SLMA NEWS
THE OFFICIAL NEWSLETTER OF THE SRI LANKA MEDICAL ASSOCIATION
MARCH 2017, VOLUME 10, ISSUE 03

SLMA HEALTH RUN & WALK 2017
In collaboration with
The Sri Lanka College of Pulmonologists
04th June 2017 @ BMICH
keep the date free!

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130th Anniversary
Annual Medical Congress
13-16 July 2017
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The Sri Lanka Medical Association

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Dear Members,

The past month has witnessed many challenges faced by our profession that goes well beyond the control of many regulatory and professional institutions. Striking doctors have created much inconvenience, disarray and disruption to the public, while protesting medical students have created a major setback to the progress of their own undergraduate medical education. Our sincere hope is that all parties can work towards finding solutions to the issues at hand without further disruption of clinical services and of valuable learning and educational progress.

Meanwhile, the SLMA was formally invited by the British Medical Association (BMA) to engage in a discussion on ‘the future role of the doctor and patient-centredness.’ The BMA arranged these discussions as a run up to an international symposium on this topic scheduled for April 2017. Documents studied included a recent GMC publication on why medical professionalism matters. These highlight how medical training must ensure a better understanding of medical professionalism starting from undergraduate curricula that should encourage students to reflect on the realities of practicing as doctors who face complex human interactions. The deliberations were around current problems faced by medics the world over: with health care systems, an insufficient focus on community based interventions, barriers to a holistic approach, physician burnout, unregulated web access to health information, lack of professionalism and drawbacks of an evidence-based approach to the practice of medicine. A noteworthy feature was the inclusion of representatives from non-medical institutions that provided an excellent balance to the direction of discussion. My suggestion to our profession is that it is high time our local leads invite the lay public’s view in addressing the issues faced by our profession with trust, accountability, scrutiny and overall common sense. The mental well-being of our doctors of today and in the future must also be preserved through a better understanding of the medical humanities and applied ethics.

The month of March 2017 witnessed the first ever national day to commemorate Gestational Diabetes Mellitus, on 10th March, in keeping with the Colombo Declaration signed by Honourable Minister of Health in September 2016 as a priority of the South Asian Initiative for Diabetes in Pregnancy (SAIDIP). Sri Lanka is the first country in the region that took this up to a national scale. The SLMA is happy and proud to have played an advocacy role since 2012 with the Sri Lanka College of Obstetricians & Gynaecologists and the Ceylon College of Physicians, in seeing this commitment of the Ministry of Health through the Family Health Bureau to address primordial prevention of diabetes and metabolic disease across generations.

You would be happy to hear that the SLMA commemorated its birthday, on the 26th of February, with an excellent History of Medicine Lecture on Neurology by a local legend and current Chairman of the Board of Trustees - Dr J B Peiris. This was the sixth lecture in this series, and the inaugural Dr C G Uragoda lecture. Our best wishes are extended to Deshabandu Dr C G Uragoda, past president of SLMA, editor emeritus of the CMJ, a renowned scientist, prolific writer, historian and conservationist. It was my personal privilege to wish my two teachers in Chest Medicine and Neurology, who taught us the fundamentals of everything we know today of these fields of Medicine.

The SLMA indeed has a proud history of being the oldest national medical association in Australasia. We celebrated its formation 130 years ago, led by Sir William Kynsey with a group of 15 other doctors, to form the Ceylon branch of the British Medical Association. Over the next six decades it grew from strength to strength, to be named the Ceylon Medical Association in 1951, and achieved its permanent abode in the 77th year. The generosity of Dr E M Wijerama who donated his house, which we fondly call today - the Wijerama House, must be always remembered with gratitude. It is noteworthy that McCarthy Road was renamed after this great man. We became the Sri Lanka Medical Association in our 85th year and now boast of over 4000 members both locally and overseas. We also recall with gratitude the vision of our 125th President Prof Vajira Dissanayake and his Council, who initiated this important lecture series. It is commendable that the SLMA recognized the need to address the study of medical history, a subject very close to the heart of Dr C G Uragoda, with a view to add value to our profession. It is noteworthy that Sir William Osler who formulated a section of the Royal Society of Medicine to the specific study of the History of Medicine said shortly before his death, that this initiative was one of the best things he had done for the medical profession.

I invite all practicing doctors and students of Sri Lanka to join the SLMA and work towards making our profession a leading light in our society.

With my best wishes,

Chandrika Wijeyaratne
President SLMA
Malaria is a potentially fatal disease and causes severe epidemics. It is endemic in more than 100 countries worldwide causing disease and death for millions even today.

Malaria has been endemic in Sri Lanka for centuries and associated morbidity and mortality has incurred billions of rupees affecting the country’s development and economy. Sri Lanka has achieved remarkable success by eliminating malaria. The last indigenous case of malaria was reported in October 2012. Sri Lanka received the WHO Certificate for Malaria Elimination in September 2016 after a rigorous evaluation process.

Although indigenous transmission of malaria has been controlled in the country, Sri Lanka still encounters imported malaria cases mainly from Sri Lankans travelling to and from malaria endemic countries.

Sri Lanka is challenged with maintaining the achieved success as the potential for malaria resurgence is high due to the presence of the vector and increased migration to and from malaria endemic countries. There were 36 imported malaria cases in 2015, 41 cases in 2016. There were 09 imported malaria cases reported up to February 2017.

Clinical Vigilance

Vigilance of the health services is a key determinant factor in the prevention of reintroduction of malaria. Analysis of malaria cases in the recent past has revealed occasions of delayed diagnosis, leading to severe malaria, while the patient is admitted in the health institutions. Missing a malaria diagnosis in a patient can hamper the credibility of our medical profession with regard to accurate diagnosis and prompt treatment. We also have a social responsibility towards prevention of reintroduction of malaria in Sri Lanka.

It is important to ask regarding an overseas travel history during the past one year, from all fever patients and consider the possibility of malaria. Attention should also be focused on the risk groups mentioned below.

High risk groups for imported malaria in Sri Lanka

- Gem traders travelling to Mozambique and Madagascar
- Military personnel and Police engaged in UN peacekeeping missions / training in malaria endemic countries
- Businessmen frequently travelling to India & other malaria endemic countries
- Travellers (local & foreign) to & from malaria-endemic countries
- Foreign labor groups (specially from India & China)
- Sri Lankan returnees from South India

Diagnosis

The gold standard diagnostic method is quality assured microscopy. Rapid diagnostic test kits which provide malaria species diagnosis within 20 minutes are also available in selected government hospitals and in the private sector.

Once malaria has been diagnosed, treatment should be started immediately to prevent development of severe malaria. Laboratory confirmation by microscopic examination of blood smears and/or rapid diagnostic tests (RDT) is mandatory prior to initiation of anti-malarial treatment. Presumptive treatment with antimalarial drugs is no longer recommended. The treatment guideline has been revised in 2014 and is available in the Anti Malaria Campaign web site http://www.malariacampaign.gov.lk/

Malaria treatment depends on the species of the malaria parasite; whether it is mono infection or mixed infection; severity of the disease condition and the physiological state of patients.

For mono-infection with Plasmodium vivax, the recommended drug is chloroquine followed by primaquine for 14 days to eliminate liver forms. For Plasmodium falciparum, artemisinin based combination therapy (ACT) is recommended with a single dose of primaquine. For severe malaria intravenous artesunate is recommended as the first line therapy.

**Summary of Specific Treatment schedules for Malaria**

- Mono-infection with *P. vivax*: CQ & PQ (14d)
- Mono-infection with *P. falciparum*: ACT & PQ (single dose)
- Uncomplicated mixed infections with *P. falciparum* and *P. vivax*: ACT & PQ (14d)
- Severe Malaria: IV Artesunate

Once a suspected case of imported malaria has been identified, the AMC conducts a series of activities to prevent outbreaks leading to resurgence. These activities include, confirming the diagnosis; providing information & necessary drugs; contact tracing & screening for asymptomatic carriers; entomological investigation to investigate possibility of onward transmission through vector mosquitoes, etc. Prompt notification to Anti Malaria Campaign (AMC) is vital as these activities are needed to be conducted within two weeks of identification of a case to prevent a possible outbreak.

**Inform all suspected malaria cases to the AMC immediately via the 24-hour hotline**

8117 829 829
071 284 1767

**Prevention**

Persons planning to visit a malaria endemic country should be given information on the risk for malaria and mosquito bite prevention methods. Malaria chemo-prophylactic drugs are given after assessing the risk on an individual basis.

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These persons should be referred to AMC/ Regional Malarial Officers at least two weeks before leaving the country. Weekly doses of chloroquine or mefloquine are recommended as malaria prophylaxis depending on the country of visit. These prophylactic drugs should be started one week before leaving Sri Lanka and should be taken throughout the stay in the malaria endemic country and for 4 weeks after returning to Sri Lanka.

Any fever up to one year after returning to Sri Lanka, from a malaria endemic country, should always be considered as malaria until proven otherwise.

Let’s together keep Sri Lanka malaria free

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MALARIA COUNT as at 15th March 2017:

14

All are imported!

Let’s keep Sri Lanka malaria free

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A PATIENT’S LAMENT

DEATH LURKS IN A CORNER...

By Ranmini Abeyweera

Dear Doctor, I am waiting for you…
For your gentle advice and medicine…
Last month I waited for two long hours…
Hungry, tired, frustrated, sick.
I watched the others with equal discomfort,
The hospital disinfectant made me nauseas,
The crowd near your door waiting for you, obnoxious
I sat on the cold bench and read -
“Life is uncertain, Death is certain”

I finished my slim book, you walked in smart, clad in white…
This week, I once again sat down on the cold hospital bench
I knew you will be late, so had another slim book,
waiting to be read - “The path to Nirvana”…

I sighed, it will be a long wait for that- eternity in fact.

You walk in late, my life hanging like a dew drop on a sharp blade of grass…
You were late two hours again, and spent 5 minutes with me.

You smiled, spoke to me gently asked me about my aches and pains…
‘Thank you doctor’ I said and smiled relieved yet…
As you rang the bell to dismiss me, it sounded like a death knell to me…

I had to take the bus home, it was dark, and the sun had set.

Thunder rumbled, a storm threatening to fall
Lightning struck - I saw Death lurking in a corner.

Dear Doctor, my saviour –please don’t be late next time

Death has no mercy like you,
He will take me, he will laugh like Lucifer
He will not smile gently like you nor speak kind words to me.

Dear Doctor, My Saviour – PLEASE don’t be late…
That is, if I come to see you next time…
Cos I see Death lurking in a corner…

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Contd. from page 03

CHALLENGES...

Let’s together keep Sri Lanka malaria free
Are your patients Suffering from Heartburn AND Indigestion?

Switch to...

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Rapid and longlasting relief from heartburn and indigestion
THE EMOTIONALLY INTELLIGENT DOCTOR

Piyanjali de Zoysa, Ph.D.
Professor in Clinical Psychology
Faculty of Medicine, University of Colombo
ptdz@sltnet.lk

“... it was a long night, spending time with a dying patient, whilst also directing the medical officers in their work. Your husband was annoyed, to say the least, for yet again missing out on your daughter’s school play. With hardly any sleep, the next day, you go to an over-filled clinic. As you approach it, you hear a patient crying loudly while her father is heard screaming at the nurse because you, the doctor, is late. You brace yourself, take a deep breath, adjust your mind and with a look of kindness enter the scene …”

The demands made on a doctor are many - we don’t quite evaluate how many there are. Routine clinical care, attending to emergencies, administration, teaching, and team work are some of the many roles they play. Indeed, it is a noble profession - for however much wealth, prestige, and friends one has, when one’s health is compromised, the doctor’s help is essential.

Whilst skills in diagnosis and treatment are indispensable, there is another facet that is essential for the doctor. We refer to this as emotional intelligence (EI), a notion relatively new in the Sri Lankan health sector though widely accepted in many other parts of the world. The doctors who are most sought-after are often not the ones who make the smartest diagnoses or charge the least. The respected doctors are the ones that understand and respond to the emotional needs of their patients. They actually listen deeply to the patient and her family, and is available to ease their concerns. These skills are the foundation of a healer as much as part of their clinical knowledge, stethoscope, a CT scanner or the smart phone.

So, what is emotional intelligence?

EI, introduced by psychologists John Myer and Peter Salovey, about two decades ago, was popularized by psychologist Daniel Goleman. Until research evidence on the far reaching impact of EI, the prominence of traditional intelligence (very roughly considered as academic achievement) in life’s success was unquestioned. Indeed, the revelation that EI is the cornerstone in personal and professional success was a significant paradigm shift in that day, and at times even today. EI is a composite of five characteristics:

1. Awareness of one’s emotional states - many of us are not aware of our emotional states - may it be joy, contentment, anger, envy or sadness. We seem engulfed in our emotions, living mostly in an automatic pilot mode. Life seems to drift by, in a haze, rather than living fully in each rich moment of our emotional lives. Rather than we control our lives, we seem to be controlled by our emotions, much like the leaves of a tree, swaying to the winds coming from any direction. On the other hand, a person who is aware of their emotional state is one who would be able to make appropriate decisions at any given moment - wise decisions, rather than emotionally driven decisions. And in the profession of medicine, this is all important.

2. Ability to manage one’s emotions - Once we are aware of our emotions, we could then manage them appropriately, before it manages us. The initial occurrence of an emotion - may it be joy, anger or envy - appears on its own accord with little input from us. We know all too well that though we would be delighted to be flooded with happiness throughout the day, it is rarely so. Instead, the negative emotions such as irritation, dejection, restlessness and envy seem to occur on its own, in large doses. However, once it does occur, we do have the option of what we do with this emotion - we could swim along with wherever it takes us, or else, steer it in socially and personally appropriate ways.

Hence, when envy presents itself, we could decide to pass a hint at the envied, or else decide to take the wise action of not acting on the envy and even better, being kind and complimentary to the subject of our envy. Of course, in order for us to act in such wise ways depends on how well developed our first quality of EI is - awareness of one’s emotional state.

3. Ability to muster motivation and to strive ahead - Problems are inherent in human life. No one can escape it. Ones’ ability to muster motivation and manage life’s problems with optimism and hope is crucial for our long-term success, wellbeing and self-efficacy. The ability to muster motivation in challenging times depends largely on the development of the first two EI abilities - the ability to be aware of our emotions and then manage these appropriately. For instance, there may come a time where your relationship with your partner is not functioning despite your greatest efforts. Or, you have to care for aging and difficult parents. Or, your child has been diagnosed with a significant illness. Or your work colleagues are particularly challenging. Despite these difficulties you are expected to get up in the morning, go to work, and do your job. But how many of us could do our best, without spilling over our emotional turmoil into those around us and creating a further set of problems for ourselves. A doctor sufficiently endowed with EI, would be able to hold it all together, and weather the storm.

4. Empathy - understanding another’s emotional state, in a compassionate manner, is bound to foster good relationships. Good relationships are important as it fosters self-esteem and a sense of wellbeing. We may know of that one friend or colleague that everyone goes to in times of crisis. If we look closely at their personal attributes, we may detect that he or she has empathy - that fine quality of being able to understand the emotional state of another, be present with it, be non-judgmental at it, and generate solutions for the problem at hand. Clearly, doctors need to be suffused with empathy as they are constantly with those in pain and hardship.

It is important to differentiate sympathy from empathy, where the latter is what is desired, whilst the former could lead to burnout. An empathic doctor has the unique ability to respond appropriately to the emotional life of the patient, rather than disregard it, whilst also not being affected by it. We see that early career doctors are more empathic and this empathy wanes with the number of years of practice.
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The reasons for this are many - such as being desensitized to emotional pain after being exposed to it constantly and an attitude of superiority where one considers oneself more important than others in lieu of being a doctor. As these tendencies can easily be a part of one's persona, it's essential to periodically check if one has become so. For instance, there are many signs of desensitization - Are you unmoved even in the most extreme medical condition of a patient? Do you tend to not refer to patients by their name, instead simply seeing them as a ‘case’? In a similar vein, superiority could also be self-assessed - Do you find yourself walking, talking or standing in a manner of self-importance? Do you consider others below your worth? Does your sense of self-worth get derived mainly from your profession? Though at first glance, a sense of superiority may seem to give a surge of power and sense of entitlement, within oneself it leads to a sense of emptiness and alienation from others. A beautiful but empty shell.

5. Social skills - Many people are most comfortable only when with those similar to them - whether it's hanging around with people from the same school, profession, social status, religion or race. Many find it difficult to be themselves if having to interact closely with those who are perceived as being different to them. In a health care set-up, this would of course impact team work as multiple professions are expected to work together. If one tends to be clannish, as opposed to being open and receptive to others, suspicion and low morale is bound to occur within the team, ultimately leading to lowered patient care.

How common is emotional intelligence?

It is hard to say. However, research has indicated that as doctors progress in their careers and/or the number of years of practice increases, some aspects of emotional intelligence (such as empathy and social skills) wane. Whilst this has clear negative consequences to patients, it has significant negative consequences to the doctor too – he or she loses the richness of life as the ability to connect with oneself and others are reduced. Some may argue that it is quite impossible to connect emotionally with each and every patient, what with the large numbers of patients one has to consult. There is however a solution. What is required is being present with your patient, rather than inappropriately lengthening the time of consultation with the view of being emotionally intelligent. It’s the quality of the doctor-patient relationship - a relationship of authenticity, of being present in the here-and-now, with a sense of acceptance rather than superiority.

We are aware that some doctors have a seemingly innate EI. Their emotional life is rich. However, those who haven’t been thus far fortunate to be so, could cultivate it too. Indeed, human life is short. We are acutely aware of the hours turning to days and days turning to months and years. Whatever we do, we do with the ultimate intention that it would give us happiness - from one’s initial choice to pursue a career in medicine, whether or not to follow post graduate studies, the type of specialty to study, the choice in spouse, whether to have children or not, etc. However, have we actually stopped a moment to consider if these life choices have indeed increased our happiness? It may have increased our material possessions and social prestige, which does give bouts of happiness, but fleetingly. For, after a few months, the joy of a new vehicle, for instance, is a thing of the past. But have we looked at ourselves deeply? - Do we feel fulfilled, alive, up-beat and above all contented? Do we feel emotionally intelligent?

Cultivating emotional intelligence

1. Present moment awareness - Present moment awareness (PMA) is the mental ‘attitude’ of being in the here and now, rather than in the past, future or in fantasy. PMA is a seemingly simple, yet profound practice that unfolds EI. PMA involves noting phenomena that occur here and now, either in one’s body or mind. For instance, at a given moment, one may note that there is a pain in the knee, or a thought on the next journal club meeting, or, what to have for lunch. A person trained in PMA would clearly mentally note these diverse bodily and mental phenomena, as and when it occurs, and let it be. The practice of letting be is of central importance to the practice of PMA, because, the usual tendency of an untrained mind is to proliferate thoughts. For instance, when a thought such as that on the next journal club meeting occurs, successive thoughts occur on, say, how the previous meetings went, who said what, concern if one was overlooked by a co-doctor, etc. A person untrained in PMA often readily or sub consciously follow these successive thoughts and keeps adding further thoughts to these as well. With this increased thought proliferation, the person moves further from reality and places oneself in a hypothetical scenario, which he or she takes to be real and acts upon. This hypothetical mental scenario also creates emotions within the person. As these emotions are based on hypothetical situations, they too are devoid of reality, though the person takes them to be true. Based on these emotions they may take decisions and actions that are not relevant to the actual situation at hand, with consequent interpersonal repercussions. For instance, in the above scenario of the thought on the next journal club meeting and subsequent thought proliferation, the person may actually take as real his or her thought that a particular co-doctor slighted them. They may not consider if there were other reasons for the co-doctor to have behaved in the manner he or she did (such as their own personal problems that had preoccupied him or her). Because of the conviction of being slighted, the person may slight the co-doctor in return, and a spiraling interpersonal relationship problem may start, which could impact team work. Most persons take their thoughts to be a true reflection of reality though most thoughts are not based on facts and in fact are mal-adaptive. Though thinking does have its place in daily life, PMA cautions ruminative thought as such ruminative thoughts are maladaptive, leading to negative emotions.

It is useful to consider how the mental ‘attitude’ of PMA leads to the development of EI. An individual with EI has the following characteristics: (i) emotional self-awareness, (ii) emotional management, (iii) motivation, (iv) empathy, and (v) social skills. When one trains the mind to be in the present moment, rather than ruminating and proliferating thoughts

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(and at times going further on to speaking-on and/or acting-on these thoughts), he/she becomes more aware of his/her emotional state at any given time. This is the first characteristic of EI: emotional self-awareness. On the other hand, when a person ruminates and proliferates on his or her thoughts, rather than stopping this process at the occurrence of the initial thought, they become enmeshed in it, leading to restlessness. Clarity of mind is lost when one is restless. Rather, by stopping the thought proliferation and by simply noting and letting be the initial thought that had occurred, the person becomes clearly aware of its underlying emotion. By being so aware, it becomes easier for him or her to manage the emotion in an appropriate manner rather than in ways leading to further problems. Such appropriate emotional management is the second characteristic of EI. When an individual becomes increasingly proficient in detecting and appropriately managing their emotions, when difficulties occur (maybe work place-related, family-related or otherwise), he or she would be motivated to manage and overcome these difficulties rather than crumble under its pressure. Though one would feel diverse negative emotions in times of such crisis, they would yet be motivated - the third characteristic of EI - to manage the crisis to the best of their ability whilst also attending to their daily duties and responsibilities. The ‘attitude’ of PMA would assist them to manage the crisis optimally because their mind would be less ruminative on the hypothetical implications of the crisis. Instead, they would be better able to face it, seeing it for what it is, and hence taking constructive action to solve it. An important contribution to such healthier problem solving is the assistance the individual may get from others. Assistance from ones’ social networks are important in times of crisis. The development of a dependable social network requires much time and energy, often taking years. Those with skills in emotional self-awareness and emotional management are better able to develop deep social networks because their management of negative emotions are superior. PMA also contributes to developing the fourth characteristic of emotional intelligence, empathy. Empathy, which is the ability to be aware of the emotional state of another, is best developed in an individual living in the present moment. By being in the present moment, a person is less hampered by his or her own internal thought dialogue and hence better positioned to be aware of others’ emotional states. A useful analogy to this ability would be - Say, a person is listening to a radio whilst also talking on the phone. He or she could hear the phone conversation better if the radio was turned off. Similarly, when ones’ internal thought dialogue is switched off or minimised, he or she is more aware of the emotional states of others. The culmination of these four characteristics of emotional intelligence leads to the fifth characteristic of EI, social skills. Doctors are required to constantly interact with various stakeholders, both professionally and socially. With people of diverse personalities, skills in interacting with and managing people effectively is a highly valued quality. Though even the most socially skilled doctor may not be able to win everyone over, they would be able to work in relative harmony with most persons.

2. Ethical conduct - When a doctor practices PMA, it becomes apparent to him or her the workings of their mind - the wholesome and the not-so-wholesome workings of the mind. With continuous practice of PMA, it also becomes apparent to them the subtle manipulations of their mind as well the minds’ cover-ups of these manipulations. Hence, the complexities of the mind become increasingly apparent. An important outcome of PMA is JUST this - the ability to see the complex manipulations of ones’ mind. Often times, simply seeing/these manipulations and complexities stops a person from acting on it. Hence, PMA has an active component, where its practice, on its own, leads to the disengagement from the possibility of unethical conduct. However, if one’s mental complexities and manipulations are particularly hard-wired in the brain, with strongly laid out neural connections, the simple yet powerful process of ‘seeing’ does not disable and do away with these tendencies. Instead, great effort is required to go against these tendencies. This effort maybe mental, such as when a person restrains his or her hard-wired habit of undercutting others who seem cleverer than themselves, or it could be a more physical effort when he or she abstains from leaving work before the work day finishes, or using official privileges for personal purposes. This active restraint is referred to as ethical conduct. With each successfully carried-out ethical action, the neural connections opposing the ethical action becomes weakened, and new neural connections corresponding to the ethical action are established. With time and continued effort, the neural connections associated with unethical actions loses its intensity whilst the newly learned ethical actions’ neural connections becomes strengthened. When large groups of doctors practice PMA and ‘see’ the manipulations and complexities of their mind, and restrains from acting on these tendencies, the organisations’ overall ethical standards increase, leading to a place of greater integrity and doctor patient satisfaction.

3. Thought structuring - A psychological intervention that would assist in furthering ethical conduct is thought structuring. In thought structuring, a person detects maladaptive thoughts that occur in themselves (for instance: suspicious thoughts regarding co-workers; thoughts of anger towards a peer; thoughts of unhappiness because of non-inclusion in a professional activity) and actively changes it to be more reflective of reality. Maladaptive thoughts are those that are not based on reality, and is often-times associated with negative emotions. An example of how thought structuring would work is: Say, a person gets a thought that almost all his or her co-doctors are ignoring and devaluing him or her. If they were to apply the technique of thought restructuring, they would ‘look’ for concrete evidence that this thought is indeed correct (for instance, he or she may recall that three of the five co-doctors did not look up and smile when he or she came for the ward round yesterday) and incorrect (for instance, the doctor may recall that when two of the co-doctors were going to the canteen, they invited him or her too). Then, they would combine these diverse pieces of evidence and generate an alternative, more REALISTIC thought. In the above instance, an alternative thought could be: “some of the co-doctors are kind and accommodating of me, but some ‘seem’ not to be”. By restructuring maladaptive thoughts in this manner, the individual is able to modify thoughts that would have otherwise led to problematic behaviours (for instance, in the above example, if the individual had not generated the realistic thought, he or she may have been abrupt and aloof towards those co-doctors who were kindly towards him or her, and hampered those healthy relationships) such as disrupted interpersonal relationships.


**MEDICATION SAFETY: GRAVITY OF THE PROBLEM AND THE WAY FORWARD**

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- To err is human; to forgive is divine!
- Let us admit, learn and prevent errors!

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Medical error has been identified as the 3rd leading cause of death in the US, after heart disease and cancer, as published in the British Medical Journal in 2016(1). Medical error is commonly explained as an unintended act, either omission or commission in the process of care of a patient that may or may not cause harm to the patient(2). They may or may not be related to medicines given to the patient. It is estimated that there are 180,000 iatrogenic deaths per year in the US and 51% - 78% of those are considered preventable(9).

In developed countries, 3-16% patients and on average about one in 10 patients are harmed while receiving hospital care(3). According to World Alliance for Patient Safety (WAPS), aviation and nuclear power plants have a much better safety record, as risk of death during air travel is estimated to be 1: million, while risk of death due to medical errors in hospitals is estimated at 1: 300. In developing countries, accurate data are not available but are considered higher than in industrialized nations.

### Medical error vs medication error

A medical error could be related to a medicine used to treat a patient, when it is termed medication error and defined as “a failure in the treatment process that leads to, or has the potential to lead to, harm the patient”(4, 5).

Data on medication errors from developed countries show that about 5-20% patients admitted to hospitals experienced adverse drug events (ADE) and 20 - 50% of these were considered preventable(6-8). Among out-patients, 2% are estimated to have preventable ADEs and 52% of all ADEs were considered preventable(9).

The available figures indicate that unsafe medicines, ADEs and medication errors have become leading causes of injury in developed and developing countries. ADEs are often the most frequent type of serious adverse events reported. In USA alone 1.5 million patients are harmed and 7000 die every year due to medication errors. Worldwide, the cost associated with medication errors has been estimated as $42 billion annually.

Statistics in low and middle-income countries are again limited on medication errors but the true burden of unsafe medication practices is underestimated. Systematic review of medication errors from South East Asia, have described the types and causes of medication errors noted in the region(10).

### Causes of medication errors

Medication errors could occur at various stages in medication use (Table 1). Some reported examples of errors noted at different stages of medication process and the reasons for the occurrence of these errors are given in Table 2.

The relative frequency of the errors occurring at different stages varies widely. In a study from UK, medication errors occurred in all care settings at every stage of the medication treatment process with 16% in prescribing, 18% in dispensing and 50% in administration of drugs(11). In a systematic review from Middle East, error rates varied from 7.1% to 90.5% for prescribing and from 9.4% to 80% for administration(12). The most common types of prescribing errors reported were incorrect dose, wrong frequency and wrong strength.

In the UK, over a 5 year period, 221 deaths (0.05%) and 551 (0.1%) serious errors occurred due to medication incidents(11). Most common errors reported in UK were omitted or delayed medicine use (15%), wrong dose (15%), wrong medicine 9%, wrong frequency (8%), wrong quantity (5%) and mismatch between patient and drug (4%).

### Medication errors in Sri Lanka

Data on medication errors in Sri Lanka are limited. A prescription survey from two areas (Aluthgama and Kandy) in Sri Lanka reported illegibility in 50% of prescriptions and use of non-standard abbreviations in 37%(13). Legibility and use of abbreviations was significantly worse among specialists compared to general practitioners. Another study on 1000 prescriptions dispensed from private sector in North central province reported legibility in only 26% and legible with difficulty of 65% and illegibility of 9% of prescriptions. That study reported presence of potential drug interaction in 53% prescriptions. Incomplete, absence or incorrect details on route, dose, frequency and duration was found in 94%, 70%, 34% and 23% prescriptions respectively.

---

**Table 1: Stages in medication where errors occur**

<table>
<thead>
<tr>
<th>Errors</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescribing</td>
<td>When the prescription is written</td>
</tr>
<tr>
<td>Transcribing</td>
<td>When the prescribed medicine is written into drug chart/labels</td>
</tr>
<tr>
<td>Supplying/dispensing</td>
<td>When the prescribed medicine is supplied to the patient</td>
</tr>
<tr>
<td>Preparing</td>
<td>When the medicine is prepared for administration to the patient</td>
</tr>
<tr>
<td>Administering</td>
<td>When the medicine is given to the patient</td>
</tr>
<tr>
<td>Monitoring treatment</td>
<td>During clinical or laboratory monitoring while the drug is administered</td>
</tr>
</tbody>
</table>

---

Contd. on page 11
In a study done by the Department of Pharmacology, Colombo, on the analysis of 150 prescription errors identified and prevented by trainee internal pharmacists as recorded in their portfolios submitted, most common errors were in the dose (42%), name (32%) and frequency of administration (28%). The probability of the error reaching the patient was considered as high in 31% and the severity of harm was considered as severe in 10%.

**Factors responsible for medication errors**

**Patient factors**

Patients not being adequately knowledgeable regarding the medicines they take is one of the most important factors responsible for errors. A significant number of our patients taking long-term medicines do not know the names of medicines or doses they use. They identify medicines from the shape or colour and the dose in the number of tablets and not in milligrams/grams or units. Some patients with specific conditions are more vulnerable and prone to errors (e.g. patients with organ dysfunction or during pregnancy).

**Staff factors**

Inexperienced personnel such as intern house officers, pharmacists and nurses as they start their professional career are more liable to make errors. Studies have shown an increase in mortality rates due to medication errors in the month when new interns start to work (15). Factors such as rushing as in emergency situations, multitasking, getting interrupted mid-task (eg. during prescribing or drug administration), fatigue, and lack of vigilance also contribute to errors. A lack of checking and double-checking habits of staff promotes medication errors.

**Workplace design**

Absence of a safety culture in the workplace, lack of reporting systems, failure to learn from past near misses and adverse events, inadequate or untrained staffing all contribute to increase medical errors. In Sri Lanka there are no clinical pharmacists in wards who review drugs prescribed for patients. In developed countries, clinical pharmacists working in the wards have an important role in reducing medication errors. Inappropriate storage of medications is another factor contributing to errors. Establishment of health care quality and safety units in Sri Lankan hospitals is expected to promote reporting of adverse events in a blame free culture which would enable taking preventive actions.

**Medication factors**

Some medications, which have similar appearances and names, are easily confused. These ‘Look alike sound alike (LASA) medicines (Table 3) contribute to medication errors. Different preparations or dosages of similar medication may have similar names or packaging. Very small prints in labels may be so difficult to read contributing to errors. LASA medicines may be stored close to each other predisposing to errors.

---

**Table 2: Examples of reported medication errors that occurred at different stages**

<table>
<thead>
<tr>
<th>Prescribing errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>• A 6 year old child weighing 20kg was prescribed paracetamol 1 tablet (500mg) 3 times/day and the child was admitted to LRHI with liver damage Correct dose at 10-15mg/Kg is maximum of 300mg per dose and nearly double the dose was administered, due to incorrect calculation of dose</td>
</tr>
<tr>
<td>• Patient prescribed calcium tablets written as CaCO₃ was dispensed lithium carbonate. Patient was admitted with lithium toxicity and renal failure requiring dialysis. Pharmacist thought it was lithium carbonate written as LiCO₃ due to abbreviation used</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dispensing errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Patient with asthma was prescribed prednisolone 30mg (6 tablets of 5mg) but was dispensed Glibenclamide 30 mg (6 tablets of 5mg). Patient became unconscious with hypoglycemia and survived with brain damage. Both prednisolone and glibenclamide were white colored small tablets and pharmacist mistook glibenclamide due to ‘look alike’ (LA) medicines</td>
</tr>
<tr>
<td>• Propranolol 40 mg was dispensed for prednisolone 40mg for a patient with asthma, and patient became breathless, hypotensive with coma and died. Both drugs were written alike and packaging and labeling of medicines also looked the same. Error occurred due to ‘Look alike and sound alike (LASA) medicines’</td>
</tr>
<tr>
<td>• Patient prescribed metformin 500mg bd was dispensed mefloquine 5mg bd and patient developed agranulocytosis and died. This was also due to sound alike (SA) medicines</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Administration errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>• A child prescribed ampicillin IV was given aminophylline IV. The error was identified only when the child developed fits and the cause was looked for. Child ended with brain damage. The drugs were sounding alike and illegibility of prescription contributed to the error.</td>
</tr>
<tr>
<td>• A patient prescribed 6U insulin was administered 60 U insulin and developed severe hypoglycaemia. Unclear dose contributed to error.</td>
</tr>
</tbody>
</table>

---

**Table 3: Look alike and sound alike (LASA) medicines that have caused errors**

<table>
<thead>
<tr>
<th>Sound alike (SA) medicines with examples of tall man lettering used to prevent errors</th>
</tr>
</thead>
<tbody>
<tr>
<td>CarbemaZEPine and CarbemaZOLLe</td>
</tr>
<tr>
<td>ClonZEPam and cloDAZam</td>
</tr>
<tr>
<td>PrednoSOLne and prPRAnolol</td>
</tr>
<tr>
<td>MetFORmin and methoTREXane</td>
</tr>
<tr>
<td>Phenytoin (Dilantin) Sodium and DichloZene sodium (written often as D sodium)</td>
</tr>
<tr>
<td>Liposomal amphotericin B and lipoyised amphotericin B</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Look alike (LA) medicines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prednisolone and glibenclamide (both white coloured small tablets)</td>
</tr>
<tr>
<td>Propranolol and salbutamol (both pink coloured small tablets)</td>
</tr>
</tbody>
</table>

---

Some medicines have been commonly reported to cause more errors than others and these are identified as high-risk medicines (Table 4).
There are high-alert medications also identified, which are drugs that bear a heightened risk of causing significant patient harm when used in error. Although mistakes may or may not be more common with these drugs, the consequences of an error are more likely to cause serious harm and death (e.g. muscle relaxants, intravenous potassium preparations). Health care professionals have to be very careful when prescribing and using these medicines.

**Special situations**

Polypharmacy or use of multiple medications in a single patient, generally considered when more than four drugs are prescribed at a given time, makes patients more prone to errors. However, a patient with multiple conditions such as diabetes, hypertension and heart disease may be in need of several drugs for each condition. Therefore, taking more drugs than the patient needs for the diagnosis, is a better reflection of poly-pharmacy, taking into consideration side effects, time to benefit and adherence to therapy.

Transitions of care such as at hospital admission, transfer or discharge are common situations predisposing for medication errors. During hospital admissions and discharges, the usual medicines patients take could be omitted and only changes to medication may be given which could result in serious harm if long-term medications such as antihypertensives, antidiabetics, anticoagulants etc are not continued. These medication errors also could occur during any interaction with a healthcare professional even at an out-patient visit.

**Prevention of medication errors**

Only 25.8% of medication errors were detected before advancing to subsequent stage. Errors reaching the patient are not due to the inappropriate actions of one person but due to a combination of factors that result in a system failure. A model known as the Swiss cheese model (Figure 1) where holes in the cheese represent lapses at each stage of medication process resulting in errors is used to describe how these barriers can be used effectively to prevent errors(16). Writing some letters in capital (Tall man lettering) to prevent errors by avoiding confusion with another similar sounding drugs can be used to prevent errors due to LASA medicines (Table 3). Always making sure that ’5 Rs’ are checked before medicines are administered can help (Table 5).

**Table 5: The ‘5R’s in preventing medication errors**

<table>
<thead>
<tr>
<th>Right drug</th>
<th>Right dose</th>
<th>Right route</th>
<th>Right time</th>
<th>Right patient</th>
</tr>
</thead>
</table>

There are several methods that health care professionals can adopt to prevent occurrence of medication errors (Table 6). Some recommendations to minimize medication errors in Sri Lanka are given (Table 7).

**Table 6: Some ways for health care professionals to make medication use safer**

- Use generic names resulting in less confusion
- Tailor prescribing to individual patients
- Learn and practice collecting complete medication histories
- Medication histories to be taken by both doctors and pharmacists
- Know the high risk medicines and be cautious when prescribing them
- Be thorough with the commonly prescribed medications
- Use memory aids eg. BNF, CBNF/Medscape always when not sure
- Check on 5Rs when prescribing, dispensing or administering medication
- Communicate clearly
- Develop checking habits
- Report and learn from medication events

**Organizations involved in medication error prevention**

At International level, World Health Organization (WHO) plays a major role in prevention of medical errors through the patient safety initiative. WHO Global patient safety challenge on medication safety will be launched in 2017 with an overall goal of reducing medication errors by 50% in the next 5 years. The World Alliance for Patient Safety (WAPS) and International Medication Safety Network (IMSN) are other important international organizations working on medication safety.

At national level patient safety organizations, national pharmacovigilance centers and poison control centers work in this area. Local level hospitals and consumer and patient organizations are active in trying to prevent medication errors.
Contd. from page 12

MEDICATION SAFETY...

Table 7: Recommendations to ensure medication safety in Sri Lanka

- Establish a medication incidents reporting system for hospitals and private sector
- Encourage reporting by both health professionals and patients
- Promote no blame culture to encourage reporting
- Learn from mistakes and taking action for prevention
- Improve medication literacy of patients
- Introduce the necessity to know about medicines taken by patients into school curricula
- Introduce WHO medication safety curriculum into undergraduate and post graduate teaching
- Emphasise the need for legible prescribing by doctors
- Limit the number of generics registered unless there is a necessity
- Identify and prevent registration of medicines prone for errors, by requesting labeling and other necessary changes at the time of registration by NMRA
- Pharmacist/nurses/doctor to take steps to prevent errors due to look alike sound alike medicines and high risk medicines when these are identified or reported
- Ensure dispensing medicines with labels on drug names and instructions mandatory
- Continuing professional development activities for doctors, nurses and pharmacists on medication error prevention
- Employ graduate pharmacists as clinical pharmacists to wards and ICUs

Conclusion
Medication errors are common and results in significant patient harm. Majority of medication errors are preventable. Reporting system on all medication incidents is needed. Learning from mistakes and action taken to prevent them would reduce medication errors.

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1. Makary MA, Daniel M. Medical error—the third leading cause of death in the US. BMJ. 2016;353:i2139.
Taking part in regular physical activity and participation in sport is known to generate several positive health effects. Reduced level of physical activity and physical fitness is associated with many adverse health events, including major non-communicable diseases. Therefore, today sport is used to promote both physical and psychological well-being [1]. Participation in sport is however, associated with a significant risk for sustaining injuries that may have long-lasting effects, including mortality, morbidity and high costs for the society [1].

These injuries can be classified as acute and overuse injuries. The acute injuries occur suddenly and usually due to an impact or a fall. Football, rugby, boxing, cycling are some sports that are commonly associated with acute injuries (Figure 1) [2]. Overuse injuries usually occur gradually and generally due to repetitive overloading, incorrect equipment, incorrect training surface, anatomical abnormalities and muscle imbalances. The chance of developing overuse injuries increases when the training duration, intensity and frequency increase over a brief period of time. Tennis, golf, javelin throwing, weight training are sports that are frequently associated with overuse injuries (Figure 2) [2].

Introduction to rehabilitation

Rehabilitation is defined as helping an individual to achieve a normal productive life after an injury or an illness. Therefore, this process must start as soon as possible following the occurrence of an injury within the limits of patient’s symptoms and the level of healing of tissues. The time duration of a rehabilitation programme will vary depending on the factors that interplay with healing and rehabilitation [3]. Advantages of early rehabilitation include promote tissue healing, limit the formation of adhesions in joint capsule, maintain muscle power, coordination and sports related skills. For the success of the rehabilitation program a team care approach is essential and a close coordination is required between the physiotherapist, doctor, trainer, sports physiologist and sports psychologist [3]. Rehabilitation of injuries involves managing the acute phase (First 72 hrs) and the long term management up to the point of returning to sport and exercise [3,4,5].

Management of injuries in the acute phase

Taking steps to protect from further injury, rest, using ice to the affected area, compression and elevation of the injured area are the methods used to reduce bleeding, swelling and pain with a view to improving the conditions for healing of the injury and subsequent treatment [6]. These five methods are denoted by the word PRICES and they may have to be followed for 48-72 hours [6]. In addition to the above mentioned methods the medications such as analgesics and non-steroidal anti-inflammatory drugs are useful in the injury management in the acute stage [7].

The long term management of injuries

Physical exercise, manual therapy (massage and manipulation) and therapeutic modalities such as ice, heat, ultrasound, laser, and electrical stimulation are used in the long term management of injuries [6]. In addition, medications such as analgesics, non-steroidal anti-inflammatory drugs, corticosteroids and antidepressants are also used depending on the necessity [6].

Physical Exercises

They are used to improve the range of movement of joints, flexibility, strength, endurance, proprioception, agility and skills [6].

Range of movement and flexibility

There is literature to suggest that reduced range of movement of joints and flexibility of muscles are predictors of limb injuries [9].

To improve the range of movement of joints and flexibility, the following techniques are used:

• Passive exercises – the therapist moves the patient’s limbs.
• Active exercises – the limbs are moved by the patient.
• Active assisted exercises – the patient does the required movements with assistance from the therapist (Figure 3).
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- Joint mobilizations – It is done by the therapists. Therapist performs sliding movement of bones along the joint articular surfaces.

- Static stretching- the patient stretches the joint to a comfortable range to feel a stretch and hold that position for approximately 30 seconds.

- Facilitated stretching- the patient stretches a joint to a range where a stretch is felt and in that position the joint is held approximately for 30 seconds. After 30 seconds the joint is stretched again to a new position from the previous position with the help of the therapist [8].

Muscular strength

Greater muscular strength is strongly associated with an athlete’s overall performance. According to research greater muscular strength can enhance the ability to perform sport skills such as jumping, sprinting, and change of direction tasks and produce superior performances during sports [10].

The following types of exercises are done to improve the strength of muscles:

- Isometric – the joint range of movement is fixed and the resistance is fixed (Figure 4).

- Isotonic – the joint range of movement changes and the resistance is fixed. The speed of joint movement varies. (Figure 5).

- Isokinetic – with the help of an equipment the speed of joint movement is kept constant but the resistance is altered. This type of exercise is useful to improve sport specific movements (Figure 6).

Agility and skills –

The speed and agility training is known to improve sprinting with ninety degree turns with the ball, sprinting with 180 degree turns and sprinting with forward and backward running [10].

Exercises used to improve the agility and skills are done during the more advanced phase of rehabilitation. To improve these skills, the joints must have the normal range of movements and the muscle power must be normal or at least 90% of the pre injured level [8,7].

By changing the intensity, the number of repetitions and the number of sets the aerobic and anaerobic muscle power can be improved [8,11].

Endurance

Endurance training is known to improve the aerobic capacity and the sprint performance [12]. To improve the cardiovascular endurance, the physical exercises such as brisk walking, running, cycling, and swimming can be used [8,13].

Proprioception

Lack of proprioception can lead to acute and overuse injuries. Proprioception is the ability to judge the position of the body and its limbs at subconscious level of the mind. Proprioceptive exercises must start at a mild intensity and increased gradually [8]. To improve the proprioception single leg stance, uniaxial and multi axial boards are used (Figure 7). Study findings indicate that improvements in proprioceptive control significantly reduces ankle sprains, knee sprains, and low back pain [14].

Massaging-

Effurage, kneading, petrisage and tappotment are the four methods used in massaging. Generally massaging is avoided within the first 72 hours after an injury.
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Massaging helps to reduce muscle spasms, improves blood supply to the affected area and facilitate healing of tissues [6, 16].

The therapeutic modalities used in the rehabilitation process

Cold treatment –
Cold treatment is used in the management of injuries in the acute stage and in the long term rehabilitation stage. In the acute stage, it helps to reduce pain and swelling and facilitate movement. In the long term rehabilitation stage, it helps to reduce pain after physical exercises. Following methods are used in the cold treatment. They are ice packs (Figure 9), ice water and ice buckets [6, 16].

Heat treatment –
The heat provides more nutrition, oxygen and cells required for wound healing. It makes soft tissues more elastic, decrease muscle spasms, reduces joint stiffness and reduces nerve irritation. Hot packs, infrared lamps, short wave diathermy (Figure 10) and whirlpool immersion baths, are used in the heat treatment [6, 16].

Heat treatment should not be used within the first 72 hours of an injury because, it can aggravate the bleeding and increase the pain and swelling. Presence of a pregnancy, malignancy, infection and metal implants are the other contra indications to use heat treatment [6, 16].

Ultrasound -
Treatment with ultrasound (Figure 11) provides heat to deep tissues in the body. It is believed that it can provide heat to tissues that are five centimeters below the level of the skin. It helps to reduce pain, improves circulation, reduces muscle spasms, softens stiff fibrous tissues and promotes tissue healing. This modality is used in the management of tendinitis, bursitis, muscle strains and fibrous contractions [6, 16].

Presence of a pregnancy, malignancy and infection are contra indications to use ultrasound treatment [6, 16].

Laser Treatment -
This treatment is useful to reduce pain, swelling, muscle spasm and facilitate healing (Figure 12). Presence of a pregnancy, malignancy and infection are contra indications to use laser treatment [6, 16].

Electrical nerve stimulators –
Trans cutaneous electrical nerve stimulation (TENS) (Figure 13) inhibit the transmission of pain impulses and trigger the production of endorphins from the brain and the spinal cord. This method will help to reduce pain, muscle spasms and facilitate movements [6, 16].

Presence of a cardiac pace maker is a contra-indication to use electrical stimulation [6, 16].

Psychological rehabilitation
Athletes who are injured and disabled for a longer period of time may require psychological rehabilitation in addition to physical rehabilitation. When an athlete is psychologically disturbed it is known to affect his rehabilitation programme and the final outcome. Therefore, it is important to identify signs of psychological distress. Symptoms and signs can be in the form of physical, emotional and behavioral problems.
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Return to play criteria

For an athlete to return to play the following criteria need to be fulfilled:

The injury must heal completely and there should be no pain, swelling and instability. The joints must have the full range of movement. The muscle strength must be at least 90% of the pre injury level. The endurance level must be similar to the pre injury level and must have good proprioception, sports skills and agility [9].

The following errors should be avoided in the rehabilitation process:

Using the same rehabilitation programme for all the athletes. Trying to achieve too much too soon and having unreasonable expectations [9].

In sports rehabilitation, the aim is to assist an athlete to resume participation in sports at a level of performance almost equivalent to the level prior to the injury. Athletes have a greater functional demand and a limited time period to get back to competitive sports. Therefore, rehabilitation programs need to balance the athlete’s safety and the time period required to return to sport. This article provides a comprehensive coverage of principles and techniques used in the rehabilitation of an athlete back to sport that will be useful to medical doctors and para medical personal in managing injured athletes.

References


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