gov.in/sites/default/files/5628564789562315.pdf.
21. Stratton KR, Howe CJ, Johnston RB. Research strategies for assessing adverse events associated with vaccines: a workshop summary. National Academies; 1994.
22. Stowe J, Andrews N, Wise L, Miller E. Investigation of the temporal association of Guillain-Barre syndrome with influenza vaccine and influenza like illness using the United Kingdom General Practice Research Database. Am J Epidemiol 2008;169(3):382-8.

23. Shorvon S, Berg A. Pertussis vaccination and epilepsy—an erratic history, new research and the mismatch between science and social policy. Epilepsia 2008;49(2):219-25.
24. Snider Jr DE. Ethical issues in tuberculosis vaccine trials. Clin Infect Dis 2000;30(Suppl 3):S271-5.
25. Isaacs D, Kilham HA, Alexander S, Wood N, Buckmaster A, Royle J. Ethical issues in preventing mother-to-child transmission of hepatitis B by immunisation. Vaccine 2011;29(37):6159-62.
26. Malone KM, Hinman AR. Vaccination mandates: the public health imperative and individual rights. Law Pub Health Pract 2003;3:262-84..
27. Australian Department of Health and Ageing. The Seven Point Plan. May 18, 2018. Available from www.health.gov.au.
28. Giammanco GM, Bechini A, Urone N, Bonura F, Muli SL, De Grazia S, Bellini I, Tiscione E, Boccalini S, Nastasi A. Is Italian population protected from Poliovirus? Results of a seroprevalence survey in Florence, Italy. Hum Vacc Immunotherapeut 2018 May 10(just-accepted Epub ahead of print).
29. Moran NE, Gainotti S, Petrini C. From compulsory to voluntary immunisation: Italy's National Vaccination Plan (2005–7) and the ethical and organisational challenges facing public health policy-makers across Europe. J Med Ethics 2008;34(9):669-74.
30. Dawson A. Vaccination and the prevention problem. Bioethics 2004;18(6):515-30.
31. Salmon DA, Teret SP, MacIntyre CR, Salisbury D, Burgess MA, Halsey NA. Compulsory vaccination and conscientious or philosophical exemptions: past, present, and future. Lancet 2006;367(9508):436-42.
32. Javitt G, Berkowitz D, Gostin LO. Assessing mandatory HPV vaccination: who should call the shots?. J Law Med Ethics 2008;36(2):384-95.
33. Colgrove J. The ethics and politics of compulsory HPV vaccination. New Eng J Med 2006;355(23):2389-91.
34. Vermeersch E. Individual rights versus societal duties. Vaccine 1999;17:S14-7.
35. Johari V. Identifying ethical issues in the development of vaccines and in vaccination. Indian J Med Ethics 2017;2(2):88-93.
36. Rajput M, Sharma L. Informed consent in vaccination in India: medicolegal aspects. Human Vaccines 2011;7(7):723-7.
37. Centers for Disease Control and Prevention. Fact sheet for vaccine information statements. May 20, 2018. Available from http://www.cdc.gov/vaccines/hcp/vis/about/facts-vis.html
38. Sarojini NB, Srinivasan S, Madhavi Y, Srinivasan S, Shenoi A. The HPV vaccine: science, ethics and regulation. Econ Pol Wkly 2010;45(27):27-34.
39. Ramanathan M, Varghese J. The HPV vaccine demonstration projects: we should wait, watch and learn. Indian J Med Ethics 2010;7:43-5.
40. HRSA. Part 2 – National vaccine injury compensation program. 42 USC chapter 6a, public health service title 42 the public health service subchapter XIX vaccines. 1986. 42 U.S.C. 300aa-22(b)(1); 47.
41. Delhi N. Ministry of Health and Family Welfare, Government of India; 1987. Pharmacopoeial Standards for Ayurvedic Formulations, Central Council for Research for Ayurveda and Siddha, Revised Ed. 1983:1-20.
42. Balarajan Y, Selvaraj S, Subramanian SV. Health care and equity in India. Lancet 2011;377(9764):505-15.

****

Acknowledgements – Nil
Source of Funding – Nil
Conflict of Interest – Nil

Review Paper

Ethical Issues in The Treatment of Transsexual Patients

Pragya Lodha[1], Avinash De Sousa[2]

[1]Research Assistant and Clinical Psychologist, Desousa Foundation, Mumbai.
[2]Research Associate, Department of Psychiatry, Lokmanya Tilak Municipal Medical College, Mumbai.

Corresponding Author: Avinash De Sousa
E-mail: avinashdes888@gmail.com

ABSTRACT

The trans community, under the spectrum LGBTQ is one of the minorities that faces challenges on various psycho-social, economic and political fronts. One of the greatest challenges that these people face is not only being discriminated socially but also receiving discriminated treatments. One of the bigger challenges in the health domain is that of mental health. There is a lack of sensitivity, appropriate understanding and sufficient treatment modalities for treatment of trans community of patients. The present paper provides an overview of the various ethical issues encountered when treating transsexual patients in clinical practice.

Key words: transsexuals, treatment, mental health, ethics.

Transgender, transsexual, and gender non-conforming individuals are a part of cultures around the world. 'Trans' is an umbrella term used for persons whose gender identity does not conform to their biological sex [1-2]. A person's gender identity is their own sense of whether they are male or female, or neither. Some transgender people identify themselves with their changed gender: from male to female or female to male. However, others see themselves as members of a third sex. Officially now, the transgender is the third gender, in recognition and identity. Though difficult to quote an exact census number, globally, the population estimates to around 25 million and India has one of the largest population of trans people in the world, with an estimated population of 5 lakhs (Indian Census 2011) [3]. More than half of all the trans individuals suffer from a mental illness. The fear of 'coming out' and being subjected to discrimination for sexual orientation and gender identities, can lead to depression, posttraumatic stress disorder, thoughts of suicide and substance abuse- which is three-fold greater than that among heterosexual adults [4]. There is a dearth of sensitized treatment, specialised approaches to therapy and recognition of mental health issues in the transsexuals.

Replacing the term transvestite, 'transgender' was coined in 1980s [5]. For a clearer understanding, Eyler and Wright (1997) gave a nine-point gender continuum. Their continuum depicts a range of possible gender identities, from "female-based" identities to "male-based" identities, with "bigendered" identities [6]. The terms Transgender / transsexual / trans are used interchangeably in this article for addressing various aspects of the issues.

As a community, transgender is a part of the LGBTQ (Lesbian, Gay, Bisexual, Transgender, Queer) community. They fall under a minority and are subject to various psycho-social discriminations and societal prejudices. The stigma and discrimination against them leaves them subjected to multiple issues with their well-being: rejection at home, struggle for societal identity

and acceptance, access to health care and well-being and to ingress fundamental human rights [7]. However, the awareness and advocacy for LGBTQ rights with an increased sensitivity towards the community, has grown with time.
Despite the Indian government's recognition of the transgender as the 'third gender' (NALSA judgement, April 2014) [8], the trans community continues to face discrimination and is denied their fundamental rights (in many instances). With the disparity of health care services available to the trans community, this review is a focus on the ethical issues involved in the psychiatric treatment of transsexual community.

There are some cardinal ethical considerations assigned to the treatment of trans community and include the following [9]:

a) **Autonomy** – Transgender patients have the right to have their self-identification respected by staff, and their preferred name and gender identity should be recorded as they wish it to be. Transgender patients have the right to make healthcare decisions collaboratively with their providers under the principle of informed consent.
b) **Nonmaleficence** – Healthcare providers may need to reflect on their approach to gender identity and patient experience and should critically assess gaps in their knowledge and acceptance of gender nonconforming patients
c) **Justice** – The principle of justice affirms that transgender patients are equally entitled to a fair distribution of healthcare resources; however, transgender patients are less likely to have health insurance and access to mental health services.
d) **Beneficence** – Mental health providers with expertise in trans-affirmative mental health care that is respectful, aware, and supportive of the life experiences of transgender people are scarce. Transgender patients may view mental health assessments as an important gateway to accessing surgeons, endocrinologists, and legal changes. This perception could create a vulnerable power differential, making patients incredibly cautious during initial appointments.

The emergent transgender consciousness and political activism have had important implications for the field of mental health. It has persuaded the clinicians to rethink their assumptions about gender, sexuality, and sexual orientation. A "trans-positive" or "trans-affirmative" disposition to counselling is the need of the hour [5] that affirms transgendered persons; advocates for their political, social, and economic rights; and educates others about such issues. This approach is similar to the practice of "sex-positive" therapy [5,10].
Transgender people may seek mental health care for a number reasons; in addition to mental health issues relating to or resulting from one's gender identity. Research studies have also examined the wider views and needs of transgender people in relation to psychotherapy. It has been observed that therapy is also sought for relationship satisfaction, emotional health concerns and affirmative therapy among the trans community [11]. Vulnerability in relation to health issues has been identified with respect to various factors including: a lack of safe environments, poor access to health services, challenges to the continuity of care-giving by their family and friends, and poor mental health resources. Some people also report concerns around harassment, discrimination, physical violence and sexual abuse. Engaging in avoidant behaviours that compound their feelings of marginalization and exclusion, entering prostitution in the absence of financial support and illicit drug use are other noted problems among the community. Feelings of shame and unworthiness have been found to be common and some people articulate thoughts of self-harm and suicide. Homelessness, social ostracization and transphobic reactions and stigma related issues are other problems that the people of this community face that affects their emotional and mental health [12]. While some may be seeking specific assistance for gender-related themes, others are seeking assistance with depression, anxiety, or other clinical concerns unrelated to their gender identity [13]. It is commonly observed that mood spectrum disorders and psychotic disorder are seen to occur in the trans community as well.

Transgender and gender nonconforming people, in general, have three types of need for mental health [14].

i. **Exploration of gender identity:** This includes determining exactly what one's gender identity is, coming to terms with this gender identity, self-acceptance and individuation, and exploring individual–level ways to actualize this identity in the world. This may also include preparation and assessment for various gender affirming treatments and procedures.
ii. **Coming out and social transition:** This includes coming out to family, friends, and co-workers, dating and relationships, and developing tools to cope with being transgender in a sometimes, transphobic world.
iii. **General mental health issues, unrelated to gender identity:** The variety of mental health concerns experienced by transgender people include mood disorders, generalized anxiety, substance abuse, and post-traumatic stress disorder (PTSD).

Health care providers in the mental health as well as medical set up, are often unaware of the specific public health concerns of the trans community who fall under the minority group consumers [15] which adds to the psycho-social construct experience of marginalization [16]. This additionally entails ethical concerns that pertain to the health and treatment of the transgender community [12].

There are several challenges specific to the mental health of the trans persons that the community faces, especially so in the Indian scenario:

1. In the past, mental health issues for transgender people were narrowly viewed through a diagnostic lens of the gender identity disorder. This led to pathologizing of the person's unique psychosocial experiences, therefore, limiting therapeutic responses and treatment options [12]. The diagnosis of "trans-sexualism" first appeared in the International Statistical Classification of Diseases and Related Health Problems 9 in 1975 and, in 1980, in the Diagnostic and Statistical Manual of Mental Disorders III. However, recent research advancements (beginning since 2013) have confirmed that being transgender is not a mental illness. But in India, little medical research has been conducted on the issues of trans persons and the notion that being transgender is a mental illness continues to pervade.
2. Health and social care needs along with experiences, vary across the lifespan. Identities for the young people often take shape by findings ways to integrate their identity into their cultural background, personal characteristics and family circumstances. Corliss and others [17] show through their research that the experiences of young transgender people; therefore, young people continue to remain invisible and their concerns often neglected [12].
3. There is no expert clinical consensus nor clinical guidelines regarding the treatment of prepubescent children who meet the diagnostic criteria for gender dysphoria [18]. It is believed that gender dysphoria usually translates from adolescence to adulthood, however, the World Professional Association for Transgender Health (WPATH) has discussed that such is not the case. In their latest Standards of Care, merely 6 to 23 percent of boys and 12 to 27 percent of girls treated in gender clinics have shown persistence of their gender dysphoria into adulthood [19].
4. Sex change therapies are a practice till date despite the known fact that it is incorrect and impossible to medicate someone in order to make them conform to their biological sex. This raises a humongous ethical dilemma in the practice of those professionals who promise to change the 'preference of sexuality' as a consequence of the sex change surgery. There are several instances when children, adolescents and young adults have been taken to psychotherapists or counsellors by their parents with the notion that counselling can transform rather 'correct' their sexuality. However, these are myths and anybody who conforms to these practices in affirmation would be suspected on ethical (health care) practices. As opposed to this view, sex reassignment therapies are meant for those who wish to get themselves biologically corrected in order to conform to their psychological sex or the gender they wish to conform to (which is usually biologically the opposite).

5. The assessment before the sex reassignment surgeries and accessing hormone treatment remain at the merciful approval of the practitioners, some of them who continue to give a diagnosis of Gender Identity Disorder (the revision of Gender Identity Disorder in DSM IV TR has evolved to that of Gender Dysphoria in DSM 5 which implies the treatment of distress, depression or anxiety due to the non-conformity to the gender and does not involve any techniques or therapies to dissuade the personal choice / preference of an individual to identifying with a gender). The process of pre-counselling before the sex reassignment surgery may miss the underlying emotional factors and many a times, involves dissuasion rom the sex reassignment surgery in order to conform to the biological sex of the individual. Ethically, before the surgery, the individual is made to undergo various social norms and make lifestyle choices so as to prepare them for the post-surgery life.
6. Post-surgery and post hormone treatment care and counselling is missing, which is a crucial aspect in order to build and settle the transformations in the patient.
7. Unrequired ECT (electroconvulsive therapy), tying the patients to beds and institutionalisation are resorted to for convincing patients about the 'consequences of sex change' and instead stand the chance of an ethical dilemma. Unfortunately, several practitioners resort to giving ECT in order to prevent the sex reassignment surgery for the individual thinking it is part of the treatment, however, one must be aware that this means is hoax.
8. As a result of the apparent stressors, an increasing number of transgender people are seeking therapy. However, therapists often lack the skills to work effectively with transgender clients and are often insensitive, ignorant and unaware regarding the several transgender issues [20]. Many mental health professionals and medical practitioners lack an understanding of the LGBTQ spectrum health issues. Thus, an expertise to treat their concerns with an understanding of the ethical standpoints is missing.
9. The distinct needs of families with a transgender family member have often been neglected [21] and children are increasingly in need of support. It has been clearly identified that access to family and couples therapy remains limited if it exists in the first place [22]. It transpires that most professionals in mental health services have received no training on transgender issues and there are visible shortcomings in terms of mental health education and curriculum developments [23-24]. This denies the trans community the treatment they deserve. However, in the present times, the training for the same has taken a start but is a long way to go.
10. It has been noticed that practitioners harbour personal biases and prejudices in taking up trans patients for therapy or treatment. Psychiatrists and psychotherapists have a biased choice for taking up patients for treatment and thus may invariable deny the required and optimal mental health services needed by the trans individuals.
11. Counselling and psychotherapies also need a branch of specialisation in order to understand and appropriately address the concerns and mental health issues of trans communities that are amplified due to multiple concerns. After having recognised the 'third' gender, the education and training centres fail to be inclusive in terms of providing the care for trans community.
12. Schools and colleges lack a curriculum to understand the sensitivity of the health problems and other concerns of the trans community thus the inclusivity of trans members is a continued struggle in the educational and socio-political sphere. This further leads to the lack of awareness and understanding required to incorporate the needs and concerns of their community.
13. Gender dysphoria clinics are a far-fetched dream in India and other places. It is the need of the hour to incorporate and make available the deserving treatment to the trans individuals.

There are various suggestions that can be kept in mind in order to tackle the ethical dilemmas with regard to the treatment of the third genders in our country:

1. Primary care settings must offer a safer environment for transgender people to bring up mental health concerns and may be easier to access than mental health services.
2. Every intake for care should include a mental health history and an assessment for active mental health concerns.
3. Screening should include primary mental health problems, environmental and social stressors, and gender-related needs. Screening also requires provision of appropriate referrals to transgender-affirming mental health services when needs are identified.
4. When there is a trans patient that a mental health professional is unable to handle, one must choose to refer them to mental health professionals who specialise in the field of LGBT mental health and thus will be more equipped to treat them.
5. Gender Identity Disorder should be a discarded phenomenon. Gender dysphoria must be understood in the rightful definition of the underlying depression or distress due to gender confusion or social ostracization and not a pathological identity / personality.

CONCLUSIONS

The trans community, under the spectrum LGBTQ is one of the minorities that faces challenges on various psycho-social, economic and political fronts. One of the greatest challenges that these people face is not only being discriminated socially but also receiving discriminated treatments. One of the bigger challenges in the health domain is that of mental health. There is a dearth of sensitized treatment, specialized approaches to therapy and recognition of mental health issues in the transsexuals. However, there is scope for improvement. Mental health professionals dealing with these population must have a thorough awareness of the various ethical dilemmas involved when treating such special groups.

REFERENCES

1. Balakrishnan VS. Growing recognition of transgender health: stigma, discrimination and lack of legal recognition remain major barriers for transgender people to access the health services they need. Bull WHO 2016;94(11):790-2.
2. Deutsch MB, editor. Guidelines for the primary and gender-affirming care of transgender and gender nonbinary people. University of California, San Francisco; 2016.
3. Nagarajan R. First count of third gender in census: 4.9 lakh. The times of India.2015 May 30. News India, [Newspaper on the Internet]
4. National Alliance on Mental Illness. LGBTQ. [Internet]. 2017. Available from http://www.citethisforme.com/guides/vancouver/how-to-cite-a-website
5. Carroll L, Gilroy PJ, Ryan J. Counseling transgendered, transsexual, and gender- variant clients. J Couns Dev 2002;80(2):131-9.
6. Lodha P. Better Mental Health Services for Trans-Persons in India-There is a Need for Understanding, Training and Infrastructure. [Internet]. January 21,2017. Available from http://newsnviews.online/news-n-views/better-mental-health-services-for-trans-persons-in-india-the-need-for-understanding-training-and-infrastructure/
7. Ramya Jawahar Kudekallu. [Internet]. Why Transgender Community is struggling inspite of the NALSA judgment. March 3, 2017. Available from http://www.dailyo.in/politics/transgender-nalsa-judgment-aadhar-card-gender-rights-self-identification/story/1/15462.html.
8. American Association for Marriage and Family Therapy, California Division. LGBT affirmative therapy: Tips for creating a more lesbian, gay, bisexual, transgender, and gender inclusive practice from the AAMFT Queer Affirmative Caucus.
9. Hann M, Ivester R, Denton GD. Bioethics in Practice: Ethical Issues in the Care of Transgender Patients. The Ochsner Journal 2017;17(2):144–5.
10. Benson KE. Seeking support: Transgender client experiences with mental health services. J Feminist Fam Ther 2013;25(1):17-40.
11. Keogh B, Daly L, Sharek D, De Vries J, McCann E, Higgins A. Sexual health promotion programme: Participants' perspectives on capacity building. Health Educ J 2016;75(1):47-60.

12. Erickson-Schroth L, editor. Trans bodies, trans selves: A resource for the transgender community. Oxford University Press; 2014.
13. Joslin-Roher E, Wheeler DP. Partners in transition: The transition experience of lesbian, bisexual, and queer identified partners of transgender men. J Gay Lesbian Soc Serv 2009;21(1):30-48.
14. Alegria CA. Relationship challenges and relationship maintenance activities following disclosure of transsexualism. J Psychiatr Ment Health Nurs 2010;17(10):909-16.
15. Richards C, Bouman WP, Seal L, Barker MJ, Nieder TO, T'Sjoen G. Non-binary or genderqueer genders. Int Rev of Psychiatry 2016;28(1):95-102.
16. Spicer SS. Healthcare needs of the transgender homeless population. J Gay Lesbian Ment Health 2010;14(4):320-39.
17. Corliss HL, Rosario M, Wypij D, Wylie SA, Frazier AL, Austin SB. Sexual orientation and drug use in a longitudinal cohort study of US adolescents. Addict Behav 2010;35(5):517-21.
18. American Psychiatric Association. Diagnostic and statistical manual of mental disorders (DSM-5®). American Psychiatric Publishing; 2013.
19. Drescher J, Byne W. Treating transgender children and adolescents: An interdisciplinary discussion. Routledge; 2014.
20. Shipherd JC, Green KE, Abramovitz S. Transgender clients: Identifying and minimizing barriers to mental health treatment. J Gay Lesbian Ment Health 2010;14(2):94-108.
21. Bockting W, Miner M, Rosser BS. Latino men's sexual behavior with transgender persons. Arch Sexual Behav 2007;36(6):778-86.
22. Benson KE. Seeking support: Transgender client experiences with mental health services. J Feminist Fam Ther 2013;25(1):17-40.
23. Lev AI. The ten tasks of the mental health provider: Recommendations for revision of the World Professional Association for Transgender Health's Standards of Care. Int J Transgenderism 2009;11(2):74-99.
24. Merryfeather L, Bruce A. The invisibility of gender diversity: Understanding transgender and transsexuality in nursing literature. Nurs Forum 2014;49(2):110-23.

****

Acknowledgements – Nil
Source of Funding – Nil
Conflict of Interest – Nil

Review Paper

New Ways of Enhancing Classroom Experience

V.P Karthik

Assistant Professor in Pharmacology, Medical Education Unit, Sri Ramachandra Medical College & Research Institute
Corresponding Author : Dr. V.P Karthik
E-mail: dr_karthikvp@yahoo.co.in

ABSTRACT

During the last couple of decades, the human generations have experienced a huge growth in the development of technology. In between the technological evolution, we have experienced two significant generations: Baby Boomers and Millennials which represents the huge change that the technology had and have on their behavior and lifestyle. The biggest challenge any teacher faces is capturing the students' attention and putting across ideas in such a way that it stays with them long after they have left the classroom. For this to happen, classroom experience should be redefined and innovative ideas that make teaching methods more effective should be implemented. So here are some innovative ways that will help teachers reinvent their teaching methods and enhance classroom experience: Game-Based Learning, Medical simulation, Social network, develop a class wiki/blog, create a podcast for your class, post shareable content, use a video chat system, Create classroom hashtags, Smart board etc. Around the country professional colleges are increasingly creating educational games for learners. Medical simulation is used in healthcare education to replace or amplify real patient experiences with scenarios designed to replicate real health outcomes, using life like mannequins, standardized patients etc. Edmodo is an online networking website made specifically to encourage post-class conversation between students and their teachers. Developing a class wiki/blog entice students to comment on lessons, topics and current events. With a classroom podcast, you can read passages from a textbook for discussions to take place on a certain topic that's in line with your curriculum. With Pinterest, you and your students can post photos of projects, activities, field trips and anything else that's class related. Moodle is a learning platform designed to provide educators, administrators and learners with a single robust, secure and integrated system to create personalized learning environments.

Key words: game-based learning, edmodo, moodle, pinterest, podcast

INTRODUCTION

During the last few decades, human generations have experienced a massive growth in the development of technology. In between the technological evolution, we have experienced two significant generations: Baby Boomers and Millennials which represents the huge change that the technology had and have on their behaviour and lifestyle [1].

Baby boomers
Baby Boomers are born between 1945 to 1965. Growing up with the development of technology, they are classified as digital immigrants. Boomers were in their teens to early 30s when the first IBM PC's and Apples appeared. They grew up with technology, such as radio, television and landline telephones. Therefore, they did not have videogames or cell phones in their childhood.

Table 1 – Overview of each generation

	Baby Boomers	Generation X	Millennials
Years of birth	Late 1940s to early 1960s	Mid 1960s to late 1970s	1980 to 2000
Relationship to technology	Later members of this generation were exposed to new media/technology during formative	First generation to be raised on television	First generation with personal computers at home
Reaction to technology	Tries to understand how new technology works, marvels at it: generally holds to tradition, rather than adopting new technologies	Tries to understand how new technology works, marvels at it: generally adopts new technologies easily	Does not marvel at technology. Adapts to it. Uses it
Exposure to digital media		7+ hours/day	6+ hours/day
Key attributes	Individualistic Experimental Free-spirited Social-cause oriental Less optimistic Distrusting of government Cynical	Reactive Realistic Creative Financially engaged Work oriented Independent Rebellious attitudes	Group-oriented Global Technologically confident Risk-taking Optimistic

When it comes to technology, the Baby Boomers experienced a much different upbringing, compared to those born after them. The main technology breakthrough at that time was the rotary telephone and tube television. Otherwise, entertainment could be found outdoors with other children in the neighbourhood, where conversational skills, exercise and life lessons occurred [1]. So, when the Baby Boomers were first introduced to technology around 1960s, it had little impact on their everyday lives. Hence, technology did not play a pivotal role in that era. In the 1970s technology still had very little impact on the generation, because it was seen as something that only the academics used. During the 1980s, the technology slowly invaded people's homes and changed their behaviour. By means of technology, communication was improved to help customers make more informed decisions and to have better choices [2].

Millennials

Millennials are children of Baby Boomers and born between 1979 and early 2000's. Millennials are also known as the digital natives, because in their time, the technological evolution had reached an establishment [3].

Millennials have grown up in a time of rapid change, giving them a set of priorities and expectations sharply different from the Baby Boomers. Because in the 1990s, technology was now everywhere and it began to connect people around the globe. Around this century, the growth of technology became rapidly fast and explosive, but this was not a problem since the new generation was quickly adapting to it. Millennials have come of age during a time of technological change, globalization and economic disruption, which has given them a different set of behaviours and experiences than their parents. In the decade 2010, technology became fully integrated into people's daily lives. The internet and smartphones in an always-on digital world, has giving the Millennials a platform to reach the world [3].

Table 1: Overview of characteristics of each Generation

Today, both Baby Boomers and Millennials have access to the same technology. However, the behaviour towards technology and its usage differs between the two generations [2].

Table 2: Overview of learning preferences of Each Generation

Baby Boomers	Generation X	Millennials
PowerPoint visuals Case studies Group discussion Sharing of experiences	Modularized focused learning E-learning Experimental learning Active learning Sharing of best practices	Self-study downloads Podcasts Webinars Short sessions (1-4 hours) Interactive group activities Simulation Game style presentation

The biggest challenge any teacher faces is capturing the students' attention and putting across ideas in such a way that it stays with them long after they have left the classroom. For this to happen, classroom experience should be redefined and innovative ideas that make teaching methods more effective should be implemented. So here are some innovative ways that will help teachers reinvent their teaching methods and enhance classroom experience: Game-Based Learning, Medical simulation, Social network, develop a class wiki/blog, Create a podcast for your class, Post shareable content, Use a video chat system, Create classroom hashtags, Smart board etc. [2].

Game Based Learning (GBL)

Game based learning (GBL) is a type of game play that has defined learning outcomes. Generally, game based learning is designed to balance subject matter with gameplay and the ability of the player to retain and apply said subject matter to the real world. Game based learning describes an approach to teaching, where students explore relevant aspect of games in a learning context designed by teachers. Teachers and students collaborate in order to add depth and perspective to the experience of playing the game [4].

Good game-based learning applications can draw us into virtual environments that look and feel familiar and relevant. Within an effective game-based learning environment, we work toward a goal, choosing actions and experiencing the consequences of those actions along the way. We make mistakes in a risk-free setting, and through experimentation, we actively learn and practice the right way to do things. This keeps us highly engaged in practicing behaviours and thought processes that we can easily transfer from the simulated environment to real life [3].

Around the country professional colleges are increasingly creating educational games for learners. Pharmnexion, a game developed based on celebrity game show "Connection". Pharmzen, a game developed based on Snake & Ladder. Pharmtris, modelled after the video game Tetris, helps medical trainees learn to recognize and treat diseases. Pharmstream, an online spaced education game teaches health care providers about different drugs. Kahoot! is a free game-based learning platform that makes it fun to learn – any subject, in any language, on any device, for all ages. www.educationarcade.org serves as resource for many educational games [4].

Medical Simulation

One of the most important steps in curriculum development is the introduction of simulation-based medical teaching and learning. Simulation is a generic term that refers to an artificial representation of a real world process to achieve educational goals through experiential learning. Simulation based medical education is defined as any educational activity that utilizes simulation aides to replicate clinical scenarios. Although medical simulation is relatively new, simulation has been used for a long time in other high risk professions such as aviation [5].

Medical simulation allows the acquisition of clinical skills through deliberate practice rather than an apprentice style of learning. Simulation tools serve as an alternative to real patients. A trainee can make mistakes and learn from them without the fear of harming the patient. No longer limited to "see one, do one, teach one, instead "see one, do many with simulation, teach one". There are different types and classification of simulators and their cost vary according to the degree of their resemblance to the reality, or 'fidelity'. Simulation- based learning is expensive. However, it is cost-effective if utilized properly. Medical simulation has been found to enhance clinical competence at the undergraduate and postgraduate levels. It has also been found to have many advantages that can improve patient safety and reduce health care costs through the improvement of the medical provider's competencies [5].

Use of Social Networks

Social networks provide various benefits to educational settings. Nevertheless, a dominant social network tool like Facebook is not suitable for classroom due to lacks of privacy concerns. Edmodo is a private social network that is claimed to provide a secure learning platform for learners and educators. Edmodo is an online networking website made specifically to encourage post-class conversation between students and their teachers [6].

The Edmodo network enables teachers to share content, distribute quizzes, assignments, and manage communication with students, colleagues, and parents. Edmodo is very teacher-centric in their design and philosophy: students and parents can only join Edmodo if invited to do so by a teacher. Teachers and students spend large amounts of time on the platform, both in and out of the classroom. It is a safe environment. There is no bullying or inappropriate content because the teacher can see everything that is posted on Edmodo [7].

Blogs and Wikis in the Classroom

Over the last few years, more and more educators have begun using blogs and wikis in the classroom. Developing a class wiki/blog entice students to comment on lessons, topics and current events. Students should also be allowed to create new posts about their thoughts. This is a great way to enhance creative writing [8].

Blogs

Blogs, short for "web logs" have become popular through all social circles. Blogs give an author or authors an opportunity to share information with large groups of people via the web in a very easy-to-use format. Readers of articles are able to post comments to them, which makes each blog a dynamic work-in-progress. Often used as a distribution point for information, news, and updates, many companies, newspapers, and individuals have experienced benefits from starting a blog [9]. In the classroom, blogs can be used as a place for students to talk about what they have learned, discuss perspectives on a news item, or provide information to individuals who have an interest in the class. There are multiple sources for free blogs. Edublogs and tumblr are few examples [9].

Wikis

Wikis are another dynamic tool for use in the classroom. Wiki means "quickly" in Hawaiian. Whether that is how they were named or if it is an acronym for "What I Know Is", using wikis is a way to create webpages without having any knowledge of the software programming languages required to write web pages. Wikis can be edited by several people, making them a useful tool for collaborative projects [10]. Wikis also give students an opportunity to reveal what they have learned, begin conversations about topics they are researching, and display projects or other products from the classroom. Wikis are very easy to edit. Usually it only takes clicking an "Edit" button and a user will be given the opportunity to add their own content in a what-you-see-is-what-you-get (WYSIWYG) format. One example of a very popular wiki is Wikipedia [11].

Create a Podcast for your class

Technology isn't always about being seen; it can also be used to be heard. With a classroom podcast, you can read passages from a textbook for discussions to take place on a certain topic that's in line

with your curriculum. This will teach broadcasting skills, speaking skills and critical thinking skills. You can also record the discussion, which can be reviewed by the class or future students. Many learning institutions are cutting back on textbooks and investing in technology enhanced learning. Podcasting, as one of the latest mediums to emerge into the mainstream, is one of the forefront technologies in this change [12].

Podcasting offers the opportunity for lecturers to easily broadcast engaging audio content, which students can then listen to at any time and wherever they are. Student only needs to subscribe to a podcast feed and suddenly you can push educational content to them, rather than wait for them to come. Podcasts can easily be used in Schools, universities or colleges to engage students, and improve your teaching and learning practise [13].

Many learning institutions which have incorporated podcasting in their education system, have reported really positive results. This can be attributed to the ease of creating and consuming podcasts as well as the various ways in which education podcasts enhance the students' learning experience.

There are a lot of advantages of podcasting in education. Let's take a look:

1. **Flexible availability – 24 hours a day:** One of the greatest advantages of education podcasts is the portability and convenience they offer. Podcasts can be downloaded to a mobile device, allowing the student to access the learning resources anytime, anywhere, with very little effort. There are podcast subscription apps available for nearly every smartphone, and these make the process even easier. Once the student has subscribed to a show, they don't have to initiate the download: it's sent automatically to their app whenever a new episode is available. So, as soon as they sit down on the bus, there's a teaching resource there waiting for them. This makes podcasts very convenient and also paves the way for truly flexible learning.
2. **Students listen for longer than they watch or read:** One of the great powers of podcasting is the attention it attracts. It's tricky to encourage students to spend 30 minutes reading an article or watching a recorded lecture. That's because text and video require the student's full attention – they need to sit patiently, doing just one thing. As you probably know, this is tricky, not least because of the range of distractions just sitting waiting on the next browser tab.
3. Podcasting, on the other hand, can be done in otherwise wasted time, or alongside a routine activity. Students are far more likely to listen to consume your material if they can do it on the bus, driving the car, washing the dishes or in the gym. Because they're already distracted with a rote task, the content gets great attention. While text and video struggle to attract 2 or 3 minutes of viewing, podcasts routinely run an hour or more.
4. **Student created content:** One of the most interesting and valuable uses of Podcasting in Education is the concept of student created content. You might allow students to create their own podcast, perhaps including questions, discussions, presentations or projects. These can then be made available to their classmates. This allows students to take control of an aspect of their education and, therefore, encourages engagement in the material. They can question, they can contribute and they can teach each other.
5. **Lecture review:** One of the simplest uses of Podcasting is to record your existing lectures. This makes them easily accessible for students and creates invaluable study aids. Students can use the podcast for reference purposes or when preparing themselves for upcoming examinations. Any student who had challenges understanding a topic in the classroom can listen to this podcast. The can study the content and understand the topic at their own pace.This capacity to review, again and again, is particularly valuable to students from an international background or with learning difficulties. Finally, as we mentioned earlier, it's a struggle to encourage students to watch a 1hr *video* recording of a lecture. Instead, give them audio and they can consume it while they do their chores.
6. **Make up for missed classes:** When a student misses a class, it's not always because they're lazy. By offering a podcast, your unlucky, sick student who has missed a number of classes

can, instead, download recordings of the lectures. As a consequence, they're able to "fill in the gaps".

7. Moreover, a lecturer who is unable to attend his or her classes for a week or two can create a podcast of the lecture instead. This is made available to the students and thus makes up for any unattended lectures.
8. **Consistency of student experience:** Lecture recordings can help a teacher or professor to ensure that they always cover any given topic in the best way possible. This comes in handy when the lecturer in question teaches multiple sessions of the same class. It helps the teacher to ensure that every student gets the same experience, the same information, and that the syllabus is covered uniformly.
9. **Benefits for mental and visual impairments:** Perhaps one of the greatest pedagogic characteristics offered by educational podcasting is the chance to learn through listening. To many of the current student generation, learning through listening is enjoyable and less tedious than reading. Educational podcasts are appealing and may encourage students who don't like reading. Many students may struggle with reading through mental impairments, such as Dyslexia, and podcasts can be a big aid in this. Podcasts are equally useful in cases where a visual impairment makes traditional learning methods arduous [14].

Post Class Activities on Pinterest

Pinterest is a social network which allows you to share and comment on visual material, which could be photographs, sketches, videos or web pages. Like a virtual scrapbook, but very public, you can collate the items that you love. There is no copyright in the world of Pinterest: you can attach images from other people's web pages, or repin content from other people's boards. In fact, sharing content from other people is actively encouraged - this is about the social activity of interaction and sharing and gaining followers, rather than keeping ownership of your work. When the Pin It button is used to select pins from a web page, the pin automatically includes a link to the source web page, so you can remember where you found it, and other people can go to the source for more information [15]. With Pinterest, you and your students can post photos of projects, activities, field trips and anything else that's class related. Similarly, to YouTube, a private account can be created (no one but classroom students can log into the account). Since this is a visual medium, it will help to bring out creativity and confidence to share things with others [15].

Post Shareable Content

There's a more efficient way of sharing classroom notes, documents and projects and that's with programs like Google Docs, Moodle etc. Can also upload videos to a private channel just for your class using YouTube. Moodle is a learning platform designed to provide educators, administrators and learners with a single robust, secure and integrated system to create personalised learning environments. Moodle resources can be used for self-paced learning, remediation, assessment and many other educational strategies. Moodle facilitates flexible implementation, allows teachers to integrate a virtual learning environment at their own pace and opens the door to quick and easy sharing of educational resources. Opportunities for collaboration, dialog and discussion are also available in Moodle. Students find a variety of digital resources at one online location. Through a live connection, teachers who actively use Moodle will share their best practices [16-17].

Use a Video Chat System

The idea of pen pals can be enhanced using video chat systems like Skype, GoToWebinar etc. These systems can also be used to connect with experts or students from other classrooms that are far away. In this scenario, students will learn how to share experiences and build new relationships from a distance. Teleconferencing is a great way to teach children about teleconferencing etiquette, such as understanding when it's alright to connect and how to act when on camera. Skype in the classroom is a free community that connects teachers with educators and guest speakers from around the world. It is a website where teachers can find and run Skype lessons for their students. It enables teachers to find classes thousands of miles away or just round the corner, to collaborate

and learn with. Skype in the classroom also helps teachers to connect to guest speakers who can offer their expertise during a Skype lesson with a class. It provides schools with the opportunity to easily invite zoo keepers, mountain climbers, professional athletes and authors into their classroom for a chat. All teachers that sign up to Skype in the classroom will also be given free group video calling to use in their classroom.

With Skype in the classroom you can:

1. Connect and collaborate with other educators using Skype
2. Find and engage with experts from a wide range of fields
3. Share and promote your own Skype lesson ideas and resources [18].

Create Classroom Hashtags

If you have a classroom of students, then most of them will likely have Twitter accounts. Why not make learning a bit more fun by having them contact popular personalities, or spread hashtags related to the topic of the day using Twitter? This could help gain interaction from people around the world who have something to share. By doing this, it can help teach your students the value of making connections and the influence it can have on them [19].

Smart Boards

Smart Board technology in the classroom can enrich curriculum by taking a typical lesson and turning it into a fun, more interactive one. It is an innovative learning tool which gives unlimited creativity in the hands of teacher. The SMART Board brings ideas, lessons and resources to life. Teacher uses interactive tools and designs higher level thinking activities that involve student collaboration, creativity and problem solving. SMART board maximizes the impact of the lessons by using a high quality interactive digital and multimedia content, keeps the track of past lessons and activities, involve enthusiastic participation from every student from anywhere in the class room, modify and customize interactive material to suit the teacher's approach and style of teaching, plan and share lessons collectively or access a huge wealth of teaching resources. Here are a few more of the amazing advantages to utilizing technology in the classroom by having a smart board in your classroom.

Advantages:

1. **Smart Technology is Interactive:** Perhaps one of the greatest advantages of Smart Boards is their ability to be interactive. Research has repeatedly demonstrated that students learn best when they are fully engaged, and hands-on learning is one of the best ways to do that. With this technology, every student in the classroom has the ability to utilize the Smart Board at the same time. For example, advanced Smart Boards have the ability for students to use their finger and write directly on them. Most Smart Boards have the separate workspaces so several children can utilize the smart board at once. This interactivity provides students the ability to write, draw, or take notes via a tablet as well.
2. **They are Low Maintenance:** Smart Boards are very easy to use and require very little maintenance. The boards do not use chalk or markers (which can be messy) -- you only use your finger or a special pen. You will also find that they very easy to clean as well as maintain.
3. **You Have Access to Online Resources:** Smart technology offers learners easy access to online resources. They can be set up in the class so all students can view any website or video through a computer application. Teachers have access to a slew of knowledgeable databases that which can help them reinforce their lessons. Students can easily access a wide range of resources to help them complete a project or conduct any research.
4. **They are Environmentally Friendly:** If you are looking to "Go green," then here is your chance. Smart Boards are environmentally friendly because it eliminates the need for any worksheets and papers. There will be no need to photocopy and print a class set of papers. These interactive boards will help the environment in eliminating the tons and tons of wasted paper and ink that are dumped each year.
5. **Smart Boards Allow for Technology Integration:** One of the many benefits of Smart Boards is the ability for technology integration. Teachers are able to attach their

computers, video cameras, digital cameras, microscopes and pretty much anything else that you can think of to help aid in instruction.

6. **Proven Success Rates:** Studies have shown that using smart technology in the classroom has proven success rates; it raises test scores, improves student learning, enhances literacy, boosts attentiveness, and increases comprehension, to name a few.
7. Teachers report that the number one benefit that they see in their classrooms that use Smart Boards is an increase in student engagement. These interactive boards provide an extraordinary opportunity for teachers to create a classroom environment where students with different learning styles can learn from each other. This easy-to-learn technology ensures that both teachers and their students are developing the 21st century skills that they need in order to succeed in today's world [20].

CONCLUSIONS

In today's world, technology is a part of the daily lives of people all over the world. In order to keep civilization in sync with the technological advances, and to understand the connected future they will have, students in colleges, and other schools, have to be taught technical skills. Technology can be used as a way to learn, as well as a way to develop discipline. There is no concrete way to enhance classroom experience; each institution is advised to come up with its own way to suit the needs of their students. Since, it has been accepted globally that new ways should be in cooperated to enhance classroom experience and should not be left behind with traditional ways. We need to work towards the betterment of classroom experience after coming to consensus on what needs to be promoted and how to go about it. Therefore, the faculty and students should be involved not only in planning but also in deciding the strategy for implementation of new ways to enhance classroom experience. Undertaking the need assessment in every institution before planning a new way is crucial to address the specific needs. Involving a team of Medical education unit members, students and experts in ICT in this process would prove more beneficial.

REFERENCES

1. Myers KK, Sadaghiani K. Millennials in the Workplace: A Communication Perspective on Millennials' Organizational Relationships and Performance, J Buss Psychol 2010;25(2):225–38.
2. The evolution of technology across generations, November 10, 2016, Retrieved from http://edtechreview.in
3. Turner AR. Generation Z: technology and social interest. 2013.
4. Huotari K, Hamari J. Defining Gamification - A Service Marketing Perspective. October 3-5, 2012.
5. Abdulmohsen H. Simulation-based medical teaching and learning, J Fam Commun Med 2010;17(1):35–40.
6. Thongmak M. Social Network System in Classroom: Antecedents of Edmodo © Adoption. J e-Learning High Educ 2013;1:Article ID 657749,
7. Okumura S. The use of an educational social networking site for English language learning beyond the classroom in a Japanese university setting, Res Bull Education 2016;11:90-6.
8. Boulos MNK, Maramba I, Wheeler S. Wikis, blogs and podcasts: a new generation of Web-based tools for virtual collaborative clinical practice and education. BMC Med Educ 2006;6:41.
9. Warschauer M, Grimes D. Audience, authorship, and artifact: the emergent semiotics of web 2.0. Ann Rev Appl Linguistics 2007;27:1–23.
10. Choy S, Ng K. Implementing Wiki Software for Supplementing Online Learning. Australasian J Educ Technol 2007;23(2):209-26.
11. Rezvani E. Impact of Wiki-based Feedback on Grammatical Accuracy of Iranian EFL Learners' Writing Skill. Int J Foreign Lang Teach Res 2017;20(5).

12. McGarr O. A review of podcasting in higher education:Its influence on the traditional lecture, Australasian J Educ Technol 2009;25(3):309-21.
13. Cheung TO. The effectiveness of educational podcasts for teaching music and visual arts in higher education, Res Learning Technol 2012;20:14919.
14. Dale K. Strategies for Using Podcasting to Support Student Learning, J Hospitality Leisure Sport Tour Educ 2007;6(1):49-57.
15. Duffy M. Microblogging: tumblr and pinterest, Am J Nurs 2013;113(6):61-4.
16. Cordero Torres JA, Caballero OA. The Moodle platform: A useful tool for training in life support. Analysis of satisfaction questionnaires from students and instructors of the semFYC advanced life support courses, Aten Primaria 2015;47(6):376-84.
17. Balakrishnan J, Griffiths MD. Social media addiction: What is the role of content in YouTube ? J Behav Addict 2017;6(3):364–77.
18. McClure ER, Chentsova-Dutton YE, Holochwost SJ, Parrott WG, Barr R. Look At That! Video Chat and Joint Visual Attention Development Among Babies and Toddlers. Child Dev 2018;89(1):27-36.
19. Thomas A. Angelo K, Cross P. Classroom Assessment Techniques. 2nd Edition. Jossey-Bass: San Francisco, 1993.
20. Ikan EM, Dagan O. Using the Interactive White Board in Teaching and Learning – An Evaluation of the SMART CLASSROOM Pilot Project, Interdisciplinary Journal of E-Learning and Learning Objects 2011;7(1).

****

Acknowledgements – Medical Education Unit, Sri Ramachandra Medical College & Research Institute
Source of Funding – Nil
Conflict of Interest – Nil

Review Paper

Flex-learning - Online or face to face – Learners' freedom of choice

Sangita Sukumaran

Professor and Head, Department of Pharmacology and Secretary, Bioethics Unit, Terna Medical College, Navi Mumbai, Maharashtra, India.
Corresponding Author: Sangita Sukumaran
E-mail: drsangi@gmail.com

ABSTRACT

Bioethics education requires interactive methods in the teaching process. With the advances in internet and communication technology, students are able to gather more information than before. It is important to change teaching learning strategies from traditional face to face to include online learning. Flex learning is a thoughtful integration of classroom face-to-face learning experiences with online learning experiences. It is a student-centered approach with the teacher as the designer and facilitator of learning. Students will actively "experience" their learning, rather than being passive learners. Flexible learning gives students some choice in their learning format. They get to decide whether they want to approach lessons or even entire courses in face-to-face, online, or blended classrooms. Flexible learning gives students choices about when, where, and how they learn. The learning material is primarily delivered online to students prior to a face to face classroom session. Learning is self-guided as students independently learn and practice new concepts in a digital environment. Teachers are in the room to provide on-site support as needed. When technology is integrated into bioethics lessons, learners are more likely to be interested in and focused about the subjects they are studying. Advantages of flex learning are students learn critical thinking skills, collaborating with others, solving complex problems, developing different forms of communication and leadership- all aspects of learning unsupported by traditional, didactic lecturer driven approaches.

Key words: flexible learning, online learning, blended learning

INTRODUCTION

Bioethics education faces lot of challenges with respect to pedagogical advancements in higher education and the changing learning needs of the medical students. This has stressed the need for newer teaching and learning strategies, resources and learning environment on the part of both the students and teachers. With the advances in internet and communication technology, students are able to gather more information than before. It is important to change teaching learning strategies from traditional face to face to include online learning.

Flex learning is a thoughtful integration of classroom face-to-face learning experiences with online learning experiences. It is a student-centred approach with the teacher as the designer and facilitator of learning. Students will actively "experience" their learning, rather than being passive learners. According to Shurville and others, "Flexible Learning is a set of educational philosophies and systems, concerned with providing learners with increased choice, convenience, and personalisation to suit the learner [1].

With Flex learning, students have the choice of taking a class completely online, completely face-to-face in the classroom, or a combination of the two (blended learning) and they can switch back and forth between the formats without penalty or disadvantage. Flex learning shifts more of the control and responsibility to the students. This gives them the freedom to explore different learning environments and figure out what works best for them. The learning material is primarily delivered online to students prior to a face to face classroom session. Learning is self-guided as students independently learn and practice new concepts in a digital environment. Teachers are in the room to provide on-site support as needed. When technology is integrated into bioethics lessons, learners are more likely to be interested in and focused about the subjects they are studying. Advantages of flex learning are students learn critical thinking skills, collaborating with others, solving complex problems, developing different forms of communication and leadership- all aspects of learning unsupported by traditional, didactic lecturer driven approaches [2].
Flex learning helps to respond to flexibility and convenience wants of adult learners, accommodate increased number of learners in and outside classroom, address budget constraints in education funding and promote self-reliance and life-long learning [3].
And along the way, this discretion helps learners develop their abilities to self-evaluate and monitor their progress. The major hallmark of this learning transition is from teacher centred to learner focus paradigm.

Characteristics of Flex learning [4]

1. Reduction in traditional Face to Face time in learning environment
2. Offers flexibility in choice of delivery mode for learning
3. Offers equivalence in learning despite delivery mode
4. Offers convenience of fitting learning into personal schedule
5. Designed for student-centered and collaborative learning
6. Requires self-regulation and motivation for learning
7. Relies on technology in meeting learning outcomes to include assessment

The model, focus, role of the learner and technology has been changed drastically from traditional instruction to online learning environment as depicted in Table 1.

Table 1: Changes in Teaching Learning Environment

Changes in Teaching Learning Environment			
Model	Focus	Role of Learner	Technology
Traditional Face to Face	Teacher	Passive	Chalk and Board
Flex Learning	Learner	Active	Personal Computer

Learning Theories applicable to Flexible learning environment

1. **Connectivism [5]:** In connectivism learning, a teacher will guide students to information and answer key questions as needed, in order to support students learning and sharing on their own. Students are also encouraged to seek out information on their own online and express what they find.
2. **Constructivism [3]:** The student constructs knowledge from integrating new knowledge with past knowledge and experience.
3. **Engagement [6]:** This theory based on motivation and the idea that when students find the lesson meaningful and have a high level of interest in the tasks, they learn more effectively, tend to retain the information and are able to transfer it to other contexts. Students are engaged in collaborative learning and problem solving.

Preparing for Flex learning Class in Bioethics

Teaching ethical reasoning online presents its own particular challenges. Learning how to reason ethically is a dialectical, back-and-forth process. Simply delivering content through lectures and

readings are at best supplementary forms of instruction. The primary form of instruction needs to be interactive because students need to present ideas, get feedback on those ideas, and then try out re-formed ideas that themselves will be subject to further modification. So, because learning ethical reasoning requires active, not passive learning [7] particular care must be given to ensuring that online study materials are designed with opportunities for rich interaction between students as well as between students and instructors.

The facilitator needs an understanding of the best uses of various offline and online technologies as well as face to face teaching, and the tasks that will help to support, so that he/she can design for an appropriate mix of these elements. For each activity the facilitator identifies as anchor, content, application, future use, or some combination of these [8]. An anchor activity is designed to connect the material to participants' previous work or life experiences. Content activities, as the term implies, provide substantive learning material that may include research, data, theories and the like, and may be presented through charts, lists, stories, readings, lectures or other similar activities. Application activities present an opportunity for participants to work with the content during the course of training to reinforce the acquisition of their new skills or knowledge. And finally, future use information relates the content to the work the learner will do once they begin taking cases.

Role of Learners, Instructors and institutions in Flex learning

Learners, instructors, and institutions all have a role to play in flexible learning. Learners must take responsibility for their own learning, taking advantage of opportunities that are presented to them and being able to self-advocate for the delivery method that serves their learning best. Instructors must be able to identify opportunities for flexible learning, "with a growing emphasis on managing the learning process rather than being the primary provider of learning material." Institutions must build flexible systems that provide students with choices in their learning, as well as maintaining the frameworks that ensure a quality learning experience [9].

How is flexible learning implemented?

Implementing flexible learning will require teachers to make choices in a range of areas [10].

1. Modes of delivery of material and interaction: Developing a curriculum will require teachers to make selections related to resources and how they might be delivered to the learners.
2. Structure and content: Choices will have to be made about the program content and how that content would be structured.
3. Pace: An appropriate pace of learning would have to be considered that is not overwhelming to the learner.
4. Contact and interactions between learners and teacher and among learners: The alternatives available to conduct the interaction between learners and learners as well as learners and teachers would have to be considered and structured into the program.
5. Type and mix of media used: Teachers will have to draw from a selection of media options that suit the structure, content, interactions and learner needs.
6. Extent of self-direction of learners: Teachers would have to make decisions on the degree to which they allow learners to be autonomous and direct their learning.
7. Constraints: There are always constraints on time, space, access to learning resources and experiences and these realities will moderate the choices and levels of flexibility. It also gives rise to a number of student support, staff and resources issues including staff development and HR issues.

Methods for effective flex learning

The following face-to-face interactions and technology mediated interactions may be considered for effective flex learning –

1. Certain contexts of the topic could be covered by using videos and power point presentations.

2. **Group discussions:** Certain identified areas of the content can serve as topics for group discussion which will help learners in better understanding of the chosen content.
3. **Quiz:** A short quiz with limited questions from identified contents can be conducted by providing immediate feedback which will improve the learners' focused attention.
4. **Expert address:** A video call is now very much possible with the help of smart phones. With due appointment, an expert in the respective field may be asked to address the learners with some novel information about the topic by calling him/her over a smart phone. The speech can be projected to the whole class for listening.
5. **Using laptops in the classroom:** If lap tops are available with learners and the classroom has internet connectivity (possibly with wifi) important websites of respective subject can be suggested for the learners to browse and reflect on the topic in different views. This can also be done by the facilitator him/herself using an interactive board (smart board).
6. **Collaborative learning:** An online collaborative writing of assignment or a discussion may be mooted out with the help of online tools such as Google docs.
7. **Peer to peer presentations:** Flex learning can also be extended to the next session through different ways. One of the way is by using Peer to peer presentations. In this, learners will be required to present a ten-minute topic of their own in groups of 4 or 5 to their peers. They should be encouraged to choose topics they felt had not been covered sufficiently in the classroom.

Advantages of flex learning

1. It can keep students focused for longer periods of time. The use of computers to look up information/data is a tremendous time saver, especially when used to access a comprehensive resource like the Internet to conduct research. This time-saving aspect can keep students focused on a project much longer than they would with books and paper resources, and it helps them develop better learning through exploration and research.
2. It makes students more excited to learn. When technology is integrated into school lessons, learners are more likely to be interested in, focused on, and excited about the subjects they are studying. Subjects that might be monotonous can be much more engaging with virtual lessons, tutoring, and the streaming of educational videos.
3. It enables students to learn at their own pace. With the integration of technology, students are able to get direct, individualized instruction from the computer. This form of supplemental teaching allows them to engage with the information at times that are most convenient for them and helps them become more self-directed in the learning process. It also gives the teacher more time to accomplish classroom objectives, while freeing them up to help the students who need more help.
4. It prepares students for the future: Students will learn the critical thinking and workplace skills they will need to be successful in their futures. Education is no longer just about learning and memorizing facts and figures; it's about collaborating with others, solving complex problems, developing different forms of communication and leadership skills [11].
5. Flex learning in Bioethics education can be useful when teaching communication skills. For example communicating to a patient or his relatives about a medical error that has occured. In such scenarios the teacher can share with students videos on how the communication is done to disclose the medical error. The students can then be evaluated through role plays to test their understanding.

Challenges of Flex learning

1. Flexible learning may not be effective for complex content when compared to simpler content [12].
2. Learners with low motivation or bad study habits may fall behind
3. Without the routine structures of a traditional class, students may get lost or confused about course activities and deadlines
4. Students may feel isolated from the instructor and classmates

5. Instructor may not always be available when students are studying or need help
6. Slow Internet connections or older computers may make accessing course materials frustrating
7. Managing computer files and online learning software can sometimes seem complex for students with beginner-level computer skills
8. Hands-on or lab work is difficult to simulate in a virtual classroom

CONCLUSIONS

Flexible Learning is a set of educational philosophies and systems, concerned with providing learners with increased choice, convenience, and personalisation to suit the learner. It provides learners with choices about where, when, and how learning occurs. The central goal of flex learning is learner empowerment through self-directed learning. Flex learning uses technology to improve quality of education and promote life-long learning. However, flex learning is context-dependent and it is challenging for it demands proper knowledge, attitude and skills on the part of facilitators with respect to teaching techniques and technologies. A successful implementation of flexible learning in one domain may not necessarily have value within another domain [13]. Although flexible learning makes use of computers and the internet, it should be remembered that the focus should not be on the technology. Rather, the educator must first determine the best way to teach a particular topic and then determine how technology might enhance the teaching. In future, flex learning will be an innovative teaching learning strategy in bioethics education.

REFERENCES

1. Shurville S, O'Grady T, Mayall P. Educational and institutional flexibility of Australian Educational Software. Campus-Wide Information Systems, Emerald Group Publishing Limited 2008;25(2):74-84.
2. Majumdar S. Network based flexible learning: Prospects and challenges in the 21st Century: Invited keynote address at the International Conference of Vocational Education and Training (IVETA '97), Helsinki, Finland. August 24-28 ; 1997.
3. Ling P, Fraser K. The future of learning and teaching in next generation spaces. International Perspectives on Higher Education 2014;12:65-84
4. Cybinski P, Selvanathan S. Learning experience and learning effectiveness in undergraduate statistics: Modelling performance in traditional and flexible learning environments. Journal of Innovative Education 2009;3(2):251-71.
5. Siemens G. Connectivism: A learning theory for the digital age. International Journal of Instructional Technology and Distance Learning 2014;2(1:3-10.
6. Marshall S. Engagement theory, WebCT, and academic writing in Australia. International Journal of Education and Development using Information and Communication Technology (IJEDICT) 2007;3(2):109-15.
7. Sternberg RJ. We need to teach for ethical conduct. The Educational Forum 2009; 73(3):190-8.
8. Flex-learning edition. CASA for children Available on http://nc.casaforchildren.org/files/secure/community/programs/Training/FlexLearning_2012/Facilitator_Manual_Session_0_2012.pdf
9. Ryan A, Tilbury D. Flexible Pedagogies: New Pedagogical Ideas. Higher Education Academy, York ; 2013.
10. Deakin University, Australia (2009). Introducing flexible learning. Consultado el 08 de Mayo del 2013. http://www.deakin.edu.au
11. Huneycutt T. Technology in the classroom: The benefits of blended learning. Retrieved from http://www.nms.org/blog/TabId/58/PostId/188/technology-in-the- classroom-the-benefits-of-blended-learning.aspx ; 2013.
12. Granger BP. Enhancing Training Outcomes in the Context of e-Learning: The Impact of Objective Learner Control, Training Content Complexity, Cognitive Load, Learning Goal Orientation, and Metacognitive Strategies. Graduate School Theses and Dissertations ; 2012.
13. Zayapragassarazan Z, Kumar S. Blended Learning in Medical Education. NTTC Bulletin 2012;19(2):4-5.

****

Review Paper

State of the Elderly in Nigeria: Ethical Dimensions

Nmadu AG, Omole NV, Joshua IA, Muhammad-Idris ZK, Adiri F

Department of Community Medicine, College of Medicine, Kaduna State University, Kaduna, Nigeria
Corresponding Author : Dr. Awawu Grace Nmadu
E-mail: jumainmadu@yahoo.com

ABSTRACT

Ageing populations present a challenge to all regions of the world. This challenge is, however, greatest in Africa which will experience the fastest rate of population ageing than any other region as projected to be in 2050. Nigeria is the most populous country in Africa and the percentage of people aged 60 years and above is predicted to rise from 6.4 million in 2005 to 25.5 million in 2050. The high growth and rapidly increasing numbers of older persons have significant implications for socioeconomic conditions and the challenge is heightened by the concurrent issues of high levels of poverty and the HIV pandemic, which affects the quality of life of millions of people and particularly impacts upon older people. Promotion of the rights of older people as laid down in the Universal Declaration of Human Rights and other declarations have been adopted in many countries of the world including Nigeria, however, the policy and institutional frameworks for tackling the challenges of the ageing population in Nigeria are weak. The traditional support system and family institutions which have been the backbone of support to the elderly in Nigeria are gradually eroding due to modernization and harsh economic conditions. The older persons are faced with many challenges relating to poverty, economic security, access to affordable health care, violence and abuse and integration into social life. This narrative review of literature explores the magnitude of the problem of ageing in Nigeria, factors affecting the situation of older people, the state of social protective policy implementation in Nigeria and the ethical implications.

Key words: challenges, elderly, ethical issues, policies, Nigeria.

INTRODUCTION

Ageing populations present a challenge to all regions of the world, especially in Africa. The population dynamics across all countries in the world have considerably changed over the past century. Contributors to the changing population structure include decreasing rates of mortality, decreasing birth rates and changes in migration trends. These factors can be directly linked to an increasingly ageing population [1]. In Sub-Saharan Africa, it is estimated that the number of elderly persons will rise from about 43 million in 2010 to reach 67 million by 2025 and 163 million by 2050 [2]. There is, however, no general consensus on the age at which a person is regarded as old, although there are commonly used definitions of old age [3]. The World Health Organization (WHO) [4] defines elderly persons as those aged 65 years and older, while the United Nations defines older persons as "those aged 60 years and above" [5]. In Nigeria, anybody that is 60 years and older is considered elderly [6]. The high growth and rapidly increasing numbers of older persons have significant implications for socioeconomic conditions and the challenge is heightened by the concurrent issues of high levels of poverty and the HIV pandemic, which affects the quality of life of millions of people and particularly impact upon older people. Promotion of the rights of older people as laid down in the Universal Declaration of Human Rights [7] and other declarations

have been adopted in many countries of the world including Nigeria, however, the policy and institutional frameworks for tackling the challenge of ageing in Nigeria are weak [8,9]. The traditional support system and family institution which have been the backbone of support for the elderly in Nigeria are gradually eroding due to modernization and harsh economic conditions [10]. The older persons are faced with many challenges relating to poverty, economic security, access to affordable health care, violence and abuse and integration into social life.

Nigeria is the most populous country in Africa and currently has the highest population of older people in Sub-Saharan Africa8 and recent survey reports and projections indicate a reality not prepared for, of the rising nature of the numbers of the elderly population in Nigeria. Yet there is very little put in place by the government as institutional policies and legislation to cater for the needs of the elderly. There is also a paucity of information on the magnitude of the problems and implications of the population ageing shift in Nigeria. This review explores the challenges of ageing, factors affecting older people, the state of social protective policy implementation in Nigeria and the ethical implications.

METHODOLOGY

A narrative review of literature using Medline, PubMed, African Journals Online, World Health Organization (WHO) and UN databases was carried out. Search words used included - "elder", "elders" "Elderly", "Aged", "Old", "Older persons", "Challenges", "Policies", "Ethical issues", "Nigeria". We reviewed the reference lists of selected articles for additional articles on the topic. The selected studies primarily reflected the questions being answered in this review. Forty-seven articles published between 1990 and 2018 were selected, 26 of which were included in the review. The review considered original researches, reports and reviews published in English language reporting on people aged 60 years and older. Articles that were not relevant to research objectives of the study and that were not primarily conducted among Nigerians were not included in the review.

Table 1: Description of articles included in the review

Author	Title	Type of research	Type of Data
National Population Commission (NPC) [Nigeria] and ICF Macro 2009	Nigeria Demographic and Health Survey 2008.	Survey	Quantitative
Mudiare 2013	Abuse of the aged in Nigeria: Elders also cry.	Nonsystematic review	Secondary data
Ajomale 2007	Current State, Social and Economic Implications of aging in Nigeria	Narrative review	Secondary data
Dokpesi AO 2015	The future of elderly care in Nigeria: borrowing a leaf from a foreign land	Literature review	Secondary data
National Population Commission (NPC) [Nigeria] and ICF Macro 2004	Nigeria Demographic and Health Survey 2003	Survey	Quantitative
Akinyemi Isiugo-Abanihe 2014	Demographic dynamics and development in Nigeria.	Nonsystematic and desk review of evidence	Secondary data sources
National Population Commission (NPC) [Nigeria] and ICF Macro 2014	Nigeria Demographic and Health Survey 2013	Survey	Quantitative

Animasahun & Chapman 2017	Psychosocial health challenges of the elderly in Nigeria: a narrative review.	Nonsystematic review	Secondary data
Adeleke 2014	Living with modernity: challenges of ageing in a transitional Nigerian Society.	Survey	Quantitative and Qualitative
Shofoyeke & Amosun PA 2014	A Survey of Care and Support for the Elderly People in Nigeria.	Survey	Quantitative
Gureje et al. 2008	Determinants of quality of life of elderly Nigerians: results from the Ibadan study of ageing.	Survey	Quantitative and Qualitative
Uzobo & Dawodu 2015	Ageing and health: A comparative study of rural and urbanized status in Bayelsa State	Survey	Quantitative
Fajana 2011	Decent work deficits in Nigeria: A constituents' consensus		
Adebowale & Atte 2012	Elderly well-being in a rural community in North Central Nigeria, sub-Saharan Africa.	Descriptive cross-sectional	Quantitative data
Iloh et al. 2013	Burden of non-communicable diseases among geriatric Nigerians in a rural hospital in resource-constrained setting of Eastern Nigeria.	Descriptive hospital-based study	Data from clinical records
Ekpenyong et al. 2012	Double burden, non-communicable diseases and risk factors evaluation in sub-Saharan Africa: The Nigerian experience.	Cross-sectional multicenter health survey	Quantitative
Karimo et al. 2017	Financial Burden Associated with Ill-Health: Evidence from the Elderly Population in Nigeria.	Analysis of data from a survey	Secondary data generated from the Harmonized Nigeria Living Standard Survey (HNLSS)
Eteng & Utibe 2015	The National Health Insurance Scheme and its Implication for elderly Care in Nigeria	Narrative review	Secondary data
Adedokun 2010	Caring for the elderly: Towards a better community.	Survey research design	Quantitative
Obashoro-John 2011	Global Aging Issues: The Nigerian Situation.	Literature review	Secondary data

Aluko 2007	Old Age and Social Security in Nigeria: The Challenges of the New World Order.	Survey	Quantitative
Akanji et al. 2002	Healthcare for older persons, a country profile	Literature review	Secondary data
Asagba 2005	Research and the Formulation and Implementation of Ageing Policy in Africa: The Case of Nigeria	Narrative review	Secondary data
Gesinde & Adekeye 2011	Counselling services for remediating the biopsychosocial challenges of the aged in Nigeria	Narrative review	Secondary data
Aiyede et al. 2015	The political economy of social protection policy uptake in Nigeria.	Report	Qualitative and quantitative
Araromi 2015	Protecting the Rights of Old People in Nigeria: Towards a Legal Reform	Narrative review	Secondary data

RESULTS AND DISCUSSION

Levels and trends in Population Ageing

In 2017, there were an estimated 962 million people aged 60 or above in the world, comprising 13 percent of the global population [11]. The population aged 60 or above is growing at a rate of about 3 percent per year. It is expected to more than double by 2050 and to more than triple by 2100, rising from 962 million globally in 2017 to 2.1 billion in 2050 and 3.1 billion in 2100 [11].

Nigeria as the most populous country in Africa currently has the highest number of aged or elderly people in Africa. The total census figures for Nigeria increased from 93 million in 1999 to 140 million in 2006 (growth rate of 3.2% per annum). It was projected that the population will double in size in just 24 years.6 Analysis of the 1991 national census predicted that the population of the elderly in Nigeria would reach 5.8 million in 2005, 16 million in 2030 and 47 million by the year 2060 [12]. By 2006, 6.8 million were aged 60 years and above - an increase of 1 million above the 2005 prediction. The population of the aged was also estimated at 4.8% in 2006 and 5.1% in 2015 [13]. In Nigeria, life expectancy at birth increased from 40 years in 1970 to 53 years in 2016 and it is projected that life expectancy will increase to 55 years and 63 years in the years 2029 and 2049 respectively [11]. The increase in population of the elderly could be explained by the technological advancements in medicine, and water, hygiene and sanitation measures. Nigeria, like other African nations, reports a significant increase in survival for persons over the age 60 years.8 This is also not unconnected with the decline in the 4 mortality indicators: neonatal, infant, child, under-five and maternal mortality rates experienced in the country [14]. It is estimated that by the year 2025 the population of Nigerians aged 60 and above will constitute 6 percent of the entire population (Table 1).

Table 2: Projected Population Ageing in Africa, West African and Nigeria (UN 2005) From 2005-2050

Region	**Population 60 years+ (per cent)**			**Population 60 years+ (millions)**		
	2005	2025	2050	2005	2025	2050
Africa	5.2	6.4	10.0	47.4	85.5	192.9
West Africa	4.7	5.5	9.0	12.0	21.8	51.6
Nigeria	4.9	6.0	9.9	6.4	11.5	25.5

Source UN Population Division (2005)

Factors Affecting the Situation of Elderly People in Nigeria

Limited political will and commitment

Unfortunately, little has been done to impact on the life situations of older people because ageing problems are seldom considered as important issues in development agenda in many African countries including Nigeria.8 Despite the increase in the proportion of older people in Nigeria, there is a dearth of policies and programs to address the challenges and problems of ageing in the country [8,15]. The syndrome of seeing elderly citizen's welfare as the responsibility of the family had made the government of Nigeria do little or nothing to provide for their welfare. In many cases, when they are entitled to a pension, this regrettably is often not paid and when paid, it is frequently not often on time [9]. The majority of elderly Nigerians do not have access to jobs that lead to retirement and attract pensions at old age, hence they are prone to neglect and abandonment in the society. The majority of the ageing population in Nigeria live in rural areas and support themselves by subsistence farming [16]. A large proportion of the aged who live in urban areas the cities are basically self-employed and have to work for their sustenance until they are no longer able to work for their sustenance [17].

Social and economic factors

Poverty remains a major challenge in Nigeria; more than 60% of Nigeria's population is estimated to live below the absolute poverty line of $1 per day [18]. Poverty is prevalent in the country and elderly persons may be more at risk because they are no longer in the economically active phase of life and the national social security systems do not provide economic buffers in old age [19]. Most of the Nigerian elderly are vulnerable to poverty due to inadequate provision of social services and economic deprivation [20]. Due to poverty and poor infrastructural development, elderly people living in Nigeria not only face lower life expectancies but also live a higher proportion of their lives in poor health. Poverty has prevented many older adults from achieving good well-being and life satisfaction. It is estimated that 70% of Nigeria's workforce work in the informal sector which lacks any form of social security and protection [21]. Many older adults reach retirement age after a lifetime of poverty and deprivation, poor access to health care and poor dietary intake [22]. These situations leave them with insufficient personal savings to meet their daily needs.

Diminished capacity of the family system to care for the elderly

Old people in Nigeria generally live in and receive care at their homes or the residence of children or relations [15]. Traditional family support is gradually decreasing given the increasing economic difficulties experienced by families in Nigeria. Increasing levels of unemployment and poverty have made families less able to offer support to older people [17]. Urbanization and migration take young members of the family away and it is increasingly difficult for grown-up children to manage families of their own as well as their aged parents [8]. This put the elderly at risk of neglect whether or not they live alone. This occurs in a context where elderly care in Nigeria is rarely seen in the form of institutionalized centres or private home care as available in industrialized countries.

Health issues of older people and inadequate access to health care

There is evidence in the reviewed literature on the growing burden of disabilities and chronic diseases among the elderly in Nigeria [23-24]. Old age often comes with health challenges and decreasing functional capacity which usually affects the sense of economic well-being of an individual. According to a study in south-eastern Nigeria, cardiovascular disorders, musculoskeletal disorders, dyspepsia, visual impairment and diabetes mellitus were the commonest non-communicable diseases experienced by geriatric patients [23]. In Nigeria, the current distribution of resources has been heavily skewed towards maternal and child health as well as a biased attention directed to the three big infectious diseases (malaria, tuberculosis and HIV/AIDS), this has left geriatric non-communicable diseases with little attention [23]. All this happens in the background of limited access of the elderly to health care in the country, health care is severely limited both by the paucity of health facilities and manpower and by out-of-pocket

payment arrangements [22]. In a country with weak primary health care structures, mainly financed by out of pocket payment, old people are limited in accessing and utilizing basic health care services when they do not have the money to pay for such services. It has been reported that more than 50% of elderly people in Nigeria have unmet healthcare needs because they cannot afford it [25]. In addition, the National Health Insurance Scheme of the federal government has not clearly captured the elderly [26]. This means this group of persons have to pay for their health with out-of-pocket expenses.

Social protection systems

Nigeria's elderly are disadvantaged regarding social support and the rising population numbers of this group of citizens makes the demand for social support imperative. The majority of the elderly in Nigeria live in the rural areas and are mostly agricultural subsistence farmers, who do not receive pension benefits or social support from the government [6,27]. The Contributory Pension Scheme(insurance) in Nigeria does not cover many older persons. This pension scheme is mainly designed for those who are working in the formal sector whereas, the informal sector of the economy represents the major employer of labour and those who, perhaps, are most in need of the limited social security benefits that pension schemes provide, but they are not envisaged in the scheme [28]. The social security arrangement in Nigeria faces many challenges, which include: poor coverage, inadequacy, lack of administrative efficiency and transparency, poor governance and regulation [29]. The pension scheme has been characterized by corruption thereby affecting the elderly access to their money at the appropriate time.

The Nigerian Situation

The already inadequately funded healthcare system in Nigeria has placed little emphasis on the care of older people because there are "more urgent" health problems, so funding for older people is limited [30]. The health care system in Nigeria spends a small fraction of the budget on treating the elderly and their access to care is limited, access to healthcare is severely limited both by paucity of health facilities and manpower and by out-of-pocket payment arrangement [15].

In 1989, the Nigerian government developed the National Social Development aimed to provide a framework for protecting elderly persons from moral and material neglect and provide public assistance when necessary [15]. Despite adequate provisions, however, there has been no effective execution by any federal agency. This also occurs in the backdrop of Nigeria not yet enacting the National Policy on the care and welfare of older persons. Since March 2003, it has remained in draft form [9]. It has been observed that lawmakers have not been sensitive to the scope, nature and seriousness of older persons' plight in Nigeria; neither are they sensitive to the broad economic and social development implications of leaving these problems unaddressed in the context of rapid population ageing [31].

In Nigeria today, social security policies for the aged are yet to be formulated. The social security system and insurance schemes in Nigeria do not cover many older persons [32]. It covers only the formal sector (public and organized private sector) and is fraught with problems of implementation. There is a failure of the Nigerian federal institutions to regularly disburse pension funds to retirees and provide adequate social services for the aged [9].

In Nigeria, the burden of care squarely rests on family members despite the provisions of the 1999 Constitution, [33] Section 14. 2(b) which states categorically that, "The security and welfare of its people shall be the primary purpose of the government" and in Section 16, sub-section 2(d), which promises, "That suitable and adequate shelter and suitable and adequate food, reasonable national minimum living wage, old age care and pensions and unemployment, sick benefits and welfare of the disabled are provided for all citizens."

Some state government services as well as some religious organizations, non-governmental organizations and community-based organizations, form the bulk of network of support for the elderly in Nigeria in addition to the informal arrangement through the family system.34 Some activities have been implemented – in areas of livelihood support, skills acquisition, capacity building, medical care for the elderly in states in the country like Ekiti and Lagos. There is, however, no regulatory framework for institutionalized elderly care in Nigeria. A few states have

introduced social assistance for older persons, and these include Ekiti and Anambra States [32]. These states run social welfare packages for senior citizens aimed at taking care of men and women of 65 years and above in the case of Ekiti and 75 years and above in the case of Anambra State [32]. The scheme in Ekiti formally took off in 2011, while that of Anambra took off in 2012.
In Nigeria, institutions such as old people homes for the aged are not very common. There are presently few registered private owned old people's homes in Nigeria [9], showing the limited extent of government participation in the care of older adults.

Ethical dimensions
From different international and national instruments, the term human rights of older person include the following: the rights to adequate social security, assistance, and protection; right to freedom from discrimination based on age or any other status, in all aspects of life including employment and access to housing, health care and social services; right to good health or healthcare; right to protection from neglect and all types of physical or mental abuse [35]. Other rights include the right to be treated with dignity; the right to full and effective participation in decision - making concerning their well-being; and to full and active participation in all aspects of the political, economic, social and cultural life of society [36].
The Human Rights Council Advisory Committee released a report in January 2010 discussing the global impact of demographic ageing and the increasing number of human rights violations suffered worldwide by the older people in the areas such as physical and moral integrity, susceptibility to poverty, employment, social security and health care [37]. The committee in its report canvassed for the need for a human rights treaty for older people to enhance the visibility of older person in human rights law. It submitted that lack of explicit reference to old people in the general human rights law applicable to everyone is likely to lead to discriminatory attitude and practice to older persons, and as a result, old persons are invisible as a group within the law and are subject to exposure to a myriad of human right violations [37].
Nigeria is yet to adopt the policy that will address the plights of the old people who as a result of their vulnerability are missing out on the enjoyment of basic rights and privileges. The elderly in Nigeria are as a result exposed to discrimination, financial insecurity, social insecurity, various forms of abuse, limited access to health care, and lack of basic human needs - food, shelter and clothing amongst others [8, 15, 38].
Due to the narrative approach of this study in which the nature of the search method was non systematic, the interpretation of the literature is prone to subjectivity [39,40,41]. The authors considered this limitation in their search strategy but were constrained with limited published evidence with explicit methodologies in the literature from Nigeria, they thus gave precedence to the need for an overview of this selected topic. However, this review provides an overview or broad scope of the topic at hand, following guidelines described in previous publications [40,41]. The findings serve as a useful educational tool for this critical public health issue. The review has also helped to identify the gaps within the research area in Nigeria.

CONCLUSION

Ageing in Nigeria is occurring against the background of socio-economic hardship, widespread poverty, the HIV/AIDS pandemic, the rapid erosion of the traditional extended family structure and lack of political will to address the issues. The lack of reliable national-level data on the situation and needs of older persons have resulted in the low appreciation of ageing and consequently, a lack of development of friendly policies and programs for the aged. Strategies to eliminate discrimination against the elderly and to raise national consciousness of ageing issues should be put in place by government and relevant stakeholders. In addition, the rights due to the old people need to be protected by the State through policy development and legislation as well as implementation. Policies and strategies to address ageing should be included as an integral part of national and sub-national budgets. The need for more current and detailed studies with explicit methodologies on ageing in Nigeria cannot also be overemphasized.

REFERENCES

1. Bloom DE, Luca DL. The global demography of ageing: facts, explanations, future. In: Piggott J, Woodland A, editors. Handbook of the economics of population ageing. Oxford: Elsevier; 2016. pp. 3–56.
2. United Nations Department of Economic and Social Affairs (UNDESA). Population Division, World Population Prospects: The 2010 Revision, New York, United Nations, 2011.
3. World Health Organization. Proposed working definition of an older person in Africa for the MDS project [Internet] Geneva: World Health Organization; 2016. Available from: http://www.who.int/healthinfo/survey/ageingdefnolder/en/ [Accessed 20 January 2018].
4. WHO. World Health Organization Health of the Elderly. Tech Rep Series No 779. Geneva, WHO, 1989.
5. United Nations, author. World population ageing 2013 [Internet] New York: United Nations; 2013. Available from: http://www.un.org/en/development/desa/population/publications/pdf/ageing/WorldPopulationAgeing2013. pdf. [Accessed 20 January 2018].
6. National Population Commission (NPC) [Nigeria] and ICF Macro. Nigeria Demographic and Health Survey 2008. Abuja, Nigeria: National Population Commission and ICF Macro. 2009.
7. The Universal Declaration of Human Rights (UDHR) 1948. Available at http://www.ohchr.org/EN/UDHR/Documents/UDHR_Translations/eng.pdf [Accessed 2 February 2018].
8. Mudiare PE. Abuse of the aged in Nigeria: Elders also cry. Am Int J Contempor Res 2013;3(9):79-87.
9. Ajomale OL. Current State, Social and Economic Implications. Summer Newsletter of the Research Committee (RC11) on the Sociology of Ageing of the International Sociological Association (ISA). Oxford Institute of Ageing 2007:15-20.
10. Dokpesi AO. The future of elderly care in Nigeria: borrowing a leaf from a foreign land. Ageing Int 2015;40(2):81-97.
11. United Nations Department of Economic and Social Affairs (UNDESA). Population Division, World Population Prospects: The 2017 Revision, New York, United Nations, 2018.
12. National Population Commission (NPC) [Nigeria] and ICF Macro. Nigeria Demographic and Health Survey 2003. Abuja, Nigeria: National Population Commission and ICF Macro. 2004.
13. Akinyemi AI, Isiugo-Abanihe UC. Demographic dynamics and development in Nigeria. Afr Population Stud 2014;27(2):239.
14. National Population Commission (NPC) [Nigeria] and ICF Macro. Nigeria Demographic and Health Survey 2013. Abuja, Nigeria: National Population Commission and ICF Macro. 2014.
15. Animasahun VJ, Chapman HJ. Psychosocial health challenges of the elderly in Nigeria: a narrative review. Afr Health Sci 2017;17(2):575-83.
16. Adeleke JO. Living with modernity: challenges of ageing in a transitional Nigerian Society. Niger J Appl Behav Sci 2014;2:245-54.
17. Shofoyeke AD, Amosun PA. A Survey of Care and Support for the Elderly People in Nigeria. Mediterr J Soc Sci 2014;5(23):2553.
18. National Bureau of Statistics (NBS). The Nigeria Poverty Profile 2010 Report of the National Bureau of Statistics Harmonized Nigeria Living Standard Survey (HNLSS), 2012.
19. Gureje O, Kola L, Afolabi E, Olley BO. Determinants of quality of life of elderly Nigerians: results from the Ibadan study of ageing. Afr J Med Med Sci 2008;37(3):239-47.
20. Uzobo E, Dawodu OA. Ageing and health: A comparative study of rural and urbanized status in Bayelsa State, Nigeria. Eur Scientific J 2015;11(14):258-73.
21. Fajana, S. Decent work deficits in Nigeria: A constituents' consensus. Geneva. International Labour Office, 2011
22. Adebowale SA, Atte O. Elderly well-being in a rural community in North Central Nigeria, sub-Saharan Africa. Pub Health Res 2012;2(4):92-101.
23. Iloh GU, Chuku A, Amadi AN. Burden of non-communicable diseases among geriatric Nigerians in a rural hospital in resource-constrained setting of Eastern Nigeria. Sci J Pub Health 2013;1:141-6.
24. Ekpenyong CE, Udokang NE, Akpan EE, Samson TK. Double burden, non-communicable diseases and risk factors evaluation in sub-Saharan Africa: The Nigerian experience. Eur J Sustainable Dev 2012;1(2):249-70.
25. Karimo TM, Krokeyi WS, Ekainsai SZ. Financial Burden Associated with Ill-Health: Evidence from the Elderly Population in Nigeria. Equator J Soc Sci Hum Behav 2017;2(1):25-43.

26. Eteng IE, Utibe EE. The National Health Insurance Scheme and its Implication for elderly Care in Nigeria. Int J Sci Res 2015;(2)4:128-32.
27. Adedokun MO. Caring for the elderly: Towards a better community. Eur J Educ Studies 2010;2(3):284-96
28. Obashoro-John O. Global Aging Issues: The Nigerian Situation. The Journal of Aging in Emerging Economies, 2011 p.62.
29. Aluko Y. Old Age and Social Security in Nigeria: The Challenges of the New World Order. International Journal of Social and Management Sciences 2007;1:73-87.
30. Akanji BO, Ogunniyi A, Baiyewu O. Healthcare for older persons, a country profile: Nigeria. J Am Geriatr Soc 2002;50(7):1289-92.
31. Asagba, A. Research and the Formulation and Implementation of Ageing Policy in Africa: The Case of Nigeria. Generations Review 2005;15(2):39-41.
32. Gesinde AM, Adekeye OA. Counselling services for remediating the biopsychosocial challenges of the aged in Nigeria. J Functional Manage 2011;3(1):89-98.
33. The Federal Republic of Nigeria. Constitution of the Federal Republic of Nigeria 1999. Available at http://www.nigeria-law.org/ConstitutionOfTheFederalRepublicOfNigeria.htm [Assessed 13 January 2017].
34. Aiyede E, Sha P, Haruna B, Olutayo A, Ogunkola E, Best E. The political economy of social protection policy uptake in Nigeria. Partnership for African Social and Governance Research Working Paper 002, 2015 Available at http://www.pasgr.org/wp-content/uploads/2016/08/The-Political-Economy-of-Social-Protection-Policy-Uptake-in-Nigeria.pdf [Assessed 24 January 2017].
35. World Health Organization. World report on ageing and health. Geneva: World Health Organization, 2015. Available at http://apps.who.int/iris/bitstream/handle/10665/186463/9789240694811_eng.pdf [Accessed 3 February 2018]
36. Rodriguez-Pinzon D, Martin C. The international human rights status of elderly persons. Am Univ Int Law Rev 2002;18: 915-1008.
37. Human Rights Council, Advisory Committee. The Necessity of Human Rights Approach and Effective United Nations Mechanism for Human Rights of Older People, Working paper, Human Rights Council Advisory Committee, 2010. Available at http://www.ohchr.org/EN/HRBodies/HRC/AdvisoryCommittee/Session4/Pages/Index.aspx [Accessed 5 March 2018].
38. Araromi, M.A. Protecting the Rights of Old People in Nigeria: Towards a Legal Reform. J Law, Policy Globalizn 2015;40:131-43.
39. Grant MJ, Booth A. A typology of reviews: an analysis of 14 review types and associated methodologies. Health Inform Lib J 2009;26(2):91-108.
40. Green BN, Johnson CD, Adams A. Writing narrative literature reviews for peer-reviewed journals: secrets of the trade. J Chiropr Med 2006;5(3):101-17.
41. Ferrari R. Writing narrative style literature reviews. Medical Writing 2015;24(4):230-5.

****

Acknowledgements – Nil
Source of Funding – Nil
Conflict of Interest – Nil

Original Research Paper

Ethical aspects of paper publication: An observational survey among PG residents

Rohit Sane[1], Pradeep R Jadhav[2], Siddharth Dubhashi[3], Noopur Vyas[1], Jigar Bhatt[1], Indu Slathia[1]

[1]Tutor, Department of Pharmacology, MGM Medical College & Hospital, Navi Mumbai.
[2]Associate Professor, Department of Pharmacology, MGM Medical College & Hospital, Navi Mumbai.
[3]Professor and Head, Department of Surgery, MGM Medical College & Hospital, Navi Mumbai.
Corresponding Author: Rohit Sane
E-mail: rohitsane7@hotmail.com

ABSTRACT

Background: A well-made research is a cumbersome process. The submission of a research article for publication is the final stage of long planning, execution, analysis, and final preparation of the research document. Concerns have been raised about the gradual decline of ethical principles that guide scientific research as well as writing and publication. Postgraduate residents (PG) are in their interim phase of education, research and practice. MCI guidelines has made mandatory for PG's to pursue research as a part of academic requirement. There exists paucity in literature on the ethical aspects of publication among PG residents. To assess the level of understanding of PG residents with respect to the ethical norms of paper publication.
Methodology: A cross-sectional, observational questionnaire survey was conducted among PG's pursuing education at a tertiary care teaching hospital, Navi-Mumbai. A total of 60 PG's were included. The questionnaire included aspects of ethics, authorship, conflict of interest, plagiarism, simultaneous submission and salami slicing.
Result: Majority of the PG residents were involved in research and published research paper. Majority (83.33%) followed ICMR guidelines for publication. The correct criteria for authorship were known to only 5%. A large fraction knew what conflict of interest (68.3%) and plagiarism (86.6) meant. The terms simultaneous publication (35%), duplicate publication (31.6%) and salami slicing (26.6%) were poorly known.
Conclusion: The overall ethical understanding of PG residents with respect to paper publication was low. Further, structured CME/workshop on ethics and paper publications need to be planned to reduce the knowledge gap.

Key words: Postgraduate, ethics, publication, awareness, plagiarism, knowledge.

INTRODUCTION

Ethics taken from the Greek word 'ethikos,' is defined as a set of principles or a system of right conduct. From a medical or research point of view, the ethical conduct is important as it directly affect the humanity [1]. The ever-growing medical science pools scientific evidences, in it on a daily basis. A well-made research is a cumbersome process. The submission of a research article for publication is the final stage of long planning, execution of research, tedious analysis, and final preparation of the document [2].
Research misconduct is defined by the Royal College of Physicians of Edinburgh, "as any behavior by a researcher, whether intentional or not, that fails to scrupulously respect high scientific and

ethical standards [3-4]. Various types of research misconduct include the following; fabrication or falsification of data, plagiarism, problematic data presentation or analysis, failure to obtain ethical approval by the Research Ethics Committee or to obtain the subject's informed consent, inappropriate claims of authorship, duplicate publication, and undisclosed conflict of interest [1,5]. Over the years, there has been a gradual decline of ethical principles that guide scientific research as well as writing and publication. A growing commercialization of research with its effects on the ethical conduct of researchers and the advancement of scientific knowledge are of concern today and need serious thought [1]. The misconduct in research and publication not only affects other authors, but reviewers and editors along with the patient and the scientific community [1].

The World Association of Medical Editors (WAME) has laid guidelines on the publication ethics policies for medical journals and authors on various issues such as study design and ethics, authorship, peer review, editorial decisions and plagiarism [5]. Postgraduate residents are in their interim phase of education, research and specialty clinical practice. Recent Medical Council of India (MCI) guidelines has not only made mandatory for all PG's to pursue research as a part of academic requirement, in the form of dissertation but also to engage in research activities and publish their researches in medical journals [6].

There exists paucity in literature on the ethical aspects of publication among PG residents in India therefore; our study aims to find the level of understanding of an ethically sound research paper publication and ethical norms to a PG resident.

METHODOLOGY

This study was a prospective, cross-sectional, observational, questionnaire-based survey. The study was conducted at a Tertiary care teaching medical college & hospital in Navi-Mumbai and had a study period of 3 months. Permission of the Institutional Ethics Committee (IEC) was taken. An informed written consent was taken from each participant before being included in the study.

The study included PG residents currently pursuing MD/MS course, irrespective of age, sex or specialty. Non-PG residents, participants below the age of 18 years and those not willing for informed consent were excluded from the study.

The survey tool was a predesigned, pretested and structured questionnaire, which assessed the participants understanding on issues of Ethics, Authorship, Conflict of Interest, Plagiarism, Simultaneous submission and Salami slicing. Individual participants were approached and their responses to the study questionnaire were assessed. Data obtained was entered in MS-Excel 2010 and analysed. Numerical data was summarized using Mean and Standard Deviation. Categorical data was expressed using percentage.

RESULT

A total of sixty PG's participated in the study. Out of the total, 48.3% were males (29) and 51.7% were females (31). The male: female ratio was 0.94. The mean age of study participants was 27.27 $\pm$ 2.6 years.

Out of the total participants, 96.67% were undergoing research activity, as a part of Dissertation (70%) or non-dissertation related (26.67%). Out of them 48.33% were publishing papers, as a part of dissertation, non-dissertation or both.

In the Ethics section, majority (83.33%) participants followed ICMR guidelines for research studies. Majority obtained IEC approval prior to commencement of study. Very few presented at conferences (8.3%) or published in journals (6.67%) without IEC.

In the Authorship section, 58.33% were aware of the authorship criteria but only 5% had correct knowledge of it. Majority knew that Ghost authorship and Guest /Gift authorships were ethically wrong. In the Conflict of Interest section, 68.33% were aware and only 41.67% had correct knowledge of it.

In the Plagiarism section, 86.67% were aware of plagiarism and 76.65% had correct knowledge of it. Few knew that substantial copying; text recycling and paraphrasing contributed towards plagiarism and was ethically wrong.

In the Simultaneous and Duplicate Publication section, 35% & 31.67% respectively were aware whereas only 31.67% & 20% respectively had correct knowledge of it.
Around 26% were aware and had correct knowledge of Salami Slicing. Majority rated their knowledge and research skills as average (5.4 out of 10) for publication.

DISCUSSION

The key findings of this study signify gaps in the knowledge of PG's regarding ethical aspects of paper publications. Ethical breaches can be intentional or can arise simply out of ignorance or lack of adequate knowledge [2]. The gradual decline of ethical principles that guide scientific research as well as writing and publication is a rising issue. The misconduct in research and publication not only affects other authors, but reviewers and editors along with the patient and the scientific community [1]. In this pilot study, an attempt has been made to study the level of understanding of PG's on ethical aspects of research paper publication and ethical norms. In this study, majority of the PG's were undergoing research activities, either in the form of their thesis or other individual research. Around equal number of participants were involved in the process of publishing papers. In the Ethics section, we observed that majority PG's followed ICMR guidelines for research studies. We also observed that majority obtained IEC approval prior to commencement of their studies. Such ethical and correct practices according, to the World Association of Medical Editors (WAME) and the Indian Council of Medical Research (ICMR), were followed correctly by majority of the PG's. However 6.67% published papers in journals without IEC. This amounts to scientific misconduct as many depend on medical journal and papers for the newer trends and treatment modalities of diseases. The readers of these papers get improper information, scientific flawed research and compromise their skills in treating aliments. Following proper procedures and getting proper IEC approvals eliminates these issues as the committee approves these research studies, on the basis of scientific and ethical aspects, which indirectly help humanity acquiring proper robust information.

In this study, majority PG's lacked sufficient knowledge of the Authorship criteria's. However, majority knew that Ghost authorship, Guest and Gift authorships were ethically wrong. It was similarly reported by Rennie D, et. al., where they found the knowledge of authorship to be inadequate and the criteria's to be termed author were unfulfilled [7]. The submission of a research article for publication is the final stage of long planning, execution of research, tedious analysis, and final preparation of the document [2]. Thus, authors who put in so much of efforts to make one piece of article should rightfully deserve credit for their efforts, contribution and participation. If not given, then disputes can be raised amongst the authors leading to rivalry and bitterness. Now days, to get a publication under your name is considered a academic status symbol and people come up with newer and newer ways to get, more and more publications under their belts. This again increases the pool of medical articles leading to loss of space, time of the reviewers and loss of humanity in all. In order to restrict such unethical issues, one needs to set clear expectations and contributions of individual authors from the outset. Goals should be established before commencement of the study and a broader picture of the research should be kept in mind.
Conflict of interest is crucial in a non-bias publication. Majority PG's were aware of conflict of interest and only less than half had correct knowledge of it. There are two types of conflict of interests; i.e. direct & indirect [8]. Direct comprises of employment, stock ownership, grants, patents, etc. Whereas indirect comprises of honoraria, mutual fund ownerships, paid expert testimonies, etc. Undeclared financial conflicts may seriously undermine the credibility of the journal, the authors, and science itself [8]. Full disclosure about a relationship that could constitute a conflict–even if the person doesn't believe it affects their judgment–should be reported to the institution's ethics group and to the journal editor to which a paper is submitted. All publishers require disclosure in the form of a declaration letter and/or footnote in the manuscript [9]. Thus PG's should be sensitized and made aware of this fact. To minimize such events, one should explicitly state the potential conflict of interest, declaring the nature of the conflict, source of

funding and its role. This will allow the journal to adequately send to unbiased reviewers and thus minimize bias.
In the Plagiarism section, most of the PG's were correctly aware and had correct knowledge of it. Few knew that substantial copying; text recycling and paraphrasing contributed towards plagiarism and was ethically wrong. One of the most common types of publication misconduct is plagiarism–when one author deliberately uses another's work without permission, credit, or acknowledgment. Plagiarism takes different forms, from literal copying to paraphrasing some else's work and can include: data, words & phrases, ideas & concepts [8]. Plagiarism is easier to commit with the progress in the field of the Internet [10]. Whenever a manuscript is submitted, the editorial teams perform a literature search and most of the time it is possible to detect an already published text, passage. Detection of plagiarism used to be difficult in the past. The web-based data is easier to be detected [10]. Authors should be thus made aware of the consequences of copying another's work. The first author is responsible for any and all misconducts related to the manuscript [1]. The authors should therefore keep track of all the sources while researching and quote them. They should fully acknowledge the source and reference them properly.

Simultaneous submission occurs when a person submits a paper to different publications at the same time, which can result in more than one journal publishing that particular paper [10]. Duplicate/multiple publication occurs when two or more papers, without full cross-reference, share essentially the same hypotheses, data, discussion points, and/or conclusions [11]. This can occur in varying degrees: literal duplication, partial but substantial duplication, or even duplication by paraphrasing [9]. In our study, we observed that majority had poor knowledge on Simultaneous and Duplicate Publication. Authors should submit their manuscript to one journal only. They should not send it to multiple journals in order to increase their chances of having a publication. We also found that knowledge of PG's about Salami slicing was poor. The cutting of research that would form one meaningful paper into several different papers is called salami publication or salami slicing. By making multiple articles from one article increases the pool of medical articles leading to loss of space, time of the reviewers and loss of research credibility.
Currently, MCI has made it mandatory for all PG's to pursue research as a part of academic requirement for MD/MS courses [6]. Thus, structured CME's and workshops are warranted to enhance the research and ethics skill of the PG's. International bodies like WAME, ICMJE and COPE have released guidelines on basic research conduct and research publication [5,8,11]. The PG's to gain an insight on it should refer and adopt these guidelines.
The study had a few limitations. It was a pilot study with a small sample size. The study was conducted at a single tertiary care centre; therefore, the findings cannot be generalized to the whole population. Further studies with larger sample size and multiple setups need to be conducted for a broader picture of the existing knowledge gaps.

CONCLUSIONS

The overall ethical understanding of PG residents with respect to paper publication was low. Further structured CME/Workshops on ethics and paper publications should be planned to reduce the knowledge gap. Thus, paving a way to help them improve their understanding and knowledge in future.

REFERENCES

1. Jain AK. Ethical issues in scientific publication. Indian J Orthopaed 2010;44(3):235-237.
2. Benos DJ, Fabers J, Farmer J, Jessica P, Gutierrez, Hennessy K. Ethics and scientific publication. Adv Physiol Educ 2005;29:59-74.
3. Gilbert FJ, Denison AR. Research misconduct. Clin Radiol 2003;58:499-504.
4. Pitak-Arnnop P, Schouman T, Bertrand JC, Hervé C. Comment éviter la non-conformité de la recherche biomédicale. Recommandations aux chirurgiens. J Chir (Paris) 2008;145:534-41.

5. World Association of Medical Editors. [Cited 2017 October 10]. Available from: http://www.wame.org.
6. Medical Council of India (MCI). Postgraduate Medical Education Regulations. Available from: https://www.mciindia.org/documents/rulesAndRegulations/Postgraduate-Medical-Education-Regulations-2000.pdf.
7. Rennie D, Flanagin A, Yank V. The contributions of authors. JAMA 2000;284:89-91.
8. International Committee of Medical Journal Editors. Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Ethical Considerations in the Conduct & Reporting of Research: Conflict of Interest. [Cited 2017 December 2]. Available from: https://www.icmje.org/conflicts-of-interest/.
9. Elsevier. Ethics in Research & Publication. August 2015. [Cited 2017 October 10]. https://www.publishingcampus.elsevier.com/websites/elsevier_publishingcampus/files/Guides/Brochure_Ethics_2_web.pdf.
10. Fiona G. Plagiarism and punishment. BMJ 2007;335:7627.
11. Committee on Publication Ethics Guidelines on Good Publication Practice. Committee on Publication Ethics (COPE). 1999. [Cited 2017 November 15]. Available from: https://publicationethics.org/files/u7141/1999pdf13.pdf.

****

Acknowledgements – Nil
Source of Funding – Nil
Conflict of Interest – Nil

Original Research Paper

Impact of Bioethics Education in Decision Making on Commercial Surrogacy: A Study with Medical Graduates

Manjeshwar Shrinath Baliga[1], Princy Louis Palatty[2], Paul Simon[2], Prema D'Cunha[2], Bedakai Poornima Ramachandra Bhat[1], Suresh Rao[1], Pratima Rao[1], Devika Gunasheela[3]

[1]Bioethics Education & Research Unit of the UNESCO Chair in Bioethics, at Mangalore Institute of Oncology, Pumpwell, Mangalore, Karnataka, India.
[2]UNESCO Bioethics South India Unit at Father Muller Medical College, Kankanady, Mangalore, Karnataka, India.
[3]Gunasheela Surgical and Maternity Hospital, Dewan Madhava Road, Basavanagudi, Bengaluru, Karnataka.
Corresponding Author : Manjeshwar Shrinath Baliga.
E-mail: msbaliga@gmail.com

ABSTRACT

Obstetrics and Gynaecology (OBG) that deals with the well being, pregnancy and child birth of women is an important component of medical profession. However, the obstetricians constantly face challenging ethical dilemmas. In the recent past commercial surrogacy, a contract in which a woman carries a pregnancy "for "another couple is being preferred by infertile couple. Surrogacy (especially the total surrogacy) is associated with complex ethical questions. The most important issue being as to who is to be considered as the mother, the female who contributes her DNA for the zygote, the lady who gestated the fetus and gave birth to the baby or the woman who ultimately raises the child. The present study ascertained the opinion of medical graduates on various commonly encountered dilemmas situations particularly in commercial surrogacy. A conscious attempt was made to understand the opinion of medical graduates who studied bioethics through a structured module with those who did not study. The results indicated that graduates who had studied bioethics had a better judicious decision than their counterparts who had not learnt ethics in their undergraduate curriculum and support the view that teaching bioethics through structured teaching modules in undergraduate curriculum has benefit.

Key words: obstetrics and gynecology, assisted reproductive techniques, in vitro fertilization surrogacy, transnational surrogacy

INTRODUCTION

Global research indicates that infertility is an important health problem and that nearly 48.5 million couples are childless [1]. From a clinical perspective, a male is considered to be infertile when the individual has less production of motile/normal sperm and/or is unable to depose semen in female genitals (hypospadesis, epispadesis etc), [2-3]; while in women, the lack of ovulation, blocked fallopian tubes, endometriosis or uterine abnormalities, advanced age (over 35 years), anomalies and hormonal disorders [4]. Further, Rh incompatibility between husband and wife, genetic abnormalities, hormonal imbalances, and congenital genital abnormalities and infections also contribute to infertility in both women and men. In addition to the inherent biological factors,

lifestyle factors like obesity, diet, exercise, smoking and alcohol consumption along with exposure to xenobiotic chemicals have been recognized to be modifiers of infertility [2-4].

In most cases the infertile couples who have exhausted all biological methods of procreation seek the help of assisted reproductive techniques (ART) to have a biological child of their own [5]. From a terminological view, ART is defined as the application of laboratory or clinical technology to gametes (human eggs or sperm) and/or embryos for the purpose of reproduction. In this regard depending on the medical condition of the couple, procedures like artificial insemination, in vitro fertilization and surrogate motherhood are considered and implemented in clinics [5]. In most cases, when the male is affected, assisted reproductive technologies include fertilization that may involve the fusion of gametes to give embryos outside the human body and later is transferred into her body [5]. However, in worst case, surrogacy comes as an alternative especially when the infertile woman or couple is not able to reproduce [5].

From a terminological perspective, surrogacy is termed as an arrangement where a substitute woman (mother) carries and delivers a child for another couple or person, who will become the new born child's parent(s) after the birth [6-7]. Depending on the donor of gametes, its origin and surrogate status, it is broadly classified as genetic, total and gestatory surrogacy. In the genetic surrogacy (also known as straight, traditional or partial surrogacy), which is the most commonly performed, the woman is artificially impregnated with the sperms of the intended father thereby making her genetic, gestational and biological mother to the child she carries and gives birth subsequently [5,7]. In total surrogacy the surrogate mother's egg is fertilized with the sperm of a donor (not the male part of the commissioning couple) but with her genes [5,7]. In gestational surrogacy (also called host or full surrogacy), an embryo is created using donor gametes (both sperms and eggs) and is implanted into the uterus of the surrogate mother (who is not genetically linked to the child) through the standard in vitro fertilization techniques [5,7]. The surrogate woman who is now a third party has an embryo resulting from two unrelated donors, carries and delivers the baby for another couple or person [5,7].

From a socio-ethical perspective, depending on the relationship between the commission commissioning couple/s and the surrogate, and the intention of the lady willing to be a surrogate, surrogacy is grouped as altruistic [5,7]. In the altruistic surrogacy arrangement, the surrogate mother offers her womb as an act of selflessness and is not paid for her service by the commissioning couple. In this case, there will often be a pre-established familial or friendship bond between the expecting couple and the surrogate mother (as a friend or a relative) [8-9]. On the contrary in commercial surrogacy, which is more often run by a mediating party or an agency with financial interest, the surrogate mother is unknown to the commissioning couple and receives compensation for carrying and delivering the child [8-9]. The situation is much more complex in transnational surrogacy where the commissioning parent/parents are from a different country and racial identity, and the surrogate from another [10-12].

From an ethical perspective, the use and practice of commercial surrogacy has been highly controversial for its involvement of a surrogate mother who is a third party and in most case is a destitute agreeing only for financial benefits [5,7]. The medical procedures like intake of birth control pills to synchronize the cycles of the commissioning woman and the surrogate, gonadotropin-releasing hormone treatment to prevent premature ovulation, the hormonal manipulation required for preparing the surrogate for implantation, intake of estrogen tablets to thicken the uterine lining prior to implantation, the process of embryo transfer, side effects of hormonal treatment (like hot flushes, fatigue, headaches, nausea, irritability, bloating and breast soreness), the psychological distress, risk of social stigmatization, and the common risks associated with pregnancy and giving birth which in most cases is through caesarian sections takes a toll on the surrogate [11]. Reports also suggest that women undergoing in vitro fertilization (IVF) treatment are at an increased risk of being diagnosed with borderline ovarian tumors and that the risk factors appear different from those for invasive ovarian cancer [13]. Additionally, there are instances where the mediating party or surrogacy agencies have used unethical practice for financial gains and the destitute women have often suffered [14].

India was considered to be a hub of transnational surrogacy where couples/individual came from other countries and parts of the world because of cost factors, well trained doctors and state of the

art facilities to ensure the procedures, ease of communicating in English and plentiful supply of surrogates due to poor economic conditions [15]. However, the transnational surrogacy undertaken by some ART centres were unfair and exploited the vulnerable women [14]. The industry was not regulated, and there was no record on how many times women donate eggs or become surrogates [12]. In lieu of the international and national condemnation on misuse of the destitute women opting to be surrogates, the Government of India instructed clinics not to accept new foreigners as clients in December 2015 [16].

As far as the authors are aware of, from the bioethics point of view, this is the first study that addresses the opinion of medical graduates on surrogacy and to also compare on how the opinion differs between the individuals who were taught bioethics in their undergraduate curriculum through a structured teaching methodology. In our previous study aimed at ascertaining the opinion on contentious issues in obstetrics and gynecology we have observed that 63.75% of the students and 67.34% of the obstetricians considered surrogacy to be unethical [17]. The present study is an extension of our previous endeavours [17] and was carried out to ascertain the medical graduates' opinion on ART and surrogacy in specific. The second objective was to also observe for the effectiveness of a structured bioethics teaching module during their undergraduate program.

METHODOLOGY

This study is a single centre study and was conducted under the aegis of the UNESCO Bioethics South India Unit at Father Muller Medical College, Mangalore, India after obtaining the permission of the Institutional Ethics committee. The questionnaire was designed by the investigators and was developed by a local panel of experts in bioethics, obstetric care and a researcher. Special attention was given for clarity and the inclusion of the full range of response options. The questionnaire was then pilot tested with 10 students, who were not part of the final sample. The respondents of the pilot cohort rated the initial questionnaire for clarity and content validity. Emphasis was placed on the opinion for the comprehension and understanding of the meaning of each question. The final instrument underwent only minor grammatical changes and consisted of four demographic questions and six subject specific questions. As this study was planned to be conducted in postgraduate entrance exam training centers with MBBS graduates, and a pilot study the questionnaire was kept to a bare minimum and answering them took 5 minutes on a three choice scale of "yes, no and unsure".

Study population and survey methods:

The study population consisted of MBBS graduates who had registered for postgraduate entrance exam training centres in Mangalore and was carried out after four months of the government's revised orders from April to May 2016. The investigators approached the medical graduates individually and briefed them about the purpose of the study. As some questions were dilemmatic the volunteers were also requested not to write their names or leave any identification mark on the study questionnaire and were requested to return the filled sheets. Written consent was obtained on a separate sheet from all the participants before the administration of the questionnaire.

Statistical analysis

Data was entered in Microsoft excel and answers on the questions were subjected to a quantitative analysis using the Chi-square test using the SPSS software program version 22 from IBM. A p value of < 0.05 was considered significant.

RESULTS

In this study, a total of 134 medical graduates answered the questionnaires (37 males and 77 female). Of these, 73 students had been taught the basic tenets of bioethics through a structured teaching program in their undergraduate curriculum while the remaining 61 were not. Majority of the graduates were from urban (city and town) background. Majority of the students who were

taught bioethics had read books and had been exposed to programs that dealt with teaching bioethics (P<0.001) and the details are enlisted in table 1. With respect to the comparison on the contentious issues of the 10 questions significance was seen for five, no significance for three and trend for one. The details are all enlisted in Table 2 and 3.

Table 1: Demographic details of the participants

	Response Options	Studied Bioethics N= 73 (Percentage)	Did not study Bioethics N= 61 (Percentage)	P value
Gender	Male	33 (45.20)	24 (39.34)	0.494
	Female	40 (54.79)	37 (60.65)	
Domicile	Rural	11 (15.06)	17 (27.87)	0.378
	Town	32 (43.83)	26 (42.62)	
	City	30 (41.09)	28 (45.90)	
Have you read books in ethics?	Yes	51 (69.86)	5 (8.19)	0.0001
	No	22 (30.13)	56 (91.80)	
Did you attend any programs in ethics?	Yes	70 (95.89)	7 (11.47)	0.0001
	No	3 (4.11)	54 (88.52)	

Table 2: Response of medical students to students on various aspects of surrogacy

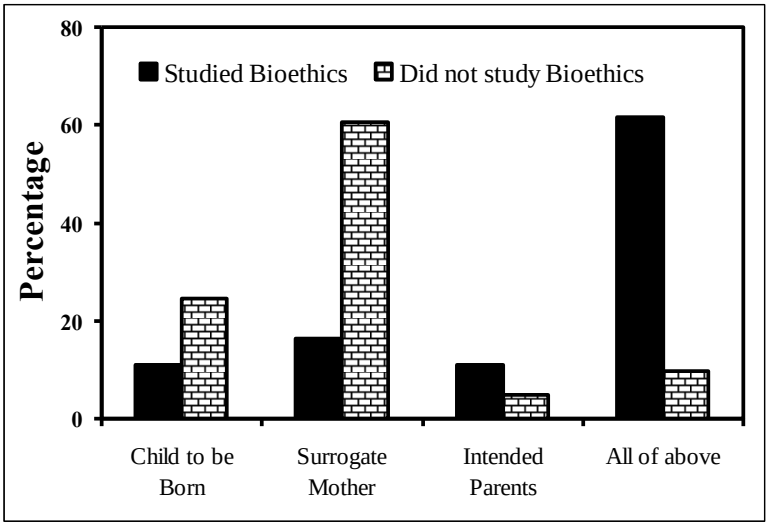
	Response Options	**Studied Bioethics N= 73 (Percentage)**	**Did not study Bioethics N= 61 (Percentage)**	**P value**
Do you consider modern assisted reproductive technologies like IVF ethical?	Yes	51 (69.86)	54 (78.68)	0.443
	No	7 (9.58)	3 (4.92)	
	Unsure	15 (20.55)	4 (16.39)	
Commercial surrogacy is a boon for Infertile Couples	Yes	16 (21.92)	48 (78.68)	0.0001
	No	30 (41.09)	3 (4.92)	
	Unsure	24 (32.87)	10 (16.39)	
Transnational surrogacy should be allowed in India?	Yes	3 (4.23)	15 (21.13)	0.0001
	No	58 (81.69)	13 (18.31)	
	Unsure	12 (16.9)	33 (46.48)	

Commercial surrogacy for single parent and same-sex couples is not correct	Yes	72 (98.63)	57 (93.44)	0.060
	No	0 (0)	0 (0)	
	Unsure	1 (1.37)	5 (8.19)	
Transnational surrogacy is exploitation of poor women in third world countries?	Yes	59 (83.1)	30 (42.25)	0.0001 Significant
	No	2 (2.82)	18 (25.35)	
	Unsure	12 (16.9)	14 (19.72)	

Table 3: Rating of medical student's opinion regarding best interest of the people involved in surrogacy

	Rating of students	
	Studied Bioethics N= 73 (Percentage)	**Did not study Bioethics N= 61 (Percentage)**
Child to be Born	8 (10.95)	15 (24.59)
Surrogate Mother	12 (16.43)	37 (60.65)
Intended Parents	8 (10.95)	3 (4.92)
All of above	45 (61.64)	6 (9.84)

Figure 1: Rating of medical student's opinion regarding best interest of the people involved in surrogacy



DISCUSSION

In the recent past, when compared to the altruistic surrogacy, commercial surrogacy has sprung up myriad ethical issues. This is principally because the surrogate mother is unknown to the commissioning couple, is mostly from a poor financial background, has been possibly lured to surrogacy and is opting for the pregnancy for financial reasons [8-9]. Globally one school of thought views commercial surrogacy to be an exploitation of a poor woman desperately needing financial benefits, is like prostitution, is a form of alienated labour, turns babies into commodities is for the wealthy only, exploiting third world women as baby machines and that adoption is better for the world [18-19]. While the support views include statements that surrogacy fulfils the deep-seated wish for a family, adoption is not that easy, surrogate mothers are conscious of their choice, it is beneficial in empowering the destitute women and to be of benefit to the childless couple [18-19].

In the present study it was observed that students in both the groups agreed that modern ART like IVF was ethical. The process of artificial Insemination and in-vitro fertilization in the righteous way does not include any major ethical conflicts and the approval of most students is based on this tenet. Literature study conform the approval of IVF and the seminal studies by Herrera and co-workers (2013) validate this. In this random representative sampling studies with 1.500 people between the ages of 18 and 65 in the 34 municipalities of Santiago the investigators observed that nearly 85% of respondents support the use of medical assistance to conceive children and that there was a wide approval for the use of IVF for young women but not for elderly woman [20].

With respect to the questions on whether commercial surrogacy is a boon for infertile couples and transnational surrogacy should be allowed in India, many graduates who had studied bioethics said no and this difference was statistically significant ($P<0.0001$) when compared with the graduates who had not studied bioethics. This difference in the answer option is possibly because the graduates who were taught bioethics had knowledge on the subject and also on how it affects the parties involved when the ethics were not followed and adhered to. To support our statement previous studies with students of midwifery, medicine, psychology and law in Iran have shown that these volunteers had a positive attitude towards surrogacy [21] and it is quite possible that the student did not have exposure to bioethics teaching. Additionally, recent reports that the Swedish healthcare professionals have a positive attitude towards surrogacy but the health of the child is a concern also need to be considered [22].

An important observation of this study was that both the cohorts overwhelmingly agreed that commercial surrogacy for single parent and gay couples was not correct. The possible reason for this is that the medical graduates understand the importance of both parents in the upbringing of a child and their role in the growth of the child. These observations are in agreement to the reports of Herrera and co-workers (2013) [20], who have also reported that the Chilean people were not in favour of surrogacy in same-sex couples.

With regard to the question of transnational surrogacy being exploitation of poor women in third world countries, when compared with the graduates who had not studied bioethics the graduates who had studied bioethics said yes (83.1 vs 42.25) and this difference was statistically significant ($p<0.0001$). This difference in the option is possibly because the graduates who were taught bioethics were aware that in transnational surrogacy there have been instances where the surrogacy agencies adopted unethical practice for financial gains and that the surrogate was invariable affected [14].

The most important observation of this study was with the observations on the rating of the medical student's opinion regarding best interest of the people involved in surrogacy. The results indicated that when compared with the graduates who had not studied bioethics majority of the graduates who had studied bioethics rated all of the above (61.64 vs 9.84) as first choice while the graduates who had not studied bioethics had surrogate mother (16.43 vs 60.65) as the choice 1 (Table 3; Figure 1). While majority of the data indicate that the surrogate goes through a lot of stress, there are reports which clearly indicate that the commissioning couple also go through anxiety and stress. The couples had considered surrogacy only after a long period of infertility or when it was the only option available and are keen for the baby [23,24]. While this was not evident

in the thoughts of the graduates who had not studied bioethics, where most emphasized on the surrogate mother.

CONCLUSIONS

The most important observation of this pilot study was that the graduates who had studied bioethics had a better judicious decision than their counterparts who had not learnt ethics in their undergraduate curriculum. These observations clearly indicate the usefulness of teaching bioethics in the undergraduate curriculum and needs to be supported. The biggest drawback of this study was that this was done with a small sample of graduates (134) and a single centre. Multicentre studies are warranted to ascertain the opinion of healthcare fraternity on the ethics of commercial surrogacy as this topic is of importance to both medical sciences and the common man.

REFERENCES

1. Mascarenhas MN, Flaxman SR, Boerma T, Vanderpoel S, Stevens GA. National, regional, and global trends in infertility prevalence since 1990: a systematic analysis of 277 health surveys. PLoS Med 2012;9(12):e1001356.
2. Ayaz K, Miah MT, Ahasan HN, Raihan MR, Islam MA, et al. Male infertility-A review. J Medicine 2012;13:190-9.
3. Kumar N, Singh AK. Trends of male factor infertility, an important cause of infertility: A review of literature. J Hum Reprod Sci 2015;8(4):191-7.
4. Sudha G, Reddy KS. Causes of female infertility: a cross sectional study. International Journal of Latest Research in Science and Technology 2013;2(6):119-23.
5. Chaudhary BL. Assisted reproductive techniques ethical and legal issues. J Indian Acad Forensic Med 2012;34(4):350-4.
6. Warnock M. Report of the Inquiry into Human Fertilisation and Embryology Cm 2014.
7. Saxena P, Mishra A, Malik S. Surrogacy: ethical and legal issues. Indian J Commun Med 2012;37(4):211-9.
8. Ber R. Ethical issues in gestational surrogacy. Theoret Med Bioethics 2000;21(2):153-69.
9. Brinsden PR. Gestational surrogacy. Hum Reprod Update 2003;9(5):483-91.
10. Shetty P. India's unregulated surrogacy industry. Lancet 2012;10;380(9854):1633-4.
11. Kirby J. Transnational gestational surrogacy: Does it have to be exploitative?. Am J Bioethics 2014;14(5):24-32.
12. Mercuri J. How Transnational Surrogacy Challenges Ideas of Parenthood and Race. 2016. Available from: https://news.fordham.edu/politics-and-society/transnational-surrogacy-challenges-ideas-of-parenthood-race/
13. Stewart LM, Holman CD, Finn JC, Preen DB, Hart R. In vitro fertilization is associated with an increased risk of borderline ovarian tumors. Gynecol Oncol 2013;129(2):372-6.
14. Cook M. Survey of Indian surrogacy reveals shocking abuses. BioEdge Bioethics news from around the world. 2013. Available from: http://www.bioedge.org/bioethics/survey_of_indian_surrogacy_reveals_shocking_abuses/
15. Rozée Gomez V, Unisa S. Surrogacy as a growing practice and a controversial reality in India: exploring new issues for further researches. J Wom Health Issues Care 2015;4.
16. Sherwell P. India to ban foreign couples paying local surrogates to have their babies. The Telegraph. October 28, 2015. Available from: http://www.telegraph.co.uk/news/worldnews/asia/india/11961442/India-to-ban-foreign-couplespaying-local-surrogates-to-have-their-babies.html
17. Palatty PL, D'Cunha P, Colin MD, Soans KM, Bhat BPR, Gunasheela D, Baliga MS. Opinion on contentious issues in Obstetrics: comparison between Obstetricians and novice undergraduate students in Mangalore, India. Global Bioethics Enquiry 2016;4(2):31-5.
18. Coste B. The Ethics of Surrogacy: A List of the Pros and Cons of Surrogacy. Available from: https://www.positive-parenting-ally.com/ethics-of-surrogacy.html; 2017
19. Arvidsson A, Vauquline P, Johnsdotter S, Essén B. Surrogate mother - praiseworthy or stigmatized: a qualitative study on perceptions of surrogacy in Assam, India. Glob Health Action 2017;10:1328890.

20. Herrera F, Teitelbom B, Russo M, Salas SP, Zegers Hochschild F. [Opinion survey on the use of assisted reproductive technologies applied to inhabitants of Santiago, Chile]. Rev Med Chil 2013;141(7):853-60.
21. Salehi K, Shakour M, Pashaei Sabet F, Alizadeh S. The opinion of Iranian students about the society's perception on using surrogacy as an infertility treatment in the future community. Sex Reprod Health 2015;6:19-22.
22. Armuand G, Lampic C, Skoog-Svanberg A, Wånggren K, Sydsjö G. Survey shows that Swedish healthcare professionals have a positive attitude towards surrogacy but the health of the child is a concern. Acta Paediatr 2017;14041.
23. MacCallum F, Lycett E, Murray C, Jadva V, Golombok S. Surrogacy: the experience of commissioning couples. Hum Reprod. 2003;18(6):1334-42.
24. Papaligoura Z, Papadatou D, Bellali T. Surrogacy: The experience of Greek commissioning women. Women and Birth 2015;28(4):e110-8.

****

Acknowledgements - The authors are grateful to all the medical graduates for volunteering to be a part of the study
Source of Funding – Nil
Conflict of Interest – Nil

Ethical Viewpoint Paper

The Cadaver as our first Teacher

A. Donna Ropmay

Associate Professor, Department of Forensic medicine, North Eastern Indira Gandhi Regional Institute of Health and Medical Sciences, Meghalaya.
Corresponding Author: Dr.A.Donna Ropmay
E-mail: drdonna@rediffmail.com

ABSTRACT

The present paper looks at the cadavers being a potential and important means of learning for medical students. The word 'cadaver' is derived from the Latin '*cadere*' meaning 'to fall', referring to soldiers who died in battle. Therefore, a cadaver is a dead human body used in scientific or medical research. Anatomical dissection is a time-honored part of medical education dating back to the 3rd century BC in Greece.

Key words: cadaver, teaching, medical education.

The journey of a thousand miles begins with the first step, and for me stepping through the hallowed portals of a prestigious medical school way down in southern India was more of disillusionment than enlightenment. During the initial days spent in the anatomy dissection hall, I was shocked to find naked and desiccated bodies of dead human beings. Even though I'm not fainthearted by nature, I felt weak at the knees at the sight around me and the overpowering smell of formalin that filled my nostrils. I stood at a distance from the demonstration table, hesitant to watch and leave alone touch the mummified corpse in front of me. However, as time passed and I delved deeper into the subject of anatomy, I couldn't help but marvel at the wonder and intricacies of the human body with a sense of awe and mystery. I then looked forward to each session with the cadaver to unravel the hitherto unknown secrets of our very form and feature.

The word 'cadaver' is derived from the Latin '*cadere*' meaning 'to fall', referring to soldiers who died in battle. Therefore, a cadaver is a dead human body used in scientific or medical research. The term 'dissect' is also derived from Latin '*dissecare*' and means 'to cut apart' or 'to separate into pieces' [1]. It refers to dismembering the body of a deceased animal, plant or human to study its anatomical structure. Anatomical dissection is a time-honored part of medical education dating back to the 3rd century BC in Greece. There was a dark period in history when dissection was illegal and offensive to the public. But through the years the practice has gained acceptance worldwide as an indispensable tool for teaching and learning medicine. In the 15th and 16th centuries AD, artists like Leonardo da Vinci and Michelangelo would actually watch live dissections to get a three-dimensional view of the human body which they portrayed in their paintings. During this period, religious authorities in Europe who had earlier disapproved of the practice, began to show a gradual change in their attitude towards cadaveric dissection albeit strictly within the boundaries of European universities [2].

Human cadavers have multiples roles within the context of medical training. A hands-on experience by medical students is a must to know the feel of human tissues and organs, the relationship between structures and the concept of innumerable variations within the body. Aspiring surgeons can practice on patients who don't feel pain enabling them to master a surgical skill or procedure without harming anyone. Dentists dissect their heads while physical therapists study the musculoskeletal system [3]. However, cadavers are much more than specimens or dummy patients. The greatest role of a cadaver, which students often overlook, is that of a teacher. In Thailand, a cadaver in the anatomy laboratory is accorded the revered status of '*ajarn yai*' or 'great teacher'. There is an attitude of reverence by the students for their highly esteemed teacher as they attribute a social role and position to him/her. He/she is treated as a person and not merely an object [4]. At a college in Mumbai, the cadaveric oath is administered to first year medical undergraduates who pledge to honor the dignity and integrity of the human remains that they are about to work on [5]. On the other hand, trainees at St. John's Medical College start their anatomy dissection classes with a prayer to thank the Almighty for giving them a body to learn from [6]. Anatomy memorial services are held in Mayo Medical College, Rochester, USA to enable students to reflect on the life of the departed souls who facilitated their education [7].

The Johns Hopkins Medical School magazine [8] has this to say:

He'll teach you about gross anatomy more than you'll ever learn from books alone.
But he'll also teach you how to care.
How to detach.
How to work as a team.
A sense of curiosity and discovery.

As we routinely go about our duties, we seldom see beyond the immediate mundane tasks that we have to do. We tend to ignore the interests of significant others – both living and deceased. We fail to acknowledge the dead as persons worthy of our time and attention. Let us never forget that every cadaver/corpse is a human anatomical gift without which our teaching and learning experience would be incomplete. In circumstances where bodies have been donated voluntarily for the cause of science, it is all the more appropriate for students to remember that they were once individuals like us with distinctive personalities, thoughts and feelings. That is why it is so very essential to maintain etiquette in the dissection hall and autopsy room at all times. At a university in Taiwan, it is a practice for students to actually visit the families of deceased body donors to express their gratitude for their invaluable contribution to medical science [9]. The same dignity and respect bestowed in life should be given to a person in death as well. Cadavers must be covered when they are not being studied. For the purpose of teaching human anatomy, it is advisable to only expose the part which is being taught, for example the upper limb, thorax or lower limb. Entry to the dissection hall is restricted to Faculty, staff and medical students. A dress code is usually followed by students and instructors alike for the sake of hygiene and safety from biological and chemical agents. The use of personal protective equipment such as aprons, mask, gloves and shoe covers are recommended. Caution while handling sharp instruments is advised. Decorum and good conduct is maintained during classes [10]. Medical teachers are expected to show the way by example and being role models to their pupils on ethical behavior.

My experience in the forensic medical field has taught me to view the corpse not just as an aid to death investigation but as the complete human being he or she was when alive. Although I value the information I glean from every dissection, I realize that it is as important to preserve the dignity, integrity and peace of the deceased and his/her close relatives who are mourning the loss of their loved one. Thus, in our department, we try our best to ensure privacy during autopsy and confidentiality of our findings therein. Students are instructed to observe etiquette while postmortem demonstrations are going on. When the examination is done, the body is washed, dressed, draped and handed over to the next of kin through the police after the necessary legal formalities.

CONCLUSIONS

In conclusion, cadavers facilitate a medical student's first exposure to the complexities of the human body. Cadaveric dissection is an essential technique to build up lucid anatomical concepts and relations. The dissection hall provides a direct encounter with the harsh realities of life and death which budding doctors will inevitably face in their future careers. Hence, it is an ideal place to overcome fears and learn how to strike a balance between empathy and detachment in a particular situation. At the end of the day, a physician not only needs sound knowledge and competent skills but also the right attitude to practice one's profession with conscience and dignity. To quote a Latin proverb:

"Let conversation cease. Let laughter flee.
This is the place where death delights to help the living."

REFERENCES

1. Merriam-Webster I. Merriam-Webster's collegiate dictionary. Springfield: Merriam-Webster; 2003.
2. Ghosh SK. Human cadaveric dissection: a historical account from ancient Greece to the modern era. Anat Cell Biol 2015;48(3):153-69.
3. McCall M. The Secret Lives of Cadavers. National Geographic. July 2016. Available from: https://news.nationalgeographic.com/2016/07/body-donation-cadavers-anatomy-medical-education/.
4. Winkelmann A, Güldner FH. Cadavers as teachers: the dissecting room experience in Thailand. BMJ 2004;329(7480):1455-7.
5. Sawant SP, Shaikh S, De Sousa A. Cadaveric Oath in Anatomy – an integral aspect of bioethics training (Brief Report). Global Bioethics Enquiry 2016;4:64-6.
6. Sheriff DS, Sheriff O. The human cadaver: the silent teacher of human anatomy. Indian J Med Ethics. 2010;7:266-8.
7. Wojciech P, Hammer RR, Strauss JD, Heath SG, Zhao KD, Sahota S et al. The Hand That Gives the Rose. Mayo Clin Proc 2011;86(2):139-144.
8. Der Bedrosian J. First-year medical students still rely on cadavers to learn anatomy. John Hopkins Magazine. 2016. Available from: https://hub.jhu.edu/magazine/2016/winter/cadavers-anatomy-medical-school/.
9. Kanter SL. A Silent Mentor. Acad Med 2010;85(3):389.
10. Shaikh ST. Cadaver dissection in anatomy: the ethical aspect. Anat Physiol 2015;1:S5-7.

****

Acknowledgements – I'd like to express my gratitude to Dr. Yookarin Khonglah, Associate Professor of Pathology and Member Secretary, Medical Education Unit, for giving me the opportunity to speak on this topic at the Orientation Programme for MBBS students in October 2017 at NEIGRIHMS, Shillong.

Source of Funding – Nil
Conflict of Interest – Nil

Poem

A Patient's Plea

Bhanu Bhardwaj

Assistant Professor, Department of E.N.T., SGRD University of Health Sciences, Amritsar.

O' My Doctor,
Listen to my story,
Please don't be in a hurry
I am in Pain,
I am Suffering
Give me some relief,
Even if I can pay you only LITTLE FEES
Feel the agony in my tone,
Oh! Please don't look at that phone!
Touch me gently to know the cause and Diagnose,
Please don't just sit and prescribe the dose!
Tell me the tests I will get them done
Please ensure that they are not a TON!!
With a heart and soul to this body
Please don't treat me like a "NOBODY"!
Though I am in a sad plight
All I ask is that it's my body, my pride
Before intervening let me decide, it's my right!!
I crave your attention and good intent,
Explain me honestly I will give the consent!
I am vulnerable,
In some trouble,
Show me compassion and quality care,
Be competent, committed and fair,
I promise I will give you back your GODLY Chair!
Let this corporate culture
Not come between me and you,
Let it be again about healing that's pure and true!
Listen Listen my doctor I am telling you my story
I will be gone,
You will be gone,
So please pass on these high MORAL ETHICS OF BIOSCIENCE !

****

Acknowledgements – Nil
Source of Funding – Nil
Conflict of Interest – Nil

Scope of the Journal & Instructions to the Authors

Global Bioethics Enquiry is a journal of the UNESCO Chair in Bioethics and publishes reviews, original research papers, commentaries and case studies related to all issues in the field of Bioethics. Original viewpoints and narratives as well as poems in the field of bioethics are welcome. The journal also has a student section where articles in the field of bioethics written by undergraduate and post graduate students are considered.

THE EDITORIAL PROCESS

The manuscripts received shall be peer reviewed for possible publication with the understanding that they are being submitted to only this journal and not simultaneously submitted or accepted for publication elsewhere. The Editors shall review all submitted manuscripts initially. Manuscripts with scientific flaws or vague research designs may often be rejected. The journal will not return any unaccepted manuscripts. The reviewers shall review all papers in a blind review and convey their decision to the Editors. Within a period of 8-12 weeks, the contributors shall receive comments, need for corrections and notice regarding acceptance or rejection of the manuscript. Other journals appropriate for the paper may be suggested in some cases of rejection. Articles accepted would be copy edited for grammar, punctuation, print style, and proofs for correction shall be sent to the author prior to publication. Authors will be asked to sign a copyright form and undertaking for plagiarism in case of accepted manuscripts. Only upon receipt of corrected proofs from the authors and completion of all form required, will a paper be published in the journal.

TYPES OF ARTICLES

- **Original Research Papers or Article:** These papers should only include original research findings from planned research studies such as case–control series, surveys with high response rates, randomized controlled trials and treatment based intervention studies. Meta analyses shall be included in this section. The word limit is 6000 words excluding references and an abstract (structured format) of not more than 250 words with 4-6 key words.
- **Case Reports:** These should contain reports of new, interesting or rare cases of clinical significance or with implications for management. It could also include case reports where novel management methods were used. It has a word count of 1500 words with up to 15 references and an abstract of not more than 150 words.
- **Review Papers**: These are systematic and critical assessments of the literature which will be invited. Authors wishing to submit a review paper will have to contact the editor and seek permission for submission of the review. Only after permission has been sought will the article be accepted for peer review. The review article has a word limit of 8000 words and must be state of the art in every respect. Only invited reviews will be published. However exceptionally interesting topics even if uninvited when submitted may be considered.
- **Personal Subject Related Viewpoint:** These should be experience-based views and opinions on controversial issues that affect the profession. They could also be part of clinical problems that confront people in routine practice. The author should have sufficient experience or must have some unique personal experience based on the subject being considered. The word limit is 2500 words.

- **Announcements:** Information regarding conferences, meetings, courses, awards and other items likely to be of interest to readers should be submitted with the name and address of the person from whom additional information can be obtained (up to 200 words).
- **Book or Movie Review:** Exceptionally readable and good books and movies or documentaries which shall be academic and otherwise in the field of mental health shall be considered in this section. The word limit shall be 1500 words.
- **Poems:** Poems related to various themes in bioethics and allied sciences shall be considered based on their merit for this section.
- The journal is in evolution and newer concepts shall be considered from time to time.

SUBMISSION OF PAPERS

Send soft copy of the manuscript along with a covering letter in Microsoft Word 2007 or 2010. Name and designation of all authors with designation and name of the corresponding author must be mentioned. Copies of any permission(s) to reproduce published material, and to use illustrations or report information about identifiable people must accompany the manuscript.

All the manuscripts should be submitted via e-mail to the editor at email – russell.f.dsouza@gmail.com or avinashdes888@gmail.com
For online submission articles should be prepared in two files (first page file and article file). Images should be submitted separately.

First Page File: Prepare the title page, covering letter, acknowledgement, etc. using a word processor program. All information which can reveal your identity should be here. Use doc/pdf files. Please do not zip the files.

Article file: The main text of the article, beginning from Abstract till References (including tables) should be in this file. Do not include any information (such as acknowledgement, your names in page headers, etc.) in this file. Use doc/pdf files. Do not zip the files. Limit the file size to 400 kb. Do not incorporate images in the file. If file size is large, graphs can be submitted as images separately without incorporating them in the article file to reduce the size of the file.

Images and Tables: Submit good quality colour images. Each image should be less than 400 kb in size. Size of the image can be reduced by decreasing the actual height and width of the images (keep up to 800 pixels or 4 inches). All image formats (jpeg, tiff, gif, bmp, png, eps, etc.) are acceptable; jpeg is most suitable. Do not zip the files. All tables, figures and images must be duly labelled.

Copyright and Contributor's form: If the manuscript is submitted online, the contributors' form and copyright transfer form has to be submitted in original with the signatures of all the contributors within two weeks from submission. The scanned copyright form can also be submitted via e mail.

PREPARATION OF THE RESEARCH PAPER (MANUSCRIPT)

Please use A4 size (212 × 297 mm) on Microsoft Word, with margins of 1 inch from all the four sides. If sending a hard copy, type or print on only one side of the paper. Use double spacing throughout. Number pages consecutively, beginning with the title page. The language should be British English or American English.

Language

For all purposes the journal shall follow the language pattern of American English.

Title Page

1. Type of manuscript (Original/Review/Case etc)
2. The title of the article, which should be concise, but informative;
3. Running title or short title not more than 50 characters;
4. The name by which each contributor is known with institutional affiliation;
5. The name of the department(s) and institution(s) to which the work should be attributed;
6. The name, address, phone numbers, facsimile numbers and e-mail address of the contributor responsible for correspondence;
7. The total number of pages, photographs and word counts separately for abstract and for the text (excluding the references and abstract).
8. Acknowledgements: Specify contributions that need acknowledging but do not justify authorship, such as general support by a departmental chair and acknowledgments of technical, financial and material support. Also mention financial grants received or conflict of interest if any.
9. If the manuscript was presented as part at a meeting, the organisation, place, and exact date on which it was read along with mention of any award it may have received.

Abstract Page

The second page should carry the full title of the manuscript and an abstract (no more than the number of words already specified). For abstract we follow an unstructured abstract format that should not exceed 250 words. Below the abstract should provide 3 to 6 key words.

Text of the article

State the purpose of the article and summarize the rationale for the study or observation in Introduction. For case reports give incidence of similar cases in past. Describe the selection of the observational or experimental subjects clearly in Patients and Methods section. Identify the age, sex, and other important characteristics of the subjects. Identify the methods, apparatus (give the manufacturer's name and address in parentheses), and procedures in sufficient detail. Give references to established methods, describe new or substantially modified methods, give reasons for using them, and evaluate their limitations. Identify precisely all drugs and chemicals used, including generic name(s), dose(s), and route(s) of administration. Reports of randomised clinical trials should be based on the **CONSORT statement** (http://www.consort-statement.org).

When reporting experiments on human subjects, procedures followed should be in accordance with the standards ethical committee on human experimentation and with the Helsinki Declaration of 1975, as revised in 2000 (http://www.wma.net/e/policy/17-c_e.html). Do not use patients' names, initials, or hospital numbers, especially in illustrative material. Present the results in logical sequence in the text, tables, and illustrations. Do not repeat in the text all the data in the tables or illustrations; emphasise or summarise only important observations. Use standard guidelines for statistics (See Ann Intern Med 1988;108:266-73).

Emphasize the new and important aspects of the study and the conclusions that follow from them along with implications of the findings and their limitations in the Discussion section.

References

References should be numbered consecutively in the order in which they are first mentioned in the text. Identify references in text, tables, and legends by Arabic numerals in brackets (). References cited only in tables or figure legends should be numbered in accordance with the sequence established by the first identification in the text of the particular table or figure. The titles of journals should be abbreviated according to the style used in Index Medicus. Avoid using abstracts, unpublished observations, and personal communication as references. Please refer http://www.icmje.org for other types of references such as electronic media, newspaper items, etc.

1. Standard journal article: Seshadri L, George SS, Vasudevan B, Krishna S. Cervical intraepithelial neoplasia and human papilloma virus infection in renal transplant recipients. Indian J Cancer 2001;38:92-5.
2. List the first six contributors followed by et al.
3. Personal author(s): Ringsven MK, Bond D. Gerontology and leadership skills for nurses. 2nd ed. Albany (NY): Delmar Publishers; 1996.
4. Chapter in a book: Phillips SJ, Whisnant JP. Hypertension and stroke. In: Laragh JH, Brenner BM, editors. Hypertension: pathophysiology, diagnosis, and management. 2nd ed. New York: Raven Press; 1995. pp 465-78.

Tables

- Tables should be self-explanatory and should not duplicate textual material. Tables with more than 10 columns and 25 rows are not acceptable. Limit the number to minimum required.
- Number tables, in Arabic numerals, consecutively in the order of their first citation in the text and supply a brief title for each.
- Place explanatory matter in footnotes, not in the heading. Explain in footnotes all non-standard abbreviations that are used in each table. For footnotes use the following symbols, in this sequence: *, **, ***
- Obtain permission for all fully borrowed, adapted, and modified tables and provide a credit line in the footnote.

Illustrations (Figures)

- Submit three sets of sharp, glossy, un-mounted, colour photographic prints, with height of 4 inches and width of 6 inches.
- Computerised colour printouts are not acceptable.
- Figures should be numbered consecutively according to the order in which they have been first cited in the text.
- Each figure should have a label pasted on its back indicating the number of the figure, the running title, top of the figure and the legends of the figure. Do not write on the back of figures, scratch, or mark them by using paper clips.
- If a figure has been published, acknowledge the original source and submit written permission from the copyright holder to reproduce the material. A credit line should appear in the legend for figures for such figures.

Reprints

Journal does not provide any free printed reprints. Reprints can be purchased. Articles may be accessed online and pdf format will be sent to the authors. Contact the editor for any queries. Authors wishing to procure a hard copy of the journal may send their requests to the editor via email.

Plagiarism Policy

All articles will be examined by computer software for plagiarism. If it is found that a paper that has been submitted has been copied in parts or fully from an earlier published paper the authors will be duly informed and the paper may be rejected. Action against the erring authors may be taken as per recommendation of the editorial board.

Open Access Policy

The journal grants free, irrevocable, worldwide, perpetual right of access to and a license to copy, use, distribute, transmit, and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship.