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MESSAGE FROM EDITOR IN CHIEF

The recent issue of the newsletter "PHARMAVISION" continues to educate the students as well as all our readers with the contemporary information in the field of pharmacy.

We believe that this newsletter not only acts as an instrument of knowledge but also helps in promoting progressive research ideas. The diversity and novelty of the articles in the newsletter gives us confidence that it is serving the purpose for which its publication was initiated. I hope the readers will enjoy reading the articles in this issue and give suggestions to improve the quality of the newsletter.

I congratulate the entire team involved in publishing of the newsletter for their efforts and hard work.

Dr. Rafeeq Alam Khan

Meritorious Professor
 Dean Faculty
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FROM THE DESK OF EDITOR

We as humans have witnessed and still going through one of the most perplexing episodes in the history of mankind. The trauma and the pursuing crisis that COVID – 19 has brought upon all of us will surely leave lasting emotional and psychological effects. In order to counter this it is pertinent to remember more adamantly than ever that thoughts have power. If you think positively you are putting more power into your thoughts and if you add positive action, you are most likely to overcome all obstacles. The biggest difference between successful and

non-successful people is 'attitude'. Successful people tend to have a positive attitude towards life and with pro-active habits they execute things. The power of thinking big comes with a positive attitude towards life. Thinking positively can widen the horizon of your life and bring you greater opportunities and greater success. It is said that thoughts create the circumstances and situations of one's life. Positive thoughts can help overcome whatever impediments you are facing at the moment but only if you back them with action and faith. It

necessitates that you keep your mind open to recognize opportunities and welcome them.

We at PharmaVision, hope that may this year mark the beginning of a more positive and progressive journey for all of us.

Dr. Sidra Tanwir

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ORIGIN OF LIFE: WATER

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Water is essential for life and without it a person cannot survive for more than a few days. Alexis Correl, winner of Nobel Prize, specified that the secret of life is to nourish the cells and allow them to clean their toxins. If water could not enter into cells due to any reason, cells would dehydrate and die of their own waste products. Science in 17th century revealed that life originates from protoplasm which constitutes about 80 to 85 % of water; however far before this Quran revealed that life originates from water. This fact has been narrated in Quran several times in different ways:

- 1- And we created from water every living thing. Will they not then believe (Al-Ambiya 30).
- 2- And God has created every animal from water, of them there are some that creep on their stomach, some walk on two legs and some walk on four legs. God creates what He wills for and has power over all things. (Al-Noor 45)
- 3- It is He who created man from

water and then established relationships of family and marriage (Al-Furqan 54)

Large civilization have always grown around rivers and streams for example Mesopotamia, was located between the major rivers, Tigris and Euphrates. Prehistorically the people of Egypt, were also completely dependent on the water of River Nile. Even today large metropolitan cities like London, Montreal, Paris, New York, Shanghai, Tokyo, Hong Kong, Karachi and Mumbai are successful due to their easy access to sources of water.

The human body is composed of 75% water. The brain contains 85% water and the blood constitutes around 92% of water and is responsible for transporting oxygen and essential nutrients to the body tissues and serves to remove toxins from the body to keep the whole system nurtured for optimum productivity. Moreover, water also acts as a lubricant that softens joints and shelters tissues from shock and trauma. It also adjusts body temperature, aids in digestion and

strengthen the muscles and the skin. At an average, a person loses about 2.5 liters of water per day through urine and sweating which is quite a significant amount and has to be replaced, since without suitable hydration, cells cannot survive. In the United States, it is estimated that about 22% of water comes from our food intake while it would be much higher in European countries.



THE WATER CONTENT FOR SELECTED FOODS MODIFIED FROM POPKIN, 2010



Percentage	Food Item
100	Water
90–99	Fat-free milk, sweet melon, strawberries, watermelon, lettuce, cabbage, celery, spinach
80–89	Fruit juice, yogurt, apples, grapes, oranges, carrots, broccoli, pears, pineapple
70–79	Bananas, avocados, cottage cheese, potato (baked), corn (cooked), shrimp
60–69	Pasta, legumes, salmon, ice cream, chicken breast
50–59	Ground beef, hot dogs, feta cheese
40–49	Pizza
30–39	Cheddar cheese, bagels, bread
20–29	Pepperoni sausage, cake, biscuits
10–19	Butter, margarine, raisins
1–9	Walnuts, peanuts, chocolate chip cookies, crackers, cereals, pretzels, peanut butter
0	Oils, sugars

Dr. Batmanghelidj, while emphasizing the importance of water stated that the root cause of many diseases is chronic dehydration that we try to tackle with medicines which is not appropriate. He further illuminated that water controls all functions of the body and in fact all early symptoms of aging are due to dehydration of the organs and is associated with damage of the cells caused by free radicals.

Dr. Batmanghelidj, believed that dry mouth is also a sign of extreme dehydration which might be exhibited due to constipation, peptic ulcer, arthritis, high blood pressure, asthma, allergy, diabetes, lower back pain, angina, migraine headaches, stress and depression.

To keep the body hydrated, it is recommended that a person should take at least 8 to 10 glasses of water per day. Although water covers about 71% of the earth's surface but only 3% of it is fresh water out of which only 1% is available for drinking, while the rest is protected in the form of glaciers or concealed deep within the ground.

There are about five documented locations in the entire world where people normally live to about 100 years of age with good health and without cancer or dental caries. They are also able to bear children in old age. The most famous of these places is Hunza, situated in the mountains of Himalaya, in the north of Pakistan. There are also villages in France, where people are extremely healthy. Investigations have revealed that the foremost reason for the long-lives of people in these

areas are their local water and healthy dietary habits.

People of Hunza usually eat plant-based raw diet. They do not have access to a large amount of fuel for cooking food nor are there many animals available to eat. They also consume fruits like apricots, cherries, grapes, plums and peaches.

Dr. Henri Coanda, known as the father of fluid dynamics, spent almost six decades studying the properties of water in Hunza, trying to determine what it was in this water that caused such beneficial effects for the body. He revealed that several properties of water in Hunza, were different from normal water. It had a different freezing and boiling point, viscosity and surface tension compared to regular water.

The water in Hunza comes from a glacier which is rich in negative hydrogen ions and colloidal minerals. This negative charge of the water links with positively charged molecules, generating more energy. The surface tension of water in Hunza, is 68 dynes/cm similar to the surface tension of the body fluids, thus making it more comparable with body fluids and is hence readily absorbed. Since the surface tension of regular drinking water is 73 dynes/cm, thus water of Hunza, had more ability to hydrate and nourish the body.

Oxidation processes inside the body produces free radicals which damage DNA causing a variety of problems like accelerated aging, cancer and decreased immune functions. The water in Hunza have microscopic silica molecules, free electrons and an alkaline pH

which helps to remove toxins and free radicals from the body and make a more alkaline cellular environment which is believed to be one of the chief deterrents to tissue damage, cancer, aging, the growth of disease organisms and oxidation. Silica (SiO₂) when held in water in colloidal form tends to possess many times more antioxidant properties than any other antioxidants like Vitamin C, Coenzyme Q10, green tea and Vitamin E.

Silica is a natural element that fortifies the connective tissues like muscles, tendons, hair, ligaments, nails, cartilages and bones. It is also crucial for healthy skin. The synthesis of cartilage in human body proceeds in association to silica hence deficiency of silica causes reduced skin elasticity and may also sluggish wound healing capacity of the body. Other sources of silica include mango, strawberries, cucumber, green onion, green beans and beet root. However, a large quantity of silica ingested from these sources is not fully absorbed. The best source of readily absorbable form of silica is only pure natural water where it is present in soluble colloidal form.

The colloidal silica in water has capacity to bind with unwanted elements such as viruses, bacteria and inflammatory pathogens, thus making them harmless. This nature of silica makes it suitable for wound-healing, as well as inhibiting the pimples to some extent.

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ROLE OF SPICES AND CULINARY HERBS IN HEALTH CARE PRACTICE

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Spices are distinguished as herbs, which may be a part of seeds, fruits, roots or leafy green plants and are used as a flavoring agent or for garnishing purposes. If the traditional knowledge about spices is combined with the current science and technology, new possibilities will emerge to promote the use of spices in cooking; not just for their flavor but also for their health advantages. There is growing evidence that spices and herbs have antioxidant, anti-inflammatory, anti-carcinogenic, glucose and

cholesterol-lowering as well as cognitive and mood-influencing properties. Over the last decade, research has shown a wide variety of health benefits associated with their bioactive ingredients; sulfur-containing compounds, tannins, alkaloids, phenolic diterpenes, and vitamins, particularly flavonoids and polyphenols. Due to their high phenolic content, spices and herbs such as oregano, rosemary, clove, sage, and cinnamon are great sources of antioxidants. Frequent consumption of spicy food is also associated with a decreased risk of mortality from cancer, ischemic heart disease and respiratory system illness. However, the real significance of spices and herbs in health maintenance, particularly in terms of

preventing the development of chronic, non-communicable diseases is still under investigation. Some few examples of the culinary herbs and spices are discussed below.

Turmeric is often referred to as the "Queen of Spices." It is a spice derived from the *Curcuma longa* plant. It has been used as a spice and medicinal plant in India for thousands of years. It is usually referred to as "Indian Saffron."

Ginger is derived from the rhizomes of the plant *Zingiber Officinale* Roscoe and is possibly the most frequently used culinary agent and spice in the world. Numerous chemicals in ginger including shogaol, zingerone and gingerols, may contribute to its health advantages. Ginger is an effective treatment, particularly

for nausea, diarrhea, stomach pains, asthma, respiratory problems, toothaches, gingivitis and rheumatoid arthritis. Ginger's phenolic components are well-known for their ability to alleviate gastrointestinal discomfort.

Cumin is a seed that grows on a tiny umbelliferous plant. Cumin seeds may also have anti-carcinogenic qualities, according to recent research. Cumin's health advantages for digestive issues have been widely documented throughout history. It is beneficial for flatulence, diarrhea, indigestion, nausea, and morning sickness and is also used as a tonic for dyspepsia.

Black pepper is the fruit of the Piperaceae family. It is used as a spice as well as for medicinal purposes. Since ancient times, black pepper has been one of the world's most commonly traded spice. It is a good source of manganese, potassium, iron, calcium, vitamin A, C and K, as well as zinc and chromium. Black pepper is beneficial for respiratory diseases, coughs, constipation, diarrhea, indigestion, the common cold, anemia,

muscular strains, impotence, dental illness, pyorrhea and heart diseases. Additionally, it raises the hydrochloric acid secretion in the stomach, which aids in digestion.



Garlic is frequently used as a flavoring agent or condiment, around the world due to its strong flavor. Garlic is a member of the onion family of plants. The plant was originally indigenous to Central Asia. It is used as a significant nutritional component and medicine in several cultures throughout the world. Garlic is excellent for strengthening the immune system, has a high level of Vitamin C and is recognized as a potent anti-cancer food. Due to the high potassium level, it can aid in nutrient absorp-

tion and helps to prevent digestive disorders and fatigue.

Cardamom is derived from the Zingiberaceae family and belongs to the genera Elettaria and Amomum. It is considered to be beneficial for infections of the teeth and gums, throat issues, lung congestion, tuberculosis of the lungs, inflammation of the eyelids, gastrointestinal diseases and dissolving kidney and gall bladder stones. Additional health advantages of cardamom include cholesterol management, cancer prevention, relief from cardiovascular problems and improved blood circulation throughout the body.

Anise is a perennial spice and medicinal plant that belongs to the family Apiaceae. Today, anise seeds are a significant natural raw material utilized in cosmetics, as a fragrance, culinary and pharmaceutical industries. Anise is an excellent medicine for asthma, microbiological infections, head lice, menstrual irregularities, skin diseases, pain alleviation and other digestive issues.

FACULTY UPDATES

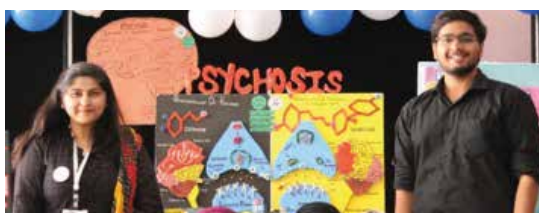
On 1st July 2021, Faculty of Pharmacy, Ziauddin University, organized the Summer Gala 2021, at its Link Road Campus, to welcome the students to the new campus. It was inaugurated by Pro-Chancellor Dr. Nida Hussain. The Gala comprised of various stalls with delicious food and drinks along with various gaming activities.

World Pharmacist Day was celebrated at Faculty of Pharmacy this year to recognize the role of pharmacists under the theme "Pharmacy: Always Trusted for Your Health". This theme was chosen this year worldwide to draw special attention to the value of trust in the health sector and the practice of pharmacy. The celebrations were carried forward with a cake cutting ceremony, poster competition and lunch for the students.



Final year students of the Faculty of Pharmacy, Ziauddin University participated in the Poster competition and celebration by Martin Dow Limited and secured 3rd position in the inter-university poster competition on the topic "Role of Pharmacist in the Emerging World". Students from 4th and 5th year participated in 'Miniature Pharmacology Model Competition' which was organized by Science Club, Faculty of Pharmacy and Pharmaceutical Sciences, University of Karachi. Several teams of different universities participated in this competition and amongst them, the team from the Faculty of Pharmacy Ziauddin University secured 1st Position.

Pharmaexhibition was organized by the Faculty of Pharmacy on 4th November 2021. Vice-Chancellor Dr. Syed Irfan Hyder – inaugurated the event in which 22 multinational and



local pharmaceutical companies participated in providing preparatory information to students about different career options. Several students were interviewed for pharmacy internship programs and apprenticeships. This exhibition served as a core stone in the professional development of the students and guided them regarding their significance and role in the pharmaceutical industry.

On 16th November 2021, Wilshire Pharmaceuticals conducted a Counselling session for the students of 4th and final year students. The COO, Aqil Hussain conducted the session on the theme of Personal Branding.

Graduate week was celebrated by the Final year students in order to mark the commencement of their five year journey. Various activities were carried out by the students both on campus and outdoors.



HOPE MENTAL WILLPOWER AND WAY-POWER

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Hope is a confident state of mind based upon anticipation of positive outcomes of events and circumstances in one's life. Desmond Tutu described hope as being able to see light in a situation despite all the darkness.

The thoughts of will power, way-power and hopefulness are interconnected. Psycholo-

gist Charles Snyder defines willpower as motivation to keep trying and way-power as the ability to find new pathways to reach a goal. According to him, hope is the sum of the mental willpower and way-power one has for their goals. Honore De Balzac also stated that there is no such thing as great talent without great willpower.

Thoughts work as powerful forces for an individual to achieve his goals. Dr. Lopez states that hopeful thinking inspires a person to take action, to make a plans and to move them forward. Whereas **willpower** is the

motivational force behind hopeful thinking. Willpower is one's determination as well as commitment which encourages a person to move in the direction towards their goal. Willpower is a mixture of thoughts like I can, I will try, I will do this task etc. A clear goal in mind helps to spark willpower and are reason for active and empowered thoughts. Whereas, way-power are the mental maps that monitor hopeful thoughts. It is a mental capability to search for highly effective means to accomplish goals. Hope reveals a mental state driven by willpower and way power to reach the desired destiny. In order

to be highly hopeful a person should have high willpower as well as way-power.

Why Hope is so important: According to studies a hopeful person tends to have positive views, better control over situations, high problem-solving skills, great self-esteem as well as positive influence on others. In comparison less-hopeful people tend to have negative emotions that include anger, fear, guilt, anxiety as well as depression.

Shane J Lopez included statistical analysis of more than one hundred hope studies in his book "Making Hope Happen" and concluded that hope can lead to 12% increase in academic performance, a 14% increase in workplace outcomes and a 10% increase in emotional happiness. He elaborated his findings with everyday examples such as a group of hopeful students are able to achieve better grades when compared to those students who are less hopeful. Similarly a group of hopeful salespeople tend to sell

as much product in lesser days than their colleagues with lower hopes. Hopeful people tend to live happier lives as well. Matthew Gallagher, an Associate Professor of Clinical Psychology at the University of Houston said: "Hope is how we can think about our goals for the future, the extent that we can identify pathways or strategies to achieve those goals and then maintaining the motivation or the agency to keep working towards those goals, even in the face of obstacles or setbacks".

Hope and Optimism: Hope is about personal action to accomplish a desire while optimism is expecting better things to happen. Gallagher said that hope and optimism are positive potentials for future but hope is about one's efforts to achieve goals and optimism is to believe that things will work in a positive manner without knowing how. Hope is not always be easy but it is helpful to overcome many problems. According to Colier, hope carries oxygen into our

consciousness. By generating hope we get motivated. Motivation generates positive acts because one feels that there are chances of achieving desired outcomes. Without hope there will be no motivation.

Maintaining Hope: According to experts hope is not always easy to hold on to. According to Colier gratitude is important to maintain hope. Although that might not resolve problems immediately but it creates happiness for that time. Gratitude and appreciation are within our control and can help to maintain hope in complicated times. Although hope does not guarantees or ensures success however it leaves room for better unknown things. Additionally it creates a feeling of general well-being that things are moving in the right direction.

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TELEMEDICINE: A WAY OF DISTANT HEALING

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Telemedicine is a way of delivering healthcare services by the means of telecommunication. World Health Organization (WHO) defines it as "the practice of medical care using interactive audiovisual and data communications. This includes services such as the delivery of medical care; diagnosis, consultation and treatment, as well as health education and the transfer of medical data".

Even before the outbreak of COVID-19, telemedicine as well as other forms of e-health, were increasingly being utilized by healthcare professionals to provide palliative care to patients. However, as the pandemic emerged in 2019 the role of this approach to provide healthcare services further heightened. This was due to the fact that many patients were reluctant to reach out to hospitals due to the fear of catching the virus and also many hospitals were operating over their capacity and hence unable to accommodate newer patients.

In order to counter these issues the strategy of Forward triage was employed within the healthcare system. This strategy is frequently utilized in the 21st century to regulate the surge in seeking the health care services. This helps to assess and sort patients depending upon their condition even before they arrive in the emergency department. As per the Forward Triage

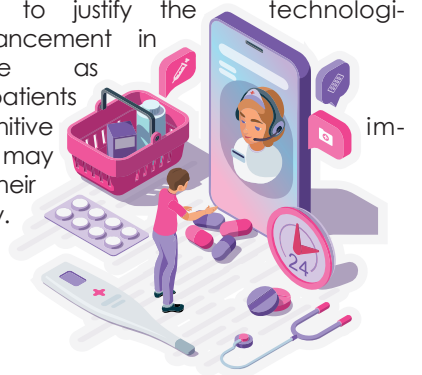
strategy, the patients are effectively sorted and screened which can limit and protect the exposure of both the patients and the clinicians from COVID-19 and/or other communicable diseases. Patients and physicians can communicate easily 24/7 using smartphones and webcams and the healthcare provider can easily obtain travel and exposure history from patients from the safety and comfort of their homes.

Some major advantages of this strategy are as follows:

- It reduces unnecessary hospital visits that ensures cost saving for both the patients and healthcare providers.
- For geriatric patients, it increases the quality of life by allowing increased independence and self-management with increased choices as they can obtain healthcare services from the comfort of their own homes decreasing their dependence on others.
- It reduces the burden on the caregivers.
- Patients with reduced mobility, a common problem with geriatric patients well benefit from telemedicine.
- It reduces workforce pressure for health and social service providers.
- Risks associated with fall injuries may greatly be reduced via utilizing telecommunication means of obtaining healthcare services.
- Some equipment that may help increase efficiency and accuracy of patient's diagnosis during telehealth appointments are remote vital monitoring, virtual stethoscopes, wireless scales, thermometers, digital otoscopes, pulse oximeters, etc. Devices must be user-friendly

and inclusive in design as they need to be able to cater to a wide demographic of people which will include people with disabilities, for example, these must be operable by people who may be visually impaired or have limited mobility, they may employ using audio commands, etc. In addition, these devices need to be easily operable by uneducated or less tech-savvy people. Multi-user devices can be used in institutions where there is no risk of infection. These devices also have a few limitations and issues such as inappropriate calibration or high maintenance and these must also be resolved to assure the achievement of accurate outcomes. Practical issues such as regular calibration and maintenance of telehealth devices must be clearly stated and addressed.

The world is rapidly advancing and new technologies are being introduced in the field of health and medicine to enhance patient satisfaction and compliance. However, research data supporting usefulness must be collected to justify the technological enhancement in healthcare as some patients with cognitive impairment may lose their autonomy.



STRESS AND OBESITY

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In this era, our society is facing two highly prevalent problems which are interconnected; stress and obesity. Stress not only interferes with cognitive processes such as function controlling system and self-regulation system, but can also bring behavioral changes such as increased consumption of food that contains high calories like fat or sugar. It also induces decrease physical activity and most important behavioral change is shortening of sleeping time. Stress also tends to trigger physiological changes in the hypothalamic-pituitary-adrenal axis, reward processing in the brain, and possibly the gut microbiome. Finally, stress can stimulate production of biochemical hormones and peptides such as leptin, ghrelin, and

neuropeptide Y. Obesity itself can induce stress mainly due to the high prevalence of weight stigma. The prevalence of obesity has doubled since 1980 to an extent that nearly one third of the world population falls under the category of being obese. According to WHO data survey more than half a billion people were reported to be obese worldwide. Both overweight and obesity have shown a marked increase over the past four decades.

In general, the stress response can be considered as a homeostatic response that is generated to meet the energetic demands of an environmental threat. As such, it is not surprising that continuous exposure to stressful situations is often associated with metabolic imbalance. Hence, stress can significantly impact the ability to maintain a healthy weight and prevent from losing weight. Whether it is the result of high levels

of the stress hormone; cortisol, unhealthy stress-induced behaviors or a combination of the two, there exists a link between stress and weight gain. Researchers have long known that rise in the cortisol can lead to weight gain, which is released by the adrenal glands along with adrenaline in stress situations.

This article therefore traces the contribution of weight stigma to stress and obesogenic processes, ultimately describing a vicious cycle of stress to obesity. Current obesity prevention efforts focus solely on eating and exercise, however stress is also an important factor in weight gain.

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