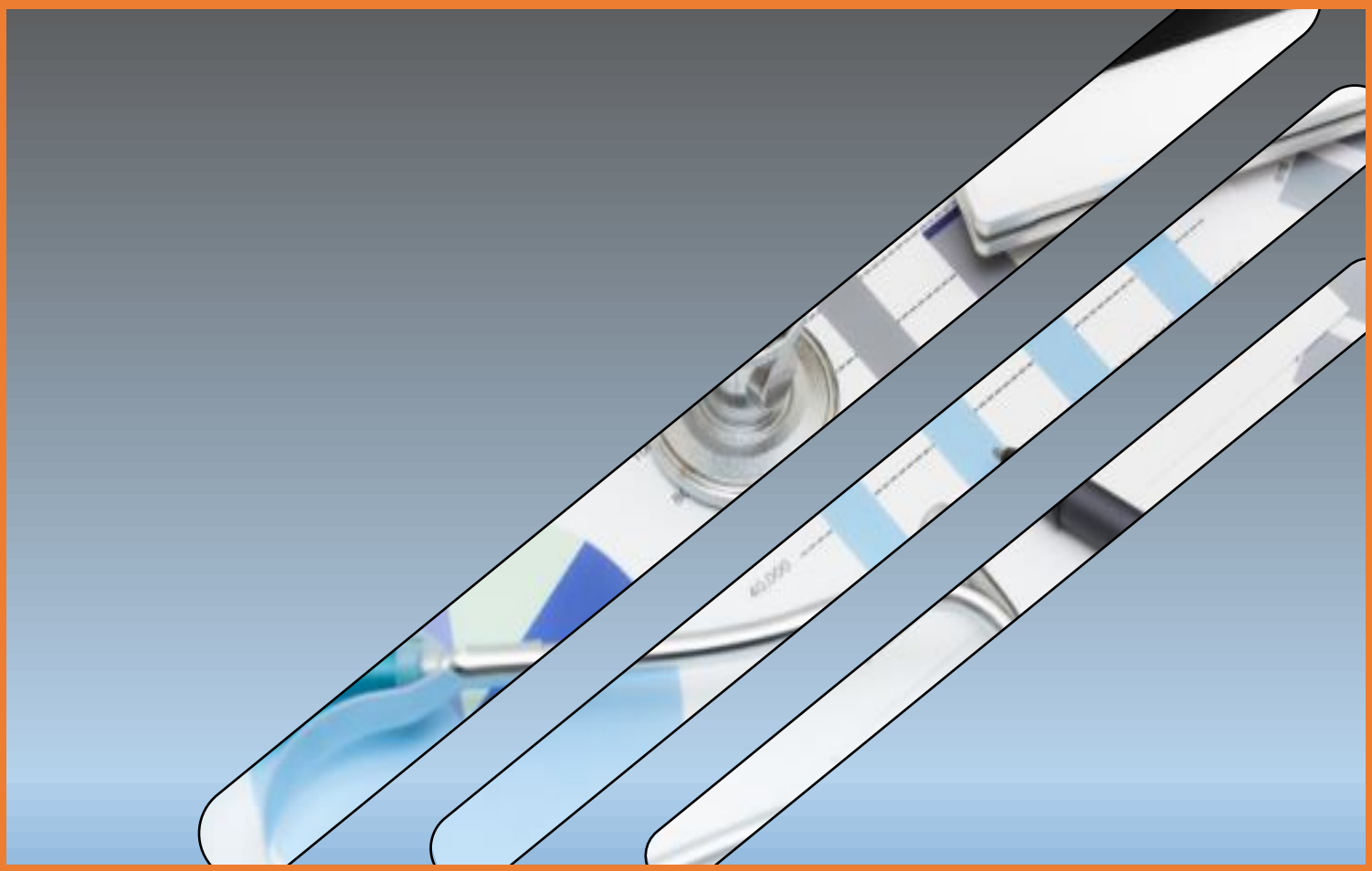

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National Cancer Survivor Day: Guest Comment

Dr. Saransh Srivastava

National Cancer Survivors Day is an annual observance held on the first Sunday in June every year. "It is a celebration for those who have survived, an inspiration for those recently diagnosed, a gathering of support for families and an outreach to the community". According to the National Cancer Institute (NCI), "a person is considered to be a survivor from the time of diagnosis until the end of life".[1] With nearly 14 million cancer survivors in the United States and over 1.5 million new cases diagnosed each year, cancer continues to affect almost every American, whether through a family member or through their own experience (CDC & NCI, 2015).

The American Cancer Society estimates that more than 16.9 million Americans with a history of cancer were alive on January 2019. Some of these people were cancer-free, while others still had signs of cancer and may have been undergoing treatment. It is estimated that there will be about 1,806,590 new cancer cases diagnosed in 2020. This number does not include basal and squamous cell skin cancers.

Cancer Survivorship[2]

As difficult as treatment is, thousands of cancer survivors have said that the experience led them to make important changes in their lives. Taking the time to appreciate each new day, learning to take better care of themselves, learning the value of how others care for them, or becoming national advocates for better cancer research, treatment, and care were some of these significant changes.

The National Cancer Institute has developed a booklet called Facing Forward: Life After Cancer Treatment. The information in this booklet is designed mainly for cancer survivors who have recently completed their cancer treatment, but you may find the information helpful even if you were treated a long time ago. Its purpose is to give cancer survivors and their loved ones a better idea of what to expect after treatment ends. It covers what may happen with:

- Your medical care
- Your body
- Your mind and your feelings
- Your social relationships
- Practical matters such as job and insurance issues

The Cancer Survivors' Bill of Rights[2]

The National Coalition for Cancer Survivorship presents this new version of the Survivors' Bill of Rights to call public attention to survivor needs, to enhance the quality of cancer care, to empower cancer survivors, and at the same time bring greater satisfaction to them and their physicians, employers, families, and friends.

1. Survivors have the right to continuous lifelong medical care, as needed. The physicians and other professionals involved should make every effort to be:

- Sensitive to cancer survivors' lifestyle choices and their need for self-esteem, dignity and privacy of the information trusted to them;
- Careful, no matter how long these patients have survived, to take symptoms seriously and not to dismiss aches and pains, for fear of recurrence is a normal part of survivorship;
- Vigilant to watch for any long-term and late effects of cancer and its treatment in follow-up clinics and offices;
- Informative and open, providing survivors with as much or as little candid medical information as they wish, and encouraging informed participation but not expecting survivors to manage that care on their own;
- Knowledgeable about counseling and rehabilitation resources, and willing to refer survivors and their families as appropriate for emotional support and therapy aiming to improve the texture as well as the quantity of time that is theirs to live.

2. No matter in which setting their care is offered--be it fee-for-service or some sort of managed care system--survivors have the right to quality care emphasizing:

• Informed choice--choice of the setting in which care is delivered, choice of primary physicians and specialists delivering that care, as well as choice of appropriate, effective and safe treatments (including ongoing clinical trials);
• Efficient yet humane management of such unfortunate by-products of disease as fatigue and pain--pain control management, for example, which approaches survivors more as partners in identifying the proper amount of medication needed at any given time than as potential drug addicts;
• Appropriate use of hospital and other facilities, wherein cost effectiveness and patient-centered care are balanced so that no survivor is dismissed--after a mastectomy, for example--unable to care for her or himself or secure the care needed to avoid dangerous and painful situations;
• Constant respect for survivors' wishes as to when and how to discontinue treatment should that time arise, including the scrupulous honoring of "living wills" and similar documents.

3. In their personal lives, survivors, like other Americans, have the right to the pursuit of happiness. This means they have the right:
• To talk with their families and friends about their cancer experience if they wish, but to refuse to discuss it if that is their choice, and not to be expected to be more upbeat or less blue than anyone else;
• To be free of the stigma of cancer as a "dread disease" in all social relations, wherever they may take place--from home to work or market-place;
• To be free of blame for having the disease and of guilt for having survived it;
• To participate in support groups and other survivor support and/or advocacy activities as they wish, for in such settings they usually feel less isolated, more informed, and more able to express their feelings, be they feelings of hope or of despair, without fear of being regarded as "bad" or "ungrateful" or simply "uncooperative" patients.

4. In the work place, survivors have the right to equal job opportunities. This means they have the right:
• To aspire to jobs worthy of their skills, and for which they are trained and experienced, and thus not to have to accept jobs they would not have considered before their cancer experience;
• To be hired, promoted, and accepted on return to work, according to their individual abilities and qualifications, and not according to "cancer" or "disability" stereotypes with "reasonable accommodation," under federal and state law, such as changes in duties or hours, which allows them to work while receiving medical treatment without falling into a survivors' "Catch-22"--too ill to work, but too healthy to qualify as "disabled" and so entitled to protection under the Americans with Disabilities Act;
• To maintain privacy about their medical histories.

5. Since health insurance is an urgent survivorship concern, every effort should be made to assure all survivors decent affordable coverage, whether public or private, or provided under managed care or fee-for-service systems. This means:
• For employers, that survivors have the right to be included in group health coverage regardless of health history;
• For physicians, counselors, and other professionals concerned, that they keep themselves and their survivor-clients informed and up-to-date on the dangers of health insurance discrimination.

6. For social policy makers, both in government and in the private sector, that they seek both to broaden insurance programs to include diagnostic procedures and treatments which help prevent recurrence and ease survivor anxiety and pain, as well as to lower the unfair barriers often imposed by the accidents of race, minority culture, age, or plain lack of means to pay for adequate health insurance coverage.

In the end, I would like to thank the entire editorial team of IHRJ for providing me a platform to pen my thoughts on the important occasion of National cancer survivor's day.

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SHORT COMMENTARY

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Recommended Vaccination During Pregnancy: A Short Commentary

VINESHA PANDITA

ABSTRACT

Vaccination is the process of stimulating a protective adaptive immune response against microbes by exposure to non-pathogenic forms or microbial components. Live vaccines killed vaccines and pathogen derived purified macromolecules are the three types of vaccines. Maternal vaccination provide protection to both the mother and fetus from the morbidity of certain serious infectious diseases which can otherwise be prevented by vaccination. Influenza and Pertussis vaccines are routinely recommended during pregnancy. Vaccines can also result in adverse reactions both in the mother and child. This review focuses on guidelines and recommendations for vaccination during pregnancy.

KEYWORDS: Vaccination, Pregnancy, Immunization, Vaccine

INTRODUCTION

As serious infections can harm the baby during pregnancy or after delivery, vaccinations in pregnancy, are of great concern. Vaccine-preventable diseases cause significant morbidity and mortality among mothers, neonates, and young infants. Immunization of the pregnant mother provides important health benefits limited not only to her but also to the fetus.

Vaccines help to strengthen the human immune system that can fight off serious infectious diseases. Development of immunity after vaccination protects the mother as well as the keeps the child safe during early months of life until the baby gets his/her own vaccination.[1] While vaccination recommendations have changed sharply over the last few years on one hand, many of us, including physicians, are no longer familiar with the problems and complications of bygone diseases on the other. These diseases no longer seem worrisome, concerns about possible side effects and unfounded fears are frequently widespread. It is very important however that doctors and patients are well-informed about the importance of vaccinations prior to and especially during pregnancy[2,3] since this concerns the protection of the mother, the fetus and the newborn.

Broadly, vaccines can be classified as live or attenuated vaccines, killed or inactivated vaccines and pathogen derived purified macromolecules. A few vaccines are recommended prior to pregnancy, some are recommended during pregnancy, a few may be administered during pregnancy, only if necessary and some are also absolutely contraindicated during pregnancy. It is important to check the vaccination status of women who are planning to become pregnant. Gynecologists play a key role in counselling patients regarding vaccinations since a gynecological consultation is often the only medical attention a young woman may seek. Ideally, women should be examined before a planned pregnancy and vaccinated if necessary.

Measles mumps and rubella vaccinations are of great importance in addition to hepatitis A and B, diphtheria and tetanus as well as vaccinations against human papilloma viruses. Although these three typical pediatric diseases are fortunately, rare nowadays, it is worth bearing in mind why they were so feared as well as the importance of protecting women and their unborn children against them. Rubella often goes unnoticed, but pregnant women have an increased risk of having an abortion, or the disease itself may lead to severe fetal malformations, especially of the heart, of the eye leading to blindness, of the ear resulting in deafness or of the brain with resultant intellectual disability. The risk is especially high in the first trimester and decreases from the 20th week onwards. Measles infection in pregnancy carries a high risk of abortion, premature or stillbirths. Fetal malformations do not occur. In infants, measles often leads to complications as well as frequent and prolonged hospitalizations. Measles infections in pregnant women

may lead to severe pneumonia or meningitis. Mumps in pregnancy may increase the risk of abortion. Women who have not had varicella in childhood and have not been vaccinated should be administered the varicella vaccine, since varicella gives rise to complications more frequently in adults and especially in pregnant women than in children. Infection in the first half of pregnancy may result in fetal malformations with severe damage to the skin, bones, eyes or brain. Peripartum varicella infection in the mother may result in neonatal varicella, which is associated with high neonatal mortality. Depending on the season, influenza vaccination may be worthwhile before a planned pregnancy. Additionally, vaccinations such as Yellow fever vaccination may be indicated depending on lifestyle. Pregnancy should be excluded while administering live vaccines.

Vaccination during pregnancy plays a very special role, protecting the mother and fetus on one hand and providing passive immunity to the new-born on the other. Studies have shown that pregnant women are more susceptible to certain infectious diseases, while others often follow a more severe course. Various mechanical and physiological changes occur during pregnancy, such as reduced lung volume, increased heart rate and immunological adaptation mechanisms. It is important to be aware that healthy pregnant women may develop an immune response in the same manner as non-pregnant women.[4] Vaccination against pertussis is currently recommended for all pregnant women. While pregnant women are not at high risk of developing a severe pertussis infection, newborns and infants carry a risk of developing this infection and have an increased risk of complications. The infection is associated with high morbidity, especially in the first few months of life. The most common sources of infection are family members. The pertussis vaccine does not provide long-lasting protection. Adequate protection against pertussis is expected after two doses, that is, four months at the earliest. However, since many severe illnesses occur in the first two to three months of life, the mother should be vaccinated during pregnancy, regardless of her vaccination status. Maternal antibodies are formed after vaccination which cross the placenta to the fetus and thus protect the newborn from infection.[5]

According to current recommendations, pregnant women should be administered the pertussis vaccine in the second trimester, so that premature babies may benefit from the vaccination. Vaccination induces the development of an adequate level of antibodies in the child even at 36 weeks of pregnancy.[6] The vaccine may be administered in the puerperium if the mother's last vaccination was more than ten years ago and was not repeated during pregnancy. Although the vaccine prevents the mother from being the source of infection, this vaccination cannot reliably protect the newborn in the vulnerable phase. Pertussis vaccination is currently not known to be associated with adverse effects, either on the course of pregnancy or on fetal development.

Changes in the immune system during pregnancy result in increased susceptibility to infections, although this is less frequently seen with influenza. The physiological, hemodynamic and respiratory changes in pregnancy, however, predispose to more severe outcomes. Lung capacity decreases, while heart rate and stroke volume increase with an increase in gestational age. Pregnant women are thus more susceptible to severe disease, which leads to more frequent hospitalizations and increased mortality.[7] Influenza may cause serious respiratory complications in pregnant women, especially during the 2nd and 3rd trimesters as well as in the first three months after delivery. It is also believed that influenza may also lead to complications such as prematurity or intrauterine growth retardation.[8]

Infection is associated with higher mortality and a higher risk of complicated outcomes in the first six months of a child's life.[9] Influenza vaccination during pregnancy reduces the risk of the disease in pregnant women, thereby significantly lowering the risk of complications and hospitalization. The fetus is also protected by vaccination.[10] There are fewer premature births and fewer instances of growth retardation.[11] Vaccination during pregnancy also reduces the risk of infection in infants in the first few months of life.[12] According to current knowledge, influenza vaccination in pregnancy has no adverse effects on the course of pregnancy or development of the fetus. Side effects have not been described more frequently in pregnant women. The vaccination is clearly recommended by the World Health Organization.

Vaccinations before and during pregnancy are gaining in importance. A paradigm change has furthermore occurred. While vaccinations were avoided as far as possible during pregnancy, two vaccinations are recommended nowadays during pregnancy in keeping with current recommendations. Firstly, the pertussis vaccine, which provides passive protection for the newborn in the first few weeks of life and secondly, the influenza vaccine which actively protects the mother during pregnancy and lactation. The fetus and new-born are also protected against possible influenza.

Only live vaccines are contraindicated in pregnancy. Accidental vaccinations are not considered a reason for termination of pregnancy. If vaccinations are not administered prior to or during pregnancy, they should be rescheduled postpartum in the puerperal period.

If vaccinations are administered during pregnancy, the benefits for mother and child should outweigh the risk of vaccination.[3] This is clearly the case for both influenza and pertussis vaccinations. All but live vaccines may in principle be administered during pregnancy if indicated. If a trip is planned to a polio-endemic region, vaccination with the inactivated parenteral polio vaccine or one of a combination vaccine against poliomyelitis may be administered. Pneumococcal or Hemophilus influenzae vaccinations may also be indicated under certain circumstances. Live vaccines are contraindicated in pregnancy since they theoretically carry a potential risk of fetal infection. Although countless publications show that accidental vaccination against rubella in the first trimester does not lead to rubella embryopathy, MMR and other live vaccines are contraindicated in pregnancy. Reliable contraception is recommended for four weeks after administration of live vaccines.[3]

CONCLUSION

An important strategy to improve pregnancy outcomes is vaccination during pregnancy. Live attenuated viral and bacterial vaccines are generally contraindicated during pregnancy because of the risks to the fetus. Vaccines like drugs can cause adverse reactions and intervention during pregnancy can affect both mother and child, therefore, vaccines with relative and absolute contraindications should be avoided during pregnancy. Pertussis and influenza vaccines are indicated during pregnancy. Pregnant mothers should be vaccinated only if the benefits to the mother and the fetus should outweigh the risks. Awareness regarding both benefits of maternal vaccination and its safety concerns needs to be generated. Proper immunization programs should be organized by the governmental health bodies to involve each and every pregnant mother so that health of two individuals is boosted using one vaccination.

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REVIEW

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Cardio-Vascular Complications of Hydroxychloroquine Use: Can Impact COVID-19 Pandemic

TARUNA SINGH*[1], RAKSHIT ARORA[2], AMRIT SHARMA[3]

ABSTRACT

As the coronavirus pandemic is on the rise, many compounds with anti-viral properties are under investigation. Hydroxychloroquine (HCQ) being the daily debated daily during this COVID-19 pandemic is an immunomodulatory drug which has been used for indications like malaria, systemic lupus erythematosus and arthritis. Although some researchers have claimed its effectiveness against coronavirus, it results in proarrhythmic effects and drug-induced long QT syndrome. These cardiac issues while using hydroxychloroquine, have limited its use against coronavirus. A literature search was performed, and general safety information of this drug was collected. It can be concluded that this drug leads to cardiovascular events, heart disease, hypotension, tachycardia, and QT interval prolongation, sometimes in combination with other drugs and should be prescribed to the patients only after thoroughly estimating its benefit risk ratio.

KEYWORDS: Hydroxychloroquine, COVID-19, Coronavirus

INTRODUCTION

Hydroxychloroquine is an aminoquinolines that has received much attention during the current coronavirus pandemic. It is an approved drug for the treatment of systemic lupus erythematosus, rheumatoid arthritis and malaria, discoid lupus erythematosus, polymorphic light eczema and juvenile idiopathic arthritis. Contraindications to treatment with HCQ include existing retinopathy, visual field defects, porphyria, hypersensitivity to HCQ, auditory nerve damage and psoriasis. Hydroxychloroquine is well absorbed in oral administration. The half-life in the blood is very long, about 30-50 days. The degree of binding to proteins in plasma is relatively low, around 40 percent. It accumulates in certain tissues, including retina, muscles, and erythrocytes. Elimination takes place mainly via the kidneys.

Literature data suggests that it influences viral replication of SARS-CoV-2 (1, 2). In these studies, treatment regimens of 400 to 600 mg of hydroxychloroquine/day for 5 to 10 days are suggested.[1,2] Knowledge of toxicity and serious side effects mainly comes from retrospective studies and case reports.[3] The randomized controlled trials that exist are small and have a narrow selection of participants, where patients with, for example, high age and comorbidities are often excluded.[3] These factors make it difficult to know the exact frequency of serious side effects when using hydroxychloroquine in clinical practice.

In view of the potential massive use of hydroxychloroquine in the treatment of COVID-19, a review on safety of hydroxychloroquine was conducted. The relevant publications found were assessed by both the authors, and additional information in the literature references of each publication was sought.

Against COVID-19, HCQ has an indirect mechanism of action, related to the inflammatory response to the virus. Inhibition of inflammatory mediators such as the tumor necrosis factor alpha and its receptor, and interleukin 6, causes discontinuation in the cascade of immune response to the virus, such as endothelial and alveolar patency, and therefore nearly two decades ago it was proposed that it would have a potential benefit in the prevention and treatment of acute respiratory distress caused by coronavirus.[4]

The literature describes interactions with beta-blockers with hepatic metabolism, amiodarone, and digoxin.[5] In patients with systemic lupus erythematosus, it was verified that CYP2D6 polymorphisms correlate with the serum drug levels, and this would be relevant in relation to the treatment of COVID-19: It is possible that patients treated with similar doses have disparate results according to the type of CYP2D6 polymorphism they have. (6) With the information available so far, some regulations on COVID-19 treatment with HCQ do not recommend the concomitant use of amiodarone and

suggest monitoring both digoxin blood levels and the QT interval.

Meanwhile, in patients receiving HCQ, the combination of increasing doses of azithromycin increases the QT interval. This must be highlighted in view of the potential combined use of both drugs in current clinical trials for COVID-19.[7,8]

In a systematic review describing cardiovascular complications in patients with rheumatic diseases, disturbance in the conduction system, ventricular hypertrophy, alterations in left ventricular wall motion, symptomatic heart failure, pulmonary arterial hypertension, and valve dysfunction were reported on use of chloroquine and HCQ and the recovery rate after discontinuation was only around 45%.[9] Serious side effects that may occur as a result of a short period of treatment with hydroxychloroquine. One known long-term side effect is, retinopathy, which occurs as a result of tissue accumulation in melanin-containing cells.

A systematic review found publications of patients who on HCQ developed a specific cardiomyopathy, with granular inclusions with vacuolation of the cardiomyocytes, intravacuolar lamellar bodies, or curvilinear bodies. It is speculated that these lesions are attributed to a lysosomal effect, and some authors have described it as a phenocopy of Anderson-Fabry disease. Cardiomyopathy may cause hypertrophy and restrictive behavior. In most cases it manifests as clinical heart failure, or as alterations of the conduction system, and syncope. Approximately half of patients develop ventricular dsyfunction and mortality is 45%. The chronic use of HCQ could then be the direct but extremely rare cause of an acquired lysosomal storage disease.[10]

In a review of electrocardiographic findings of patients with rheumatic diseases treated chronically with HCQ, normal PR, QRS, QTc values were observed, with only two cases of complete right bundle branch block and one case of left bundle branch block. However, this study has limitations, including not having baseline studies to make comparisons.[11] Tachycardia secondary to vasodilatation has been observed. Capel RA et al., in animal models, verified that HCQ causes bradycardia.[12] However, in humans the heart rate could increase by indirect mechanisms. There are cases of HCQ-induced QT prolongation in the literature. hydroxychloroquine affects the repolarisation of myocardial cells and extend the QTc interval. This increases the risk of potentially lethal ventricular arrhythmias, such as Torsades de pointes. The prolongation of the QTc interval is dose-dependent and usually occurs shortly after the first dose.[13] It is important to consider the patient's overall risk factors for QTc prolongation and Torsade de pointes in treatment with hydroxychloroquine. Significant risk factors include high age, heart disease, certain electrolyte imbalances and concomitant treatment with multiple drugs that cause QTc prolongation.[14,15] Most of these factors are also risk factors for severe COVID-19 infection.[16] A non-randomised study reported that hydroxychloroquine in combination with azithromycin has an effect on COVID-19.[2] Both hydroxychloroquine and azithromycin can prolong QTc.[17] In a preliminary report, worrying QTc prolongations are reported in combination therapy with hydroxychloroquine and azithromycin for COVID-19.[18]

Hydroxychloroquine can rarely cause very serious skin reactions like Stevens-Johnson syndrome, toxic epidermal necrolysis and Drug reaction with eosinophilia and systemic symptoms. These conditions usually occur one to four weeks after starting treatment and can have a fatal outcome.[19-21] Hydroxychloroquine may also result in outbreaks of psoriasis and should not be used in the presence of known psoriasis. Hydroxychloroquine can cause severe hypoglycaemia.[22] The mechanism of hypoglycaemia is believed to be increased release of insulin from pancreatic beta cells as well as decreased degradation of insulin, which together causes hyperinsulinemic hypoglycaemia.[23] In case of severe hypoglycaemia, treatment with 4-aminoquinolines should be discontinued immediately and glucose should be administered. Lastly, it is possible that when dealing with the massive use of HCQ cases of intoxication and overdose with these drugs may occur. In this sense, hypotension, conduction alterations and hypokalemia must be considered as primary findings.

CONCLUSION

Hydroxychloroquine have been proposed as a therapy candidate in COVID-19. Some patients suffer from serious side effects when treated with HCQ, such as hypotension, tachycardia, mild and asymptomatic QT prolongation, greater QT prolongation in

concomitant treatment with azithromycin, interactions with amiodarone, digoxin, and beta-blockers, hypoglycemia and severe skin reactions. Ideally, it should only be used in accordance with approved indications or within clinical trials. More and larger randomized trials with adequate study protocols are required before any conclusions can be drawn on the efficacy and safety of COVID-19 therapy. It is still unclear when COVID-19 pandemic would end, and still a definite treatment is lacking. Therefore, the health care professionals do not have much management choices for coronavirus infection. So, hydroxychloroquine should be prescribed only after weighing the benefits and risks of this dug.

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CASE REPORT

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Pregabalin Addiction: Case Report of a Young Adult

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ABSTRACT

Pregabalin has been used widely for the treatment of neuropathic pain, generalized anxiety disorders and epilepsy. Data is scarce and much is not known about the addictive potential of pregabalin. Herein, we report details of a young adult who got addicted to pregabalin and approached for a smooth withdrawal. The subject had a successful outcome. Literature suggests a growing concern for the abuse of pregabalin. Risk factors associated with the development of addictive behavior with pregabalin need to be assessed.

KEYWORDS: Pregabalin, Addiction, Abuse, Dependence

INTRODUCTION

Pregabalin is a drug that exerts anticonvulsant, analgesic and anxiolytic effects on animal models and has a high affinity for the voltage-dependent calcium channels.[1] It decreases the influx of calcium induced by depolarization and thus reduces the emissions of numerous excitatory.[1] The prescribing indications include fibromyalgia, post herpetic neuralgia and neuropathic pain after spinal cord injury or due to diabetes mellitus.[2] It is not approved for generalized anxiety disorders[3] but is often used off-labelly for psychiatric and addictive disorders such as insomnia, obsessive-compulsive disorder, post-traumatic stress syndrome, anxiety in schizophrenia, the treatment of benzodiazepine withdrawal and dependence as well as the prevention of relapse in alcohol dependence.[4-11] It has also been shown the benefit of pregabalin in reducing the opioid abstinence syndrome. [12,13]

In 2010, on the basis of data analyzed from the Swedish national adverse drug reactions register, it was concluded that pregabalin was likely to be associated with a potential for abuse.[14] Despite the increasing evidence of abuse, pregabalin is increasingly being prescribed. A 2012 report in the United Kingdom noted that the prescribing of pregabalin had increased by 350% over the previous five years[15] The potential risk of abuse and addiction, and of the risks of liver and hematological toxicity were published in 2012[16] and recently in 2019, another manuscript warned about the risk of pregabalin-related suicide.[17] As pregabalin is being studied as a treatment in addiction, especially for the treatment of benzodiazepine withdrawal[10] and for the prevention of relapse in alcohol dependence[11], assessment of its potential for addiction is of major interest. As pregabalin has been considered to have a low potential for abuse, many healthcare professionals don't take this product-use issue much into account when prescribing. However, several cases have been published and a few professionals are concerned about the risks and limitations of prescribing this drug. This facilitates the early detection of problematic developments before they become a major problem. Other data are necessary in order to identify risk factors for pregabalin abuse and dependence to optimize its medical indications and prescribing practices. We present a case of a young adult who presented himself with a request of pregabalin withdrawal.

CASE REPORT

A 25 year old male working as a sales representative with a telecom company visited us after being referred from his company panel doctor for pregabalin withdrawal. He had been taking between 1.8 g of pregabalin daily for a year with no other associated drug use. He had tried to stop the drug few times, but withdrawal symptoms appeared every time. On further questioning he detailed that the symptoms included sweating, tremors, diarrhea, asthenia, joint pain and a craving to start pregabalin again, had appeared each time. His history included Marijuana abuse and opiate misuse that started during high college days till he started working at the age of 23. He also had a history of hospitalization due to alcohol dependence multiple times during college

days. He claimed to have tried a few unknown drugs by injection. He had only tried buprenorphine had been abstinent from opiates since. He had no other somatic or psychiatric history and there was no history of addiction or psychiatric disorder in his family. He started taking pregabalin after he was suggested by a college senior regarding its potential for helping in management of Marijuana and opioid withdrawal. He started taking pregabalin 300 mg once in a day. This helped him to decrease using marijuana but after a few months he increased the dose to twice daily as he wanted to quit marijuana completely. Gradually he increased the dose to 6 tablets in 3 divided doses per day.

The sought-after effects were calmness, improved sociability, a feeling of well-being and relaxation and an improvement in sleep. We hospitalized him and gradually reduced the doses, decreasing by 100 mg per day in the with daily dispensing. During hospitalization, the patient had a very strong desire to use pregabalin and requested treatment to help him; he also complained of gastrointestinal problems, insomnia, muscle and joint pain, sweating and anxiety. Amisulpride and chlorpromazine were started. Gradually decreasing benzodiazepine treatment was introduced for the craving. He sometimes showed a desire for a single pregabalin dose. High dosage buprenorphine substitution treatment was introduced. His condition got much better and he was discharged. The withdrawal symptoms were no longer present at the time of discharge. He was stable for several months before losing for follow up.

DISCUSSION

Abuse and dependence of many drugs has come up in the past few decades. The euphoric effect of pregabalin can be considered as the main reason behind its abuse. Experiencing euphoria appears to be a dose-dependent side effect of pregabalin which encourages some patients to ingest large doses and appears to be a transient side effect. Supra-therapeutic doses may produce sedation, dissociation, numbness, disinhibition, improved sociability, and auditory and visual hallucinations.[18,19] In our case, pregabalin was initiated with the aim of coming off another substance, but the initial withdrawal ultimately turned into a new dependence. The subject succeeded in withdrawing from pregabalin but required management based on the prescribing of opioid substitution treatment. Pregabalin abuse typically involves supra-therapeutic doses, often clearly exceeding the maximum recommended dose of 600 mg administered in divided doses. Abusers may continue to increase the dose because tachyphylaxis rapidly develops.[18] Although most take these drugs orally, other routes of administration have been reported: injection, smoking or inhalation of crushed tablets, rectal or parachuting.[20,21] There are more cases of pregabalin dependence than of abuse.

Most of the patients developed withdrawal symptoms on stopping pregabalin. Of the disorders related to substance use, the use of opiates is the most significant risk factor. In Germany, 12.1% of the patients treated for opioid dependence were abusing pregabalin compared to 2.7% of the patients treated for addictions to substances other than opiates.[22] Similarly, in a population of former prisoners, those with disorders related to opioid use were more likely to abuse pregabalin (26%) than those with a disorder related to the use of non-opioid substances (4%).[23-26] In most cases, pregabalin is initially been prescribed to treat a medical condition, which suggests that the development of addictive behaviors associated with pregabalin may also occur in the context of normal medical treatment. Moreover, it is being used for many unapproved indications.

The management of the patients varies greatly from one patient to another, hospitalization and associated treatment may or may not be required. There is no consensus on the therapeutic management of pregabalin withdrawal. There has clearly been an increase in the frequency of cases of pregabalin abuse or dependence in recent years.[23,27] This observation probably relates to both an increase in reports, given the increased awareness of pregabalin's potential for addiction, and a real increase in the incidence of pregabalin abuse or dependence. Drug abuse or dependence may increase for some time before it reaches the threshold for reporting.

CONCLUSION

Pregabalin addiction may have reached the clinical detection threshold and the request for treatment is likewise increasing. There is a need to explore about certain characteristics of pregabalin misuse and addiction. The pharmacokinetic aspects of pregabalin need to be considered when assessing its potential for dependence. The current literature suggests an increase in pregabalin abuse. There is need for a

treatment specifically for problems associated with pregabalin use. The case presented in this article suggests that pregabalin should be prescribed with caution in patients with a history of addiction, especially to opiates. This potential for abuse is even more significant as pregabalin is being used as a treatment of another drug addiction. Large sample studies are required to assess the Risk factors associated with the development of addictive behavior with pregabalin. There is also a need to propose an appropriate management for the same.

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ORIGINAL RESEARCH

QR CODE

Students' Preferences Between Blackboard Teaching and PowerPoint Presentations: A Cross-Sectional Survey

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ABSTRACT

INTRODUCTION: With evolution of technology, teachers have, or are shifting to various methods other that blackboard teaching (e.g. PowerPoint, Over Head Projectors, Integrated Learning, Online Apps, etc)
AIM: To assess Students' Preferences between blackboard teaching and PowerPoint Presentations among different university students in the city of Melbourne, Australia
MATERIALS AND METHOD: Data was collected using a pre-tested and pre-validated questionnaire and distributed online to students studying in various Universities in Melbourne, Australia. Statistical tests involved the Shapiro-Wilk test, Independent samples t-test, multivariate linear regression and the Pearson's correlation coefficient. The analysis was done using SPSS version 21.0.
RESULTS: There were a total of 827 complete responses (response rate: 82.6%) and females formed a majority of the study population (62%). Majority of the students (53.1%) preferred PowerPoint presentations as compared to blackboard teaching (46.9%), although the difference was minimal; responses of females was statistically significant (p=0.02). Significant differences (p=0.03) were also observed as 58.8 % students considered blackboard teaching more interesting as compared to PowerPoint Lectures.
CONCLUSION: Students preferred PowerPoint presentations as compared to Blackboard teaching and the teachers should aim to make it as interesting as possible and allow student interaction in between.

KEYWORDS: Teaching, Learning, Students

INTRODUCTION

Across the globe, teaching is undergoing immense transformation. Teachers are moving from the traditional "chalk and talk" method to various other teaching modalities, which includes the use of PowerPoint, online assignments and use of online platforms for teaching-learning. In the classroom, however, most teachers are shifting to PowerPoint Presentations for their students, making it the most popular teaching aid amongst all.[1]

Classroom teaching has evolved over the years and has students belonging to various cultures, religion, family background all coming under one roof for learning.[2] During a lecture, both the visual and auditory senses are used to absorb information and here assistance in the form of a visual aid is useful.[3,4] It has been reported that approximately more than 400 million copies of PowerPoint are currently in circulation, and an estimated 20 to 30 million PowerPoint-based presentations are used to impart education in schools, Universities and various organizations.[5]

Despite its immense popularity and ease of use, researchers have stated that a PowerPoint presentation mostly serves as a one-way method of information dissemination and bores the student easily. The students feel ignored in lecture halls when their teacher focusses on the presentation and does not pay attention/ interact with the class. In the absence of a remote mouse and/or laser pointer, the teacher may not be able to leave the podium due to the need to advance to the next slide and this becomes monotonous for the students.[6]

A certain research concluded that PowerPoint fails in two key areas: increasing information transfer to our target (students) and improving what people think of your brand (and you).[7] As a teacher, one has to adapt to good teaching technique so that there is maximum student learning occurring in the classroom. The present study hence, was designed to assess students' preferences between blackboard teaching and PowerPoint Presentations among different university students in the city of Melbourne, Australia.

MATERIALS AND METHOD

The present study was designed to be an online questionnaire based cross-sectional study and prior to

its implementation, all necessary approvals and clearances were duly obtained from the respective authorities. The questionnaire was distributed to students of universities in Melbourne via a QR code/invitation link. The questionnaire contained 26 questions and was divided into 3 Sections. The first page of the questionnaire assured confidentiality of data, informed the study objectives and study that participation was purely voluntary. The consent to participate (inclusion criteria) was implied when the students agreed to answer the questionnaire and they had complete freedom to decline at any time. Access to data was only to the principal investigator and no personal details (e-mail id, phone number, name etc.) were asked. Among total submissions, if a student failed to answer ≥1 question, it was excluded from the analysis. The study was conducted over a period of 3 months i.e. 1st December, 2019 to 29th February, 2020 and Data analysis included tests for normalcy Shapiro-Wilk test, Independent samples t-test and multivariate linear regression. Coded data was sent to the statistician so that confidentially of the data could be maintained. The analysis was done using SPSS version 21.0.[8]

RESULTS

It was observed that of a total of 1001 responses received, there were a total of 827 complete responses (response rate: 82.6%) and females formed a majority of the study population (514, 62%) followed by males (313,38%) and is described in figure 1.

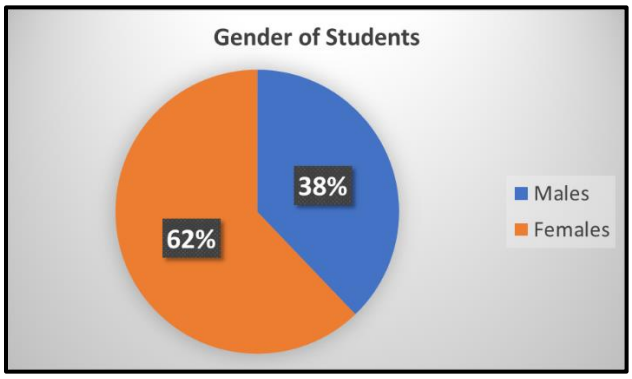

Figure 1. Distribution of the study population according to gender

Upon assessing student's preference towards the two teaching modalities assessed in the study, majority of the students (53.1%) preferred PowerPoint presentations as compared to blackboard teaching (46.9%), although the difference was minimal. The responses of females was found to be statistically significant (p=0.02). (Table 1)

STUDENTS' PREFERENCES BETWEEN BLACKBOARD AND POWERPOINT TEACHING				
	BLACKBOARD	POWERPOINT	TOTAL	p VALUE
Males	152 (48.2%)	161 (51.8)	313 (37.8%)	0.78
Females	236 (45.9%)	278 (54.1%)	514 (62.2%)	0.02*
Total	388 (46.9%)	439 (53.1%)	827 (100%)	1.33

Table 1. Students' preferences between blackboard and PowerPoint teaching. (* denotes a statistically significant response)

The responses to various questions by the students are depicted in table 2. It was observed that 51.5% students cityd that a blackboard helped them better understand the concepts and considered it to be the most interactive method (61.7%), and this was found to be statistically significant in comparison to PowerPoint presentations (p=0.04). Significant differences (p=0.03) were also observed as 58.8 % students considered blackboard lectures more interesting as compared to PowerPoint Lectures.

A multi variate logistic regression revealed that females gave a significant response towards PowerPoint as their preferred teaching method and is depicted in table 3 (p=.03)

DISCUSSION

The results of the present study indicated that students belonging to various universities in Melbourne preferred PowerPoint teaching (53.1%) as compared to the traditional blackboard teaching methodology, popularly known as the "Chalk and Talk" method. These results are in agreement to Shah T et al. who reported that 82.60% of physiotherapy students preferred the PowerPoint method of classroom teaching.[9]

Literature has shown a stark contrast to the above results as various authors have reported the preference of blackboard teaching in comparison to PowerPoint teaching in the classroom.[5,10,11,12] Such differences can be attributed to the teacher's way of teaching PowerPoint Presentations and making them more interactive by the use of discussions and animations. The PowerPoint

STUDENT'S PERCEPTION BETWEEN BLACKBOARD AND POWERPOINT TEACHING				
	BLACKBOARD	POWERPOINT	TOTAL	p VALUE
I understand Lectures better	501(60.5%)	326(39.5%)	827 (100%)	NS
It makes me interested to attend lectures	487(58.8%)	340(41.2%)	827 (100%)	0.03*
Best Way to Understand Concepts	426(51.5%)	401(48.5%)	827 (100%)	NS
Most Interactive Method	511(61.7%)	316(38.3%)	827 (100%)	0.04*
Makes Entire Classroom more lively	406(49.1%)	421(50.9%)	827 (100%)	NS
Helps us better in Problem Solving	333(40.3%)	494(59.7%)	827 (100%)	NS
I get easily bored while attending Lectures	201(24.3%)	626(75.7%)	827 (100%)	NS

Table 2. Responses of students' preferences to various questions present in the questionnaire. (* denotes a statistically significant response)

presentation also has an advantage that complex procedures can be explained by the use of embedded videos and pictures, provided that the teacher has sufficient knowledge of making such presentations.

Apart from a teacher's preference and style of teaching, there have been reports of varying preferences among students belonging to different courses. In a study conducted by Vikas S and colleagues[13], it was reported that medical students have preferred PowerPoint whereas the dental students preferred the Chalkboard method although superiority of any lecture delivery method could not be established. Baxi SN and colleagues[12] reported an equal percentage of students preferred both teaching methodologies, while Chaudhary R et al.[14] and Meo Sa et al.[15] documented that he integrated (PowerPoint and chalkboard) method of teaching was found more suitable tool of teaching and learning than PowerPoint or chalkboard alone.

There are advantages as well as disadvantaged in both the methodologies. In respect to blackboard teaching, natural pauses and breaks (e. g. during writing or rubbing the blackboard) allowed students to follow the topic and take down the notes. The blackboard method also allows for greater spontaneity, flexibility and non linearity, does not get affected by broken glass [as compared to the now obsolete Overhead projectors (OHP)] and malfunctioning/defective projector lamps, loss of electricity, technical issues in projection and it does not need the classroom to be darkened.[16]

STUDENT'S PREFERENCES BETWEEN BLACKBOARD AND POWERPOINT TEACHING (Blackboard=Constant)				
	Coefficient	SD	T	p-value
Males	22.35	3.22	2.06	NS
Females	-7.55	2.16	2.11	0.03*

Table 3. Results of the Multivariate Logistic Regression. (* denotes a statistically significant response)

PowerPoint presentations, on the other hand saves the students from poor handwriting and a dirty blackboard. When used properly, It becomes more interesting and engaging for the students by incorporating videos, pictures and interactive sessions. Students mostly complained about the pace of such lectures (being too fast), Information overload in one slide and difficulties

in seeing the slides due to use of smaller fonts.[16]

The present study is prone to certain limitations. The first is social desirability is of the respondents towards technology or the method currently incorporated by their teachers. Secondly, since this study was exploratory in nature, it did not classify students on the basis of the course pursued by them. Nevertheless, it is safe to city the results of the present study can be extrapolated and contribute to the existing scientific literature.

CONCLUSION

Based on the results of the present study, teachers are encouraged to continue teaching with PowerPoint. They are also advised to use innovative methods and have lively interactions so that students don't drift away from the subject and stay focussed on the topic being taught.

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ORIGINAL RESEARCH

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Assessing Physical Activity among Canadian Healthcare Professionals

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ABSTRACT

INTRODUCTION: Physical Activity is well known to keep illness at bay and promote healthy living among people. In today's fast paced life, obesity is increasing amongst people and this can be eliminated through proper physical activity.
AIM: To assess the physical activity among various Canadian healthcare professionals.
MATERIALS AND METHOD: The present study was a multi-institution based observational study using a pre-tested, pre-validated questionnaire distributed among various colleges and privately practicing healthcare professionals in Canada using a close-ended questionnaire divided into five sections and containing 28 questions. Data analysis was done using SPPS version 19.0 and the independent samples t-test and multiple logistic regression was applied. Data was only considered significant when p was less than or equal to 0.05.
RESULTS: Most males belonged to the "overweight" category (56.3%), while females belonged to the "normal" category (56.3%). A lesser number of females reported being obese (5.4%) as compared to their male counterparts; significant difference (p=0.05) was observed between males and females in the underweight category. Males were found to be insufficiently active (41.8%), while 44.8% females were found to be in the active category. Statistical differences were observed while comparing the physical activity levels between the males and females belonging to the Insufficiently Active category(p=0.02).
CONCLUSION: Healthcare professionals should be reminded regarding their general health and the role of physical exercise in keeping them healthy.

KEYWORDS: Physical Activity, Obesity, Body Mass Index (BMI)

INTRODUCTION

Today's health professionals follow a very busy schedule, which ranges from academics and/or patient work to spending time with their family. Sometimes they have some other additional responsibilities too, which leaves very less time for them to pursue any kind of physical activity.

A lack of exercise often leads to one being obese and one of the best tool to fight obesity is through regular physical activity, defined as "any force exerted by muscles that results in energy expenditure above resting level".[1] The entire globe is facing an epidemic of noncommunicable diseases (NCDs) and none or little physical activity is a significant contributing factor towards the development of such diseases.

The Centers for Disease Control (CDC) recommends at least 30 min of moderate intensity physical activity for at least 5 days per week for adults (i.e., 150 min of moderate intensity physical activity per week).[2,3] Epidemiological research has proven that 15 to 20% of the overall risk for coronary heart disease, type 2 diabetes, colon cancer, breast cancer, musculoskeletal diseases, and psychological disorders is attributable to physical inactivity.[4] Studies have also reported that atleast 60% of the world's population fails to complete the recommended amount of physical activity required to induce health benefits.[5]

Healthcare professionals focus their efforts on providing care for their patients without worrying about their well-being. Sedentary work, which their profession demands, causes repeated strain in muscles, tendons, and other body tissues, which could lead to the development of musculoskeletal disorders, further restricting their ability to perform any kind of physical activity.

Hence, it is important that healthcare professionals are always involved in some kind of physical activity throughout their life to increase and maintain their musculoskeletal health.[6,7]

Such is the importance of physical health that it cannot be avoided by the healthcare professionals. Hence, this study was conducted to assess the physical activity

among various Canadian healthcare professionals.

MATERIAL AND METHODS

Study area and study population: The present study was a multi-institution based observational study using a pre-tested, pre-validated questionnaire distributed among various colleges and privately practicing healthcare professionals in Canada. They were contacted online or personally by the team of investigators to fill the questionnaire after explaining them about the aim and objectives of the study. Participation in the study was purely voluntary and data was coded to assure confidentiality of data. Prior to commencement of the study, all necessary approvals (including ethical clearance) and permissions were duly taken.

Sample size: The study adopted a convenience sampling approach and targeted the maximum number of healthcare professionals as possible.

Data Collection Instrument: Data was collected using a close-ended questionnaire divided into five sections and containing 28 questions. The questionnaire was adopted and modified from Anand T et al.[8] The Cronbach's Alpha (α) was found to be 0.79. A pilot study on 25 people was done to determine the feasibility of the study; and those results were not included in the final analysis.

The healthcare professionals were asked to provide self-reported values of height and weight from which BMI was calculated. The questionnaire contained six questions about their participation in moderate or vigorous physical activity during a typical week including the days and duration of involvement in physical activity. Consistent with the guidelines by CDC,[3] three groups were defined. Respondents who reported no physical activity (i.e., inactive) were assigned to physical activity level I; participants who reported the physical activity that was less than the recommended level but greater than none (i.e., insufficient) were assigned to physical activity level II; and those who reported moderate physical activity for at least 30 min per day on at least 5 days per week or vigorous physical activity for at least 20 min per day on at least 3 days per week (i.e., recommended level) were assigned to physical activity level III.

Statistical analysis: Data was handled by the principal investigator and entered into Microsoft Excel, which was coded before being sent to a statistician for analysis. Data analysis was done using SPPS version 19.0 and the independent samples t-test and multiple logistic regression was applied. Data was only considered significant when p was less than or equal to 0.05.

RESULTS

A total of 576 questionnaires were distributed, out of which, only 451 could be included in the study as the rest were either not returned or had incomplete responses. The response rate was hence, 78.3%.

There were 222(49.2%) males and 229(50.8%) females who participated in the study. The mean BMI of the study participants is depicted in table 1. It was observed that most males belonged to the "overweight" category (56.3%), while females belonged to the "normal" category (56.3%). A lesser number of females reported being obese (5.4%) as compared to their male counterparts. A significant difference (p=0.05) was observed between males and females in the underweight category.

	Males	Females	Total	p value (from t-test)
Underweight (≤18.4)	26(11.7%)	59 (25.7%)	85 (18.8%)	0.05*
Normal (18.5-22.9)	25 (11.2%)	129 (56.3%)	154(34.1%)	NS
Overweight (23-24.9)	125 (56.3%)	29 (12.6%)	154 (34.1%)	NS
Obese (≥25)	46 (20.8%)	12 (5.4%)	58(13%)	NS
Total	222(49.2%)	229(50.8%)	451(100%)	NA

Table 1. BMI of the study population. (NS: Non-Significant, NA: Not Applicable)

The physical activity levels of the study population is depicted in table 2. Most males were found to be insufficiently active (41.8%), while 44.8% females were found to be in the active category. Statistical differences were observed while comparing the physical activity levels between the Insufficiently Active category between males and females (p=0.02).

DISCUSSION

The present study, which aimed to assess the Knowledge, Attitude and Physical Activity Levels among various healthcare professionals revealed that

most of them belonged to the normal (34.1%) and overweight (34.1%) category. Mostly, males were found to be overweight (56.3%) and females were found to be in the normal range of BMI (56.3%). The results are higher as compared to Singh A et al.[9] who reported that dental faculty were either "overweight" or "obese". Thakar S et al.[10] who also conducted their study among dental professionals, revealed an almost equal number of normal (32.9%), overweight (27.3%) and obese (35.2%) dental professionals.

Physical Activity Level	Males	Females	Total	p-value (MLR)
Inactive (I)	86 (38.7%)	41 (17.9%)	127 (28.2%)	NS
Insufficiently Active (II)	93 (41.8%)	85(37.1%)	178 (39.5%)	0.02*
Active (III)	43(19.5%)	103 (44.9%)	146 (32.3%)	NS
Total	222(49.2%)	229(50.8%)	451 (100%)	NA

Table 2. Physical Activity levels of the study population. (NS: Non-Significant, NA: Not Applicable, MLR: Multiple Logistic Regression)

In disagreement to these results, Suija et al.[11] reported no statistically significant relationship between the level of physical activity and general characteristics (age, living area, BMI, time spent sitting) among 198 Estonian family doctors, respectively. Lobelo et al. concluded that there is a need among medical schools need to increase the proportion of students adopting and maintaining regular physical activity so as to significantly increase the quality of future physical activity counselling being delivered by doctors.[12]

Most of the healthcare professionals in the present study reported being Insufficiently active (39.5%), and a majority of males (41.8%) being insufficiently active while most females (44.9%) reported being in the active category. The results are in agreement to Anand T et al.[8] (47.2% Insufficiently active study population) and Han MA et al. (33.1%, Korean Population).[13]

Such increased BMI percentages and physical activity from the normal levels are of particular concern and specially among developing nations as these great nation are undergoing an epidemiological change, as a result of which, non-communicable diseases are becoming the leading cause of deaths in the community and physical activity is an important tool in the in the fight against obesity/increased BMI values.[14] The main reasons for such decreased physical activity may be due to the working hours of the clinics, which mostly operate in the evenings as it is convenient for the working population to visit them. A few healthcare professionals also work in colleges during the day and then continue with their private practice in the evening, which leave them no time to focus of self-care.

CONCLUSION

Based on the results of the current study, it is advised that healthcare professionals be regularly reminded regarding the benefits and they should be encouraged to pursue more physical activity on a daily basis.

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