

bida **JOURNAL**



THE JOURNAL OF **THE BRITISH INTERNATIONAL DOCTORS' ASSOCIATION**
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**Metacognition
for every
clinician**

A Reflection on the Biopsychosocial Factors of a Colorectal Cancer Patient.

Cardiovascular manifestations in patients with chronic renal failure.

Response to the GMC's latest report on tackling disadvantage in medical education.

Psychological support as an effective weight loss intervention?

Weight loss in patients suffering from Osteoarthritis before total joint replacement.

Dr Alka Trivedi – Celebrating 50 years in patient care. Congratulations Dr. Noha El Sakka O.B.E.

BIDA International Congress 2023 announcement and booking details

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Editorial

Mr Amit Sinha FRCS (Tr&Orth) Consultant Orthopaedic Surgeon Media & Communication Lead, BIDA Editor, BIDA Journal.



Our NHS in crisis

There is no denying that UK's health services are in crisis. Normal winter pressures have transferred into issues of staff shortages across health and social care, and industrial action. The latter has brought in nurses, ambulance personals and now Junior doctors to the forefront, who are voicing their concerns. In principle, BIDA supports these industrial actions. This would unfortunately mean that the planned recovery from the pandemic would be pushed further way off. Nevertheless NHS staff from all disciplines have continued to work to the best of their abilities through these challenging times.

The doctors strike action, the first by doctors since 2016 involving junior staff in England, is due to begin on 13th March 2023. The proposed action will see junior doctors strike for a period of 72 hours, from all forms of work, including emergency care. The recent negotiation meeting of the BMA Junior Doctors Committee with the Secretary of State for Health, Steve Barclay, on Thursday 2nd March, ended without any resolution. Now senior doctors are planning the same regarding issues of pay and pension regulations.

It is very challenging to work in these circumstances and not unreasonably many of you may feel disheartened and discouraged that it is no longer possible to provide good care. In such stressful environments compassion, civility, teamwork and empathy can easily be forgotten. I urge you remain resilient and also to take care of yourselves and the teams around you at this very difficult time.

What are our Solutions?

None of the solutions can solve the problem quickly. The government needs to recognise that only long-term planning can steady our ship. Firstly, the workforce. Improved social care provision is urgently required and in this, as in the NHS, recruitment and retention of staff is the most pressing matter. The overdependence on recruiting foreign doctors and nurses has been going on for years but this has not sorted the issues. Expansion of the medical and nursing workforce, for example by increasing student numbers and training places, provision of incentives such as bursaries for nurses etc should be hand in hand with provision of adequate resources and pay structure to help in recruitment and retention.

This second solution - to enhance the NHS and social care estate - also requires medium to long term planning. If and when we have an adequately staffed health and social care system we will require facilities in which to

work efficiently. It is estimated that the bill for maintenance of the NHS estate in England alone is some £8 billion. Therefore planned investment is essential to achieve this.

The third solution in the current crisis is one, which we as clinicians can play a vital role by providing clinical and management leadership. This will be for training the future workforce and also in planning facilities for the future in collaboration with the Executive management. This will enhance accountability and teamwork.

GMC

The GMC has published an action plan to guard against bias in their processes and procedures following longstanding concerns of unfair treatment of doctors from black and minority ethnic background in regulatory and disciplinary matters. BIDA welcomes this plan and we also welcome the GMC's report on differential attainment in postgraduate training and assessment "Tackling Disadvantage in Medical Education". Sai Pillarisetti has written a synopsis of the report in this issue.

BIDA office bearers have a presence at the GMC in their BAME Forum and the Strategic ED&I Forum. We are actively involved in the discussions.

This edition has several very interesting articles. Metacognition, the awareness and understanding of one's own thought processes, is a profound principle, which can enhance performance and quality. Dr Shiralkar has tremendous experience as a surgical performance coach.

Drs Abbasi presents a study from Romania on cardiovascular symptoms in patients with chronic kidney disease. Josh Mathews presents a very thought provoking article on the psychological mindset of a patient suffering from colorectal cancer.

BIDA Student wing held their recent National Conference in January this year, which was superbly organised. We have included the Proceedings and the winning podium and poster presentations.

Congratulations to Dr Alka Trivedi for celebrating her 50 years contribution to the NHS. BIDA is indebted to her for her service and friendship.

"The way to get started is to quit talking and begin doing" Walt Disney

Amit Sinha

Editor, BIDA Journal



Instructions for Authors

BIDA Journal is a peer-reviewed journal. We welcome original articles from physicians, surgeons and medical students from any part of the world. These include review articles, scientific articles, case reports, audits and letters to the Editor. Please visit BIDA's website for instructions.

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Editorial Committee:

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Secretary:

Mrs Alison Sherratt

Editorial Address:

The Editor
BIDA Journal
Suite 6, Princess Chambers
2 Brown Street
Stockport
Cheshire
SK1 1RJ

Telephone:

0161-456 7828

E-mail:

amitani2000@yahoo.co.in
bida@btconnect.com

Website:

www.bidaonline.co.uk

National President's Report

Dear Colleagues,

2023 has been a difficult year so far for the NHS with an increase in the backlog of hospital appointments and a number of delays in every part of NHS. We also have strikes by a number of NHS Staff. BIDA is supporting our NHS Nurses and Junior Doctors in their rightful reasons for the ongoing strike. I have been interviewed by several national media organisations where I made sure BIDA's position in supporting reducing the pay gap for Junior Doctors was made.

Thanks to our Junior Doctor Chair, Dr. Sai Pillarisetti's efforts, and to those of the excellent BIDA Student Wing officers, we had an excellent BIDA SW National Conference on 4th February 2023. Thanks to Sai for organising BIDA and BIDA Student Wing's initiative of 'Beauty In Diversity' pictures showing the amazing diversity of our communities, particularly in our NHS of which we all are proud. It's great to see these pictures hanging in the corridors of hospitals like The University Hospital of North Midlands.

BIDA has commented on the recent GMC report on the inequalities experienced by medical trainees from different ethnic backgrounds. We will continue to raise this important issue and demand actions by both the GMC and Royal Colleges, through the GMC's BAME Network led by its excellent leader, Prof. Iqbal Singh.

Please continue to encourage junior doctors and medical students to join BIDA, to participate in the number of campaigns and educational programmes we are organising. Strengthen the BIDA Executive to continue to work for equality and justice for all doctors in NHS.

Dr Chandra Kanneganti

National President, BIDA



National Chairman's Report

Dear Friends,

I hope you and all your loved ones are keeping well.

At the time of writing this report, our junior doctors are on three days of strike action. This is a rather unfortunate situation arising out of below inflationary pay rises for junior doctors and the medical workforce over many years. BIDA stands in solidarity with junior doctors in their fight to achieve this well deserved and long overdue pay rise..

There is also a lot of unhappiness amongst senior medical work force including SAS doctors, General Practitioners and Consultants on similar issues of pay erosion due to below inflationary pay rises over the last many years. As an organisation, BIDA urges the government to promptly resolve this junior doctors pay dispute so that there is no further disruption to patient care. We are also hopeful that the government will engage in fruitful and pragmatic discussions with the senior medical workforce to avoid any strike action.

I had written to all of you recently announcing the 14th BIDA International Congress in November 2023. I am pleased to inform you that we have had a tremendous response from our members. As it stands, we only have a handful of places left unfilled. In the current edition of BIDA Journal, we have enclosed the brochure and booking form. I would urge any members interested in attending this Congress to get in touch with our Travel Agent partners as soon as possible. Going by our previous experiences, I am hopeful that this Congress will once again be intellectually stimulating and thoroughly relaxing.

I hope you enjoy reading the current edition of BIDA Journal.

Best Wishes

Dr Ashish Dhawan

National Chairman, BIDA



Junior Doctors' Forum Report

Dear Members,

It gives me great pleasure to write my first report to you as Junior Doctor Chair. The past few months have been very eventful and I am thrilled to highlight our progress so far.

I am proud to officially announce the launch of the **BIDA Clinical Attachment Portal – a first of its kind national collaboration of NHS Trusts and GP Practices aimed at addressing the enormous stress and anxiety faced by International Medical Graduates (IMGs) when applying for Clinical Attachments.**

To summarise briefly, a clinical attachment is a short term of unpaid placement for a qualified doctor from abroad who needs experience of the NHS. It is usually taken before their PLAB Part 2 exam, which is the final step before they acquire full GMC registration and join the NHS workforce.

Before the launch this portal, there did not exist a singular resource where IMGs could access information and apply for these attachments with one click. I have also designed a web-based application form which has been integrated into the BIDA website and enables a seamless experience for trainees to submit their information and attach their CV.

Far too often I have witnessed young doctors who are unfamiliar with the system in the UK experience a great deal of stress and anxiety as they are unsure which Trusts are amenable to these attachments and

equally, how to approach them and with what information. At a time when they are balancing exams, work-related stress and plans of moving to the UK, this uncertainty makes it that much more difficult for them.

Every year, we have thousands of foreign doctors joining the UK workforce (3,000 last year and expected to be 5,000 this year). Encouraging clinical attachments is a key opportunity for us to support and nurture these young doctors from abroad who are keen to join and contribute to the NHS, especially at a time of a workforce crisis when the medical profession in the UK relies on the expertise of doctors from overseas.

Since the launch of this portal we have been overwhelmed with support and our collaboration has been joined by several NHS Trusts over 40 GP practices across the country. We are working on adding others to this collaboration in due course. I would like to take this opportunity to kindly request any member who can facilitate a meeting furthering this collaboration between their Trust or GP practice and BIDA to please get in touch with me for more information.

Dr Sai Pillarisetti

Chair, BIDA Junior Doctors' Forum



G.P. Forum Chairperson's Report

Dear Members,

It's been a very difficult couple of years for GP's not only due to COVID but constant media bashing and squeezing of resources and ever rising patient demand and unsustainable workload. So before I proceed I would like to say thank you to each and everyone for all you do in your professional life to keep patients safe in this challenging circumstances. This winter was particularly bad with scarlet fever and viruses causing havoc to the already stretched services. Unfortunately none of these challenges have been recognised though we have time and again highlighted them to the relevant organisations. Eventually this resulted in BMA GPC rejecting a new contract offer, which was deemed as 'unsafe and insulting' and demanding increased investment to recognise 'unsustainable and unsafe' pressures.

As your representative I am raising concerns in all the relevant forums and rest assured we would do all we can to support GP practices in these difficult times. As ever please feel free to get in touch with me if you need any further information

Best wishes,

Dr Preeti Shukla

Chair, BIDA G.P. Forum



BIDA Student Wing Report

Dear BIDA Members,

It is with great humility and pride that I report on the recent accomplishments of the BIDA Student Wing. The BIDA Student Wing has made significant progress in achieving its mission of supporting and guiding international medical students. The diverse and inclusive community has grown significantly and includes students from all UK medical schools, of over 39 nationalities and over 400 student members.

We have provided our members with an educational programme that offers high-quality teaching on various medical and surgical specialities, A-E assessments, OSCE preparation sessions, and mock interviews for the Specialised Foundation Programme applications. To date, we have delivered teaching and on-demand educational content to over 750 registered students. The BIDA SW educational program is ongoing and will continue to run for the full academic year.

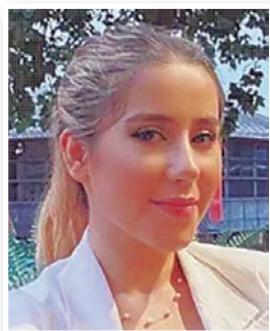
We were also able to provide mental support resources to members

and pass a motion for international student financial and wellbeing support to the British Medical Association (BMA) Student Conference 2023. This motion was passed as a white motion and will be taken to relevant stakeholders for implementation by the BMA Student Committee.

The SW National Conference in February 2023, chaired by Paarth Kishan Gupta, was an exceptional opportunity for our members to engage with leading professionals in their respective fields and learn from their experiences.

Negin Gholampoor

President, BIDA Student Wing



Metacognition

for every clinician



Dr Uttam Shiralkar FRCS MRCPsych

This is an abridged chapter from the book ‘Surgical Metacognition’. Although the book is primarily aimed at surgeons, the principles are applicable to any speciality.

Just prior to his retirement, the renowned neurosurgeon Henry Marsh decided to look back on the forty years of his surgical career, considering whether his mistakes had been negligent carelessness or acceptable ‘errors of clinical judgement’:

*“To my distress... I could not deny that many of the mistakes I was remembering fell into the first category – I had been careless. They were also the mistakes I found most difficult to remember and I suspect that some of my worst mistakes remain buried in my subconscious or have been completely erased. It was also striking that the great majority of the mistakes had been mistakes in decision-making... And yet, like most doctors, I like to think that I am a good doctor”.*¹

Although his career is over, and he will no longer benefit professionally from his reflections at this point, he offers lesson for those of us that can. These few lines give many lessons. Despite his internationally acclaimed status, Mr Marsh voluntarily admits to having committed serious errors in his career. And he is candid about having been in denial about these mistakes for a long time.

The first lesson to take from this is the tendency to deny limitations and problems in decision-making, thinking ‘I am a good doctor.’ The second lesson is that you don’t need to wait until retirement to take remedial measures.

The third lesson is to understand a type of thinking called metacognition; it is the ability to understand and reflect on both decisions and your underlying thinking processes. Using these skills, Mr Marsh dove deep into his memory, brought forgotten cases to his consciousness, and analysed his core thinking process. This isn’t the mere recollection of what happened; it is an important attribute of a good decision maker: an exploration of thoughts. This is metacognition in action.

The fourth lesson to take from this is that anyone desiring to be an expert should proactively develop such metacognitive skills, as these are seen almost universally among experts across a range of fields.

Unfortunately, the stereotypical image of a surgeon, compared to other medical specialities, is of an actor rather than thinker. There are two reasons this is unfortunate. Firstly, it is a misperception and secondly, some surgeons buy into it.

This perception is inaccurate as surgeons don’t think any less than other clinicians. In fact, it could be said that due to the gravity of many of their decisions, surgeons think more than most clinicians. They may appear to think less because their thoughts are not necessarily



analytical or verbalised. Although a significant amount of surgical thinking is non-analytical and non-verbal, and is instead visual, tactile, or kinaesthetic; it is still ‘thinking.’

However, although it is not true that surgeons use less cognition, it may be the case that they tend to use less metacognition. Therefore, we come across surgeons who are unable to improve their decision-making. It is not because they cannot or do not want to improve, but rather because they are less able to appreciate the differences between their own thinking and that of those who perform better. Fortunately, it is now well established that metacognition can be taught and learned, allowing a great potential to improve our decision-making abilities.²

What is metacognition?

In simple terms, metacognition is ‘thinking about thinking.’ It involves understanding how you think and how you regulate the way that you think. The regulation of thinking is done by monitoring and evaluating the thought process and planning of thoughts (figure 1).³ Thus, metacognition is a person’s ability to manage their thinking.

Although the word itself may be new to you, metacognitive actions are common. Consider the following two questions.

- When was the last time you failed to recall someone's name but were sure that you knew it? These frustrating ‘tip-of-the-tongue’ events are common and may increase as we age. They are metacognitive because you have a thought, “I am sure I know the persons name”, about the cognitive action of memory; of remembering a name.
- How often do you use a shopping list or see others do so? Lists indicate an awareness that we are at risk of forgetting, and so we use an external aid.

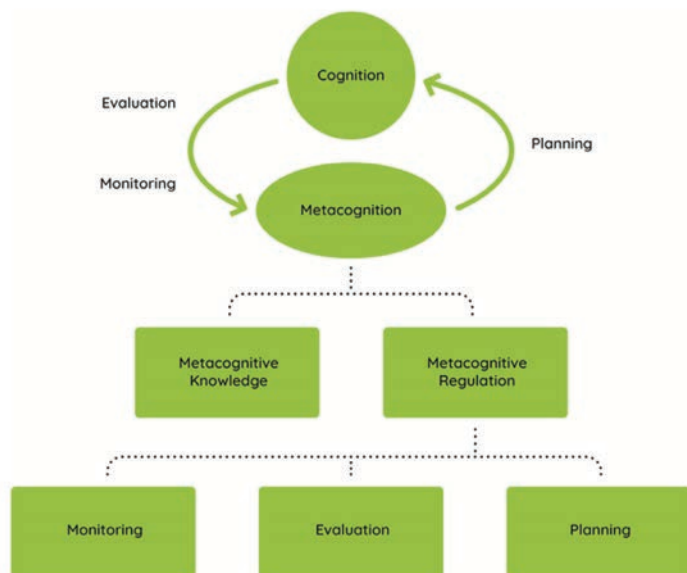


Figure 1 The roles of cognition and metacognition.

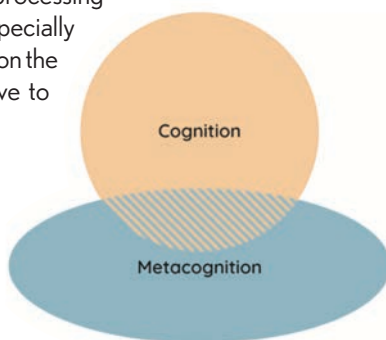
Understanding the limits of your own memory is a form of metacognition because it is based on your awareness of your memory and the limitations of your thinking. These examples also make it clear that metacognition is not a single concept but is multifaceted in nature.

An analogy from management is that cognition is like a clerk whose role is to process and action the decisions taken by the manager, whose metacognitive role is to oversee and supervise the clerk's activities. Just as a manager is supposed to keep an eye on the clerk's performance and take managerial decisions, metacognition regulates thinking and the planning of decisions.

Clinical metacognition includes checking clinical reasoning for possible errors and assessing what one needs to know about a treatment option.⁴ Surgeons are expected to be self-directed learners throughout their careers, and metacognitive skills are critical to this in addressing what, when, and how to learn.

Cognition and metacognition overlap (figure 2). Just as a manager may need to get involved in processing and actioning a decision, especially when the clerk is not around, on the other hand, a clerk may have to make managerial decisions.

Figure 2: The overlap of cognition and metacognition.



A clinical example of the difference in their roles is shown when performing a diagnostic procedure or an investigation. Cognition is knowledge of the technique and test results. Metacognition is the capacity to review the result, determine if it is clinically consistent, and repeat the test if required or to plan the next step.

An example of different facets of metacognition used in studying include recognizing where your weakness in a topic are; using mnemonics as memory aids and following up on your weak points by focusing study on them or reaching out to colleagues for help. These are all aspects of metacognition: metacognitive knowledge, metacognitive monitoring and metacognitive control, respectively.

Metacognitive abilities exist on a spectrum, from someone who is unaware of their thinking process, to disorganised awareness, organised thinking that can be verbalised, and finally, the reflective

learner who can quickly adapt their thinking as the situation requires

Metacognition is necessary for lifelong learning and is essential in the development of professionalism.⁵ An interesting difference between cognition and metacognition is that, while cognitive abilities decline at varying rates after a certain age,⁶ metacognitive capabilities seem to remain.⁷ Thus, senior surgeons with changing cognitive abilities would be expected to maintain and use metacognitive abilities to improve their performance in practice.

Lack of insight and metacognition

Some surgeons are poor at self-assessment and overconfident in their own levels of ability. Their ability may also be limited by distractions, fatigue or competing interests. Such a combination is often compounded by a lack of awareness (or acceptance) that there is a problem. In short, they lack insight. They don't know that they don't know; they are ignorant of their ignorance, making their decision-making error prone.

Sometimes the inability of a surgeon to learn how to make clinical decisions is not because they cannot learn, but because they are less able to appreciate the differences between their own performance and that of others. Fortunately, there is good evidence that increasing metacognitive capacity, their ability to understand and reflect on both the context of decision-making, and the underlying thinking processes they are employing, can improve their overall performance.⁸

Improving metacognition in surgery

To achieve unconscious competence, you need to go to the next stage: knowing what you don't know. The fact is that most surgeons are not familiar with metacognition and may not be aware of how complex, overarching, and crucial surgical decision-making is. Even if they are aware of the complexity, most are unaware of how we process complex decisions. As a profession, we have not thoroughly tried to really understand how surgeons make or should make difficult decisions, why they sometimes go wrong and how experts sometimes make exceptionally smart decisions. Moreover, the efforts that the profession has so far taken to optimise surgical decision-making have not yielded results.

Despite this, some surgeons may still question the value of metacognition and improving decision-making. Surgeons make hundreds of decisions every day; it is a continual and deep-rooted aspect of the profession. Most are automatic and the vast majority do not result in problems. And even when there are problems, there are various factors other than the surgeon's thinking that are usually held responsible. So, there are strong reasons why the decision-making process is not examined more closely, just as we don't pay much attention to other 'automatic' functions like breathing.

However, there is stark evidence that we do indeed need to improve both our individual and collective clinical decision-making:

- Clinical error is one of the **leading causes of death** in the developed world.⁹
- Clinical decision-making can be considered a **significant threat to the patient safety**.¹⁰
- More than 30% of healthcare **costs are wasted** on inappropriate care, and suboptimal care is increasingly connected to the quality of clinical decisions. Approximately 80% of healthcare expenditure results from clinicians' decisions. Therefore, improving healthcare necessitates improving clinical decisions.¹¹

- Analysis of clinical decisions has revealed that a **significant number of errors** occur because of inappropriate thinking.¹²
- Surgical **adverse events** are linked to failures in cognitive skills such as situational awareness and decision-making.¹³
- Following guidelines for surgical interventions has been shown to improve patient outcomes and reduce costs, but **the degree of guideline implementation is variable**. For example, with hernia repair it has been found to be as low as 32% and an average of 65% of procedures.¹⁴

These studies make it clear that there is significant room for improvement when it comes to decision-making.

Surgical training and professional development

Those who are responsible for surgical training are often not aware of recent developments in decision-making and how best to improve it.

In the last few years surgical training has moved away from immersion learning towards more formal, structured programs. Work schedules are regulated with a resulting reduction in clinical exposure. This loss of decision-making experience needs to be compensated by alternative methods. Also, reduced working hours means that trainees and trainers more frequently miss seeing the consequences of decisions they have taken. These factors make the need to actively teach decision-making even more important.

Despite their career-spanning importance, decision-making skills are also largely ignored in professional development, often only covered in an ad hoc and unstructured manner. Although surgeons are assumed to have learnt metacognitive skills through their career and how to learn via self-directed learning, there is ample evidence that this may not be the case.¹⁵

Studies also show that metacognitive skills vary among surgeons, and unfortunately some find it very difficult to improve their skills.¹⁶

Undoubtedly, there have been efforts to address the issue. Articles and books have been written on this subject. In the epilogue of one of those books, *Surgical Decision-making: Beyond the Evidence Based Surgery* by Rifat Latifi, the author writes:

If you thought that by the end of the book, you would understand entirely how surgeons make decisions, I'm afraid that you may not be fully satisfied. While we have explained several aspects of this complex issue, much remains unknown, and further work is required. This work should be done by surgeons in collaboration with those trained to understand the mind, how the brain works and how the brain can be directed or trained.¹⁷

In a sense, what the author raises only at the end of his book – psychological factors – are the focus of this book: what can “those trained to understand the mind, how the brain works and how the brain can be directed or trained,” tell us about surgical decision-making?

The lateness of our profession to acknowledge the importance of psychological factors has parallels with the history of aviation safety, where ‘human factors’ were only identified as key contributors to aviation accidents after decades of focusing predominantly on technological improvements. But once they were recognised as a key cause of accidents, aviation safety improved significantly with the

implementation of training and protocols that addressed human factors, such as checklists.¹⁹

Although we are in serious need of a similar ‘human factor’ revolution in understanding and reducing surgical error, we also require solutions that address ‘intra-human’ factors, i.e., cognitive factors. As the author suggests, to optimise decisions, we need to understand what and how surgeons think while decisions are made. Other professions have made significantly more headway in this direction, including marketing and the financial sector, and a new discipline of ‘decision science’ has developed.

Decision Science

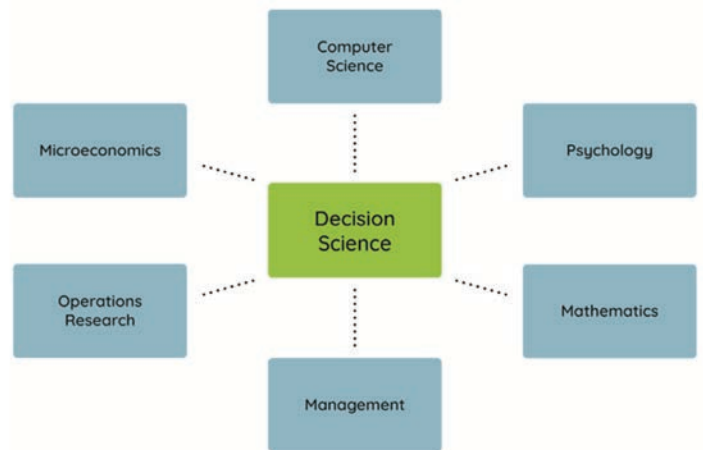


Fig 3-Contributing faculties of decision science.

Decision science has helped to unravel how decision-making works using a multidisciplinary approach incorporating information technology, mathematics, economics, and psychology (figure 3).

It has provided new evidence for how decisions are made, how they can be improved, and it has demonstrated that decision-making is a skill that can and needs to be honed. Much of this new understanding is directly applicable to surgical decision-making, with exciting potentials for improving surgical performance.

Popular metacognition

Before we look at metacognition in a surgical context, let's consider an example of its use in popular culture.

Judith Keppel was a contestant on the show *'Who Wants to Be a Millionaire?'* In case you are unfamiliar with the show; for each question, contestants are asked if they are sure they know the right answer and want to risk their existing winnings on the chance of a higher prize, or if they'd prefer to walk away with whatever they have already won. The stakes are high: being wrong means losing everything you have earned. In Keppel's case, she faced this decision with £500,000 on the line. The million-pound question was: *"Which king was married to Eleanor of Aquitaine?"*

After a brief discussion with the show's host, Chris Tarrant, she settled on the answer of Henry II. Then Tarrant asked his killer question, the moment when contestants typically agonise the most: *"Is that your final answer?"* Success again rests on metacognition. You want to know if you're likely to be right before accepting the risk. Keppel stuck to her guns and became the show's first winner of the top prize.

In Judith's case, we can identify two types of metacognitive situations: She may have known the answer but thought she did not, and therefore would have missed out on the opportunity to become a millionaire. Or she may have been overconfident, choosing to gamble on a wrong answer and losing everything.

If we are overconfident, or think we have more reliable information than we do, we run the risk of not changing our minds when we should to make the right decision.¹⁹ On the other hand, if we are underconfident, we may remain indecisive even when the way forward is clear. More generally, poor metacognition can leave us stuck with decisions that we should have reversed or discarded long ago. Indeed, studies have demonstrated a direct link between metacognition and more careful, considered decision-making.²⁰

Expert metacognition

It is not a chance observation that experts exhibit better metacognitive skills than nonexperts. What we don't know so far is if having metacognitive skills makes someone expert or if one gains such skills after becoming an expert; a 'chicken or egg' conundrum! Regardless, although some may have this ability naturally, most people need to nurture it to become an expert.

By consciously understanding and improving our professional metacognitive skills, as all experts do, we are more able to identify our strengths and limitations precisely, find the most appropriate information and method needed to become an expert, thereby reducing the stress and time involved in achieving expertise. Moreover, metacognitive skills help to maintain the expertise. Indeed, some experts opine that maintaining expertise is more difficult than achieving it, as you are expected to handle more and more difficult cases as your reputation, and the stakes, increase.

Metacognition is also good for you, not just your patients!

So far, we have discussed the need for metacognition in decision-making in terms of patient outcomes. But there is another aspect that is even more important and underrecognised: the relationship between metacognition and a clinician's well-being.

In over a decade working professionally with the mental well-being of surgeons and other specialists, I have seen serious consequences of poor metacognitive skills on doctor's health. Not only have patients lost their lives because of a suboptimal metacognition; doctors have also lost their own lives, too. No doubt these occurrences are rare but the stress around making decisions is certainly commonplace, in particular, the stress of dealing with the consequences of decisions. The increased professional stress and burnout among doctors can be partly attributed to difficulties in decision-making and suboptimal metacognitive skills.

It is not all a dark picture, of course. The satisfaction, relief and pride one experiences after making a difficult but successful decision is a joy that is difficult to describe, and one can really only understand by experiencing it. Again, metacognition plays a role in both negative and positive situations.

Take-away points: An introduction to surgical metacognition

There is concrete evidence that there are problems with clinical decision-making that contribute to poor outcomes.

- Experts are known to have superior metacognitive skills.
- Metacognition is a skill that needs to be developed like any other skill.
- Metacognition plays an important role in decision-making as well as mental well-being.

About the author

Uttam Shiralkar

FRCS, MRCPsych.

Uttam worked as a surgeon for 15 years in the UK, India, and the US before moving to psychiatry. This transition was the result of the medical problems he faced after a car accident. While working in psychiatry, it became clear to him the profound impact that a surgeon's psychology has on performance and surgical outcomes. This revelation inspired him to bring psychological research into surgical practice and training.

For more than a decade Uttam has helped many surgeons at various levels of their careers on a range of issues, providing mentorship, conducting research, speaking at meetings, and running workshops.

Uttam's newest book, Surgical Metacognition: Smarter Decision-making for Surgeons, focuses on the key tool that underlies surgical expertise – metacognition, i.e., 'thinking about thinking.'

References:

- 1 Marsh H. Better not look down.... The Psychologist. 2015;28:466-469.
- 2 Medina MS, Castleberry AN, Persky AM. Strategies for Improving Learner Metacognition in Health Professional Education. Am J Pharm Educ. 2017;81(4):78. doi:10.56688/ajpe81478
- 3 Gonullu I, Artar M. Metacognition in medical education. Education for Health. 2014;27(2):225. doi:10.4103/1357-6283.143784
- 4 Chew KS, Durning SJ, van Merriënboer JJ. Teaching metacognition in clinical decision-making using a novel mnemonic checklist: an exploratory study. Singapore Med J. 2016;57(12):694-700. doi:10.11622/smedj.2016015
- 5 Mahajan R, Badyal DK, Gupta P, Singh T. Cultivating Lifelong Learning Skills During Graduate Medical Training. Indian Pediatr. 2016;53(9):797-804. doi:10.1007/s13312-016-0934-9; Gordon J. Fostering students' personal and professional development in medicine: a new framework for PPD. Med Educ. 2003;37:341-349.
- 6 Park HL, O'Connell JE, Thomson RG. A systematic review of cognitive decline in the general elderly population. Int J Geriatr Psychiatry. 2003;18(12):1121-1134. doi:10.1002/gps.1023
- 7 McGillivray S, Castel AD. Older and younger adults' strategic control of metacognitive monitoring: the role of consequences, task experience, and prior knowledge. Exp Aging Res. 2017;43(3):233-256. doi:10.1080/0361073X.2017.1298956
- 8 Crebbin W, Beasley SW, Watters DAK. Clinical decision-making: how surgeons do it. ANZ J Surg. 2013;83(6):422-428. doi:10.1111/ans.12180
- 9 Makary MA, Daniel M. Medical error: The third leading cause of death in the United States. BMJ. 2016; 353: i2139.
- 10 Tehrani ASS, Lee HW, Mathews SC, Shore A, Makary MA, Pronovost PJ, Newman-Toker DE. 25-Year summary of US malpractice claims for diagnostic errors 1986-2010: An analysis from the National Practitioner Data Bank. BMJ Qual Saf. 2013; 22(8): 672-680.)
- 11 Djulbegovic B, Elqayam S. Many faces of rationality: Implications of the great rationality debate for clinical decision-making. Journal of Evaluation in Clinical Practice; Oct 2017; vol. 23 (no. 5); p. 915-922
- 12 Graber ML, Franklin N, Gordon R. Diagnostic error in internal medicine. Arch Intern Med. 2005;165:1493-1499.
- 13 Leape LL, Brennan TA, Laird N, et al. The nature of adverse events in hospitalized patients—results of the Harvard Medical Practice Study II. N Engl J Med. 1991;324(6):377-384.
- 14 Hargreaves J. Do Clinical Guidelines for Hernia Surgery Reduce Costs and Improve Patient Outcomes, and Do Surgeons Follow Them? Value in Health. 2015;18(7):A570-A571. doi:10.1016/j.jval.2015.091881
- 15 Burman NJ, Boscardin CK, Van Schaik SM. Career-long learning: relationship between cognitive and metacognitive skills. Med Teach. 2014; 36:715-723.
- 16 Mack HG, Spivey B, Filipe HP. How to Add Metacognition to Your Continuing Professional Development: Scoping Review and Recommendations. Asia Pac J Ophthalmol (Phila). 2019;8(3):256-263. doi:10.22608/APJ.2018280
- 17 Latifi R. Surgical Decision Making: Beyond the Evidence Based Surgery. Springer International Publishing; 2016.
- 18 Gawande A. The Checklist Manifesto How to Get Things Right. Metropolitan Books; 2010.
- 19 Fleming SM. Know Thyself: How the New Science of Self Awareness Gives Us the Edge. John Murray; 2021: 138-139.
- 20 Rollwage M, Dolan RJ, Fleming SM. Metacognitive Failure as a Feature of Those Holding Radical Beliefs. Curr Biol. 2018;28(24):4014-4021.e8. doi:10.1016/j.cub.2018.10.05

Cardiovascular manifestations in patients with chronic renal failure



Dr Hadeed Abbasi

Clinical teaching fellow in Surgery at Wrightington, Wigan and Leigh Teaching Hospitals Foundation Trust.

Professor Ayaz Abbasi

Consultant in Emergency Medicine at Wrightington, Wigan and Leigh Teaching Hospitals Foundation Trust.

Introduction

Our hearts and kidneys are two intrinsically linked organs. To better understand their relationship and how damage to one affects the other, we will start at one extreme: chronic renal failure (CKD). We as clinicians are only able to delay the evolution to end-stage kidney disease (ESKD), which is affected by various geographical, racial, and age-related factors¹.

The idea that there is an increased risk of cardiovascular disease at every stage of chronic kidney disease is well-established, with sufferers twenty times more like to die of a heart attack or stroke than to receive dialysis. Even after receiving renal replacement treatment, cardiovascular problems are the leading cause of death in CKD patients (the Centre of Disease Control notes heart disease as the leading cause of death in the United States outright)^{1,2,3}. Indeed, in earlier stages of CKD, the cardiovascular risk is much higher than that of renal failure, with the patient more like to succumb to cardiovascular disease than ESKD. The likelihood of kidney failure only exceeds that of CVD when there is significant kidney dysfunction (GFR <30 mL/min/1.73 m²)⁴.

The existence of a symbiotic relationship between CKD and CVD is well-documented, with CKD promoting hypertension, dyslipidaemia, diabetes, and obesity (the traditional cardiac risk factor square) which then go on to further CKD. To simplify this interrelationship, CKD is an independent risk factor for CVD and vice versa. Each contributes to the pathogenesis of the other, leading to a cycle of progression^{5,6,7,8}.

Diabetes is regarded as the leading cause of kidney failure in developed countries. Hyperglycaemia damages the arteries in your kidney and causes a higher chance of the patient developing high blood pressure, inflicting further damage. Waste products accumulate in the blood, the kidneys fail, and renal replacement therapy will be needed^{9,10}.

Aims

The objectives of the present study were to examine cardiovascular symptoms and disease in a group of patients diagnosed with chronic renal failure. Our intention was to explore the associations between the myriad of cardiac pathology and chronic kidney disease.

Materials and Method

The study took place in the Constanta hospital (Romania) with patient records taken from the months of May 2018 (23 patients) and February 2019 (27 patients), so that our data would not be skewed due to any seasonal changes. This makes our work an observational,

retrospective, cohort study of non-selected patients. The details of the age interval and numbers are given in Figure 1 and Table 1.

50 patients were methodically selected from the Hippocrates system found on hospital computers, by specifying the above timeframe and searching for the coded phrase, "alta insuficienta renala cronica." Deceased patients were excluded from the survey. None of our patients were found to be undergoing dialysis treatment. Via the EPR (electronic patient record), we were able to systematically analyse.

Statistical analysis was performed using Microsoft Excel 2016 and MedCalc.

Results and Observations

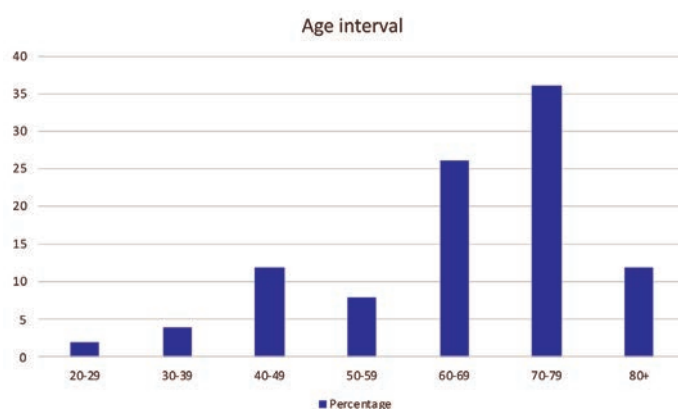


Figure 1: Age Interval

Table: Details of Age Interval

Age Range	Number	Percentage
20-29	1	2
30-39	2	4
40-49	6	12
50-59	4	8
60-69	13	26
70-79	18	36
80+	6	12

From the data we have collected, we can deduce that the 70-79 years age range contained the most CKD sufferers, followed by patients aged between 60-69 years. This lends weight to the theory that CKD is mostly found at an old age population and could be linked to natural ageing phenomenon (as incidence seemingly rises proportional to age). High mortality could explain why the 80+ years age percentile does not have the highest number of patients. This also lends some credibility to the idea that as most patients are asymptomatic sufferers

of CKD, they are only diagnosed with renal failure after developing another co-morbidity in senior populations .

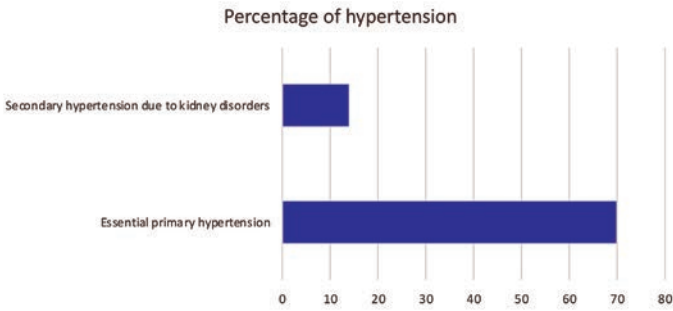


Figure 2: Types and Percentage of Hypertension

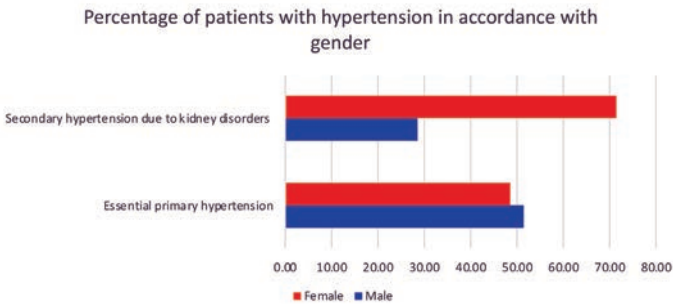


Figure 3: Hypertension & CKD

Table 2: Essential Hypertension and gender

Gender – Essential #1 Hypertension	Number	Percent
Male	18	51.43
Female	17	48.57
Total	35	70

Table 3: Hypertension and CKD (Gender distribution)

Gender - #2 hypertension due to kidney disorders	Number	Percent
Male	2	28.57
Female	5	71.43
Total	7	14

From the total number of patients, 35 (70%) had essential hypertension, either prior or post-diagnosis of CKD (Fig 2). We can class this as a majority, there is a clear association between CRF and hypertension and the synergistic involvement they have with each other’s pathology. Male patients were more likely to suffer from essential primary hypertension (Table 2); however, the opposite is true and with a wider comparison for secondary hypertension directly sourced to specific kidney disorders; 71% of females compared to 28% of males (Table 3).

Most hypertensives were known to have grade 3 hypertension (severe), which reveals to us a chronic renal failure’s link to worsening hypertension (as there was no hypertensive patient recorded as being in Stage 1). We can also surmise the poor management and control of hypertension in chronic renal failure sufferers. As will be revealed further in this study, most of the cohort were in the final stage of renal failure so this is not a surprising finding. If the patient was hypertensive before the diagnosis of CKD, we could also conclude the former lends itself to earlier deterioration of the renal system.

Percentage of patients with arrhythmias/blocks

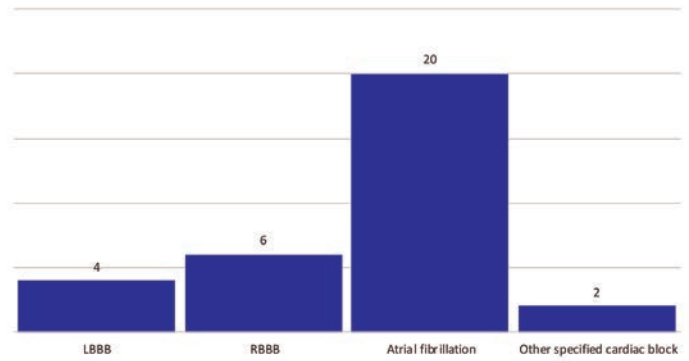


Figure 4: Conduction disorders and arrhythmias

Table 4: Types of Arrhythmias

Characteristic	Number	Percentage
LBBB	2	4
RBBB	3	6
Atrial fibrillation	10	20
Other specified cardiac block	1	2

From the total number of patients collected, 16 (32%) were known to have a conduction defect and/or abnormal rhythm (Fig 4). Of these, atrial fibrillation was the most common and right bundle branch block (RBBB) was more prevalent over left bundle branch block (LBBB), signifying that its finding is of a higher importance and relevance in a renal patient (Table 4).

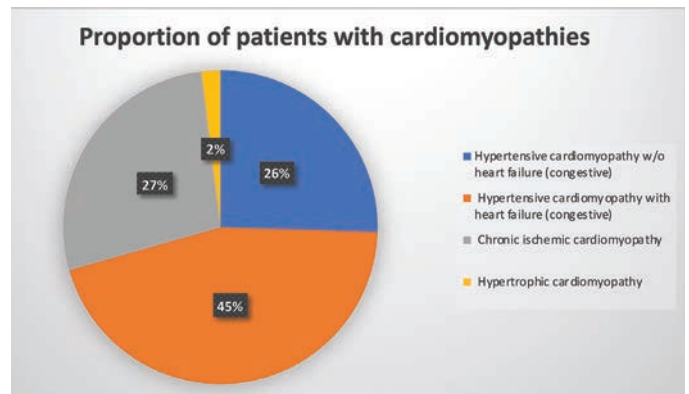


Figure 5: Heart failure and cardiomyopathies

Table 5: Hypertension and Cardiomyopathies.

Cardiomyopathy	Number	Percentage
Hypertensive without congestive Heart Failure	13	26
Hypertensive with congestive Heart Failure	23	45
Chronic ischemic	14	27
Hypertrophic	1	2

A great number of CKD patients in the study presented with a cardiomyopathy, with an overlap noted in various cases (Table 5). Hypertensive cardiomyopathy was especially statistically significantly with 71% of renal patients in our survey suffering from the ailment (Fig 5). Within this subtype, patients were more likely to exhibit congestive heart failure than not (45% compared to 26%). There is an extremely high chance of a patient developing one or more cardiomyopathy if they suffer from CKD, and even more so if they are hypertensive. Almost half of the patients with the most common form of cardiomyopathy were said to also have heart failure (Table 5).

Discussion

Chronic kidney disease (CKD) affects 10–15% of the population worldwide and its prevalence is increasing¹¹. CKD is defined as the presence of reduced kidney function (an estimated glomerular filtration rate [eGFR] < 60 mL/min/1.73 m²)¹² or kidney damage (often indicated by the presence of proteinuria) for ≥ 3 months duration¹³.

In our study 70–79 (36%) years age range contained the most CKD sufferers, followed by patients aged between 60–69 years (26%). Incidence of CRF is seemingly proportional to increasing age, adding weight to the theory that chronic kidney disease is a factor implicated in normal ageing phenomenon. The high level of mortality in 80+ years old patients explain the percentage drop in that percentile.

A vast majority of patients surveyed (70%) had essential hypertension, signifying a clear link between hypertension and CKD. Male patients were slightly more likely to suffer from essential primary hypertension (51% compared to 48% of females) and female patients were more likely to have secondary hypertension directly sourced to specific kidney disorders (71% of females compared to 28% of males). 69% of high blood pressure patients were graded as being in Stage 3 hypertension, 31% in Stage 2 and none in Stage 1; inferring the severity of CKD's effect on blood pressure and vice versa. The number of patients in Stage 3 leads us to conclude that hypertension is poorly managed in the CKD population. Hypertension is an important risk factor for CKD, and approximately 85–90% of patients with stage 3–5 CKD have hypertension. Long-term hypertension leads to high intraglomerular pressure, which subsequently impairs glomerular filtration¹⁴. Hypertensive cardiomyopathy was statistically significantly with 71% of renal patients in our survey suffering from the ailment (of which the variety with congestive heart failure is more widespread). There is an extremely high chance of a patient developing one or more cardiomyopathy if they suffer from chronic renal failure, and even more so if they are hypertensive. Almost half of the patients with the most common form of cardiomyopathy were said to also have heart failure. When it comes to diabetes, 40% of patients were known to have type 2 Diabetes Mellitus. Men were more prone to the disease than women. The global prevalence of microvascular and macrovascular complications associated with Diabetes Mellitus is increasing dramatically¹⁵. Microvascular changes within the kidney often lead to chronic kidney disease (CKD), an entity referred as diabetic kidney disease (DKD) or diabetic nephropathy¹⁶. This disease is characterised by a distinct histopathological pattern of glomerular basement membrane (GBM) thickening, mesangial matrix expansion, nodular glomerulosclerosis, and arteriolar hyalinosis. This histopathological pattern is frequently observed in young and lean patients with type 1 Diabetes Mellitus (T1DM), but biopsy samples from patients with type 2 Diabetes Mellitus (T2DM), often indicate the presence of other pathogenic factors, such as primary glomerulopathies, ageing-related nephropathy, or previous episodes of acute kidney injury (AKI). Thus, the term DKD lacks precision in describing the most prevalent form of kidney disease in patients with Diabetes Mellitus.

There were 16 (32%) known cases of a conduction defect and/or abnormal rhythm. Of these, atrial fibrillation was the most common and right bundle branch block (RBBB) was more prevalent over left bundle branch block (LBBB), signifying that its finding is of a higher importance and relevance in a renal patient.



Conclusion

We conclude from our study that most patients are asymptomatic sufferers of CKD. They are only diagnosed with renal failure after developing another co-morbidity in senior population.

If the patient was hypertensive before the diagnosis of CKD, we could also conclude the former lends itself to earlier deterioration of the renal system. There is an extremely high chance of a patient developing one or more cardiomyopathy if they suffer from CKD, and even more so if they are hypertensive.

References:

1. Kumar P, Clarke M. Clinical Medicine. 6th ed. 2005. 665–681 p.
2. Chronic Kidney Disease and Your Heart [Internet]. Davita Kidney Care. 2006. Available from: <https://www.davita.com/education/kidney-disease/symptoms/chronic-kidney-disease-and-your-heart>
3. Wilkinson IB, Raine T, Wiles K, Goodhart A, Hall C, O'Neill H. Oxford Handbook of Clinical Medicine. 10th ed. Oxford: Oxford University Press; 2017. 304–309 p.
4. Dounousi E, Duni A, Marinaki S, Boletis JN. Framing and managing cardiovascular risk in chronic kidney disease: from native to transplanted kidney. *Contin Cardiol Educ*. 2017 Jun;3(2):70–7.
5. Shamseddin MK, Parfrey PS. Sudden cardiac death in chronic kidney disease: Epidemiology and prevention. *Nat Rev Nephrol*. 2011;7(3):145–54.
6. Schiffrin EL, Lipman ML, Mann JFE. Chronic kidney disease: Effects on the cardiovascular system. *Vol. 116, Circulation*. 2007. p. 85–97.
7. Wright J, Hutchison A. Vascular Health and Risk Management Cardiovascular disease in patients with chronic kidney disease. *Vasc Health Risk Manag*. 2009;5:713–22.
8. Menon V, Gul A, Sarnak MJ. Cardiovascular risk factors in chronic kidney disease. *Vol. 68, Kidney International*. 2005.
9. PARFREY PS, FOLEY RN. The Clinical Epidemiology of Cardiac Disease in Chronic Renal Failure. *J Am Soc Nephrol*. 1999;10(7).
10. Tan KS, Johnson DW. Managing the cardiovascular complications of chronic kidney disease. *Vol. 31, Australian Prescriber*. Australian Government Publishing Service; 2008. p. 154–8.
11. Einhorn LM, Zhan M, Hsu VD, Walker LD, Moen MF, Seliger SL, et al. The frequency of hyperkalemia and its significance in chronic kidney disease. *Arch Intern Med*. 2009 Jun 22;169(12):1156–62.
12. Bucharies SGE, Varela AM, Barberato SH, Pecoits-Filho R. Avaliação e manejo da doença cardiovascular em pacientes com doença renal crônica. *J Bras Nefrol [Internet]*. 2010 Mar [cited 2019 Aug 29];32(1):120–
13. Park J. Cardiovascular risk in chronic kidney disease: Role of the sympathetic nervous system. *Vol. 1, Cardiology Research and Practice*. 2012.
14. Taler, S. J. et al. KDOQI US commentary on the 2012 KDIGO clinical practice guideline for management of blood pressure in CKD. *Am. J. Kidney Dis*. 62, 201–213 (2013).
15. International Diabetes Federation. IDF Diabetes Atlas – 7th Edition. *Diabetes Atlas* <http://www.diabetesatlas.org/> (2015).
16. Zoungas, S. et al. Effects of intensive glucose control on microvascular outcomes in patients with type 2 diabetes: a meta-analysis of individual participant data from randomised controlled trials. *Lancet Diabetes Endocrinol* 5, 431–437 (2017).

A Reflection on the Biopsychosocial Factors of a Colorectal Cancer Patient



Josh Matthews Year 4 Medical Student, University of Central Lancashire School of Medicine. jmatthews17@uclan.ac.uk

Introduction

During my critical care placement, I had a conversation with a 68-year-old gentleman who had colorectal cancer (CRC). For this reflection, I will refer to this patient as “Frank”. When I met Frank, he was recovering after surgery for the reversal of a loop ileostomy. Frank was diagnosed with colorectal cancer in 2021 after being hospitalised for a bowel obstruction. He underwent surgery and subsequent chemo and radiotherapy for 5 months until he was declared cancer-free.

Frank was very pleasant to talk to and was elated that his surgery had gone well and that he no longer needed a stoma bag. He spoke to me at length about his cancer journey. He was very open about his struggles with anxiety and depression through his treatment and had high praise for his oncology team, whom he credits for improving his outlook on the disease. He also told me about the impact of his treatment on his day-to-day activities and the sacrifices that he and his family had to endure. I also asked Frank about some of the risk factors that could have led to his diagnosis, such as his long-term smoking habit and poor diet of red meats and processed foods.

Frank stood out to me as a patient because of his positive attitude about his disease and outlook on life. I have an interest in pursuing Oncology, which has a misplaced perception of being a “depressing speciality”. Getting to talk to Frank strongly disproves that perception for me. Oncology is a growing, innovative field and as new treatments make cancer an increasingly chronic illness, I feel it is important as a clinician to address the long-term mental health challenges of anxiety and depression that may arise. It is also essential that clinicians address public health aspects such as the risk factors of poor diet and smoking and the uptake of screening for more positive future patient outcomes¹.

Psychology

Positive outlook and upbeat perspective of one’s disease are very important for a cancer patient. Frank didn’t always have this attitude and he admitted that he very often suffered anxiety and depression, especially related to uncertainty about the progression of the disease and the lifestyle changes caused by cancer.

Frank had to retire early from a job he loved and had to give up his favourite hobby of nature walks. Frank also found his intensive chemotherapy regimens mentally and physically draining. Post-surgery, coping was difficult with the stoma bag that limited his activities which in his opinion was “one of the worst parts” of his cancer



treatment. Accidents with public embarrassment gave him “social anxiety” and he became selective with social events.

Throughout the cancer journey, he felt very supported by his oncology team and praised their efforts. I met Frank in the critical care unit on the second post-op day as he was recovering from his surgery to close the stoma. This was a major milestone in his cancer journey as it marked a relative return to normalcy. The treating team including

myself were very pleased with the successful outcome of his surgery. He felt that going through the course of treatment with a relatively good understanding of the illness greatly helped him to cope. Further, learning how well he was responding improved his positive attitude.

Cancer patients are more likely to have an external locus of control and perceive “powerful others” such as the medical team, to be responsible for their health which can have an association with depression. Thus, people with a high internal locus of control can better cope^{2,3}. Frank had a positive therapeutic relationship with his oncology team and felt very involved and informed through clinical decisions. I reflected that this might have given him a high internal locus of control with good coping skills. As a clinician, patients must be informed and involved in the decisions of cancer treatment. A patient-centred approach serves to nurture an internal locus of control, reducing the risk of depression and anxiety and making the cancer journey more bearable⁴.

The occurrence of depression and anxiety are variable among CRC patients. A literature review of 15 studies found a prevalence of depression in CRC patients ranging from 1% to 57%, 11 of which had the concurrence of anxiety, ranging from 1.0% to 47.2%⁵. Three studies also concluded that older patients were associated with higher levels of depression. Mental health concerns of depression and anxiety have an association with higher mortality among cancer patients⁵. Hence it is important to address these concerns.

An equally important aspect of cancer treatment that I feel is overlooked is cancer’s implication on the mental health of caregivers. Frank informed me that his wife became severely depressed and withdrawn, proving that depression preys not only on cancer patients but on family members as well. A study found that a 67% majority of cancer caregivers had high depression scores⁶. Older caregivers, women, and the spouse of the patient such as Frank’s wife were also more likely to experience cancer depression⁶. Cancer is a burden that the whole family has to bear and they may have individual ways of coping⁷.

CBT has been well studied as a beneficial therapy option for cancer patients for not only reducing post-treatment fatigue, distress and pain but also improving feelings of depression, helplessness, hopelessness and overall improving quality of life⁸. Support groups are also an important psychosocial intervention for both patients and their families. They allow patients to learn practical coping skills during treatments in addition to providing emotional support through the sharing of similar experiences⁹. Frank was in contact with a CRC support group and feels that learning from the shared experiences of others helped him cope with his depression. Following the successful outcome of his surgery, Frank feels obliged to impart his own experiences to help other patients.

In my future clinical practice, I am determined to communicate plainly with my patients, making sure they feel involved and informed of their treatment plan, giving them a sense of control over their disease, and alleviating any anxieties they may have. I will monitor their mental health with questionnaires at their follow-ups and signpost patients and their families to resources such as support groups, and biopsychosocial interventions such as CBT¹⁰.

Public Health

Screening for colorectal cancer is necessary for early detection and has been known to significantly reduce morbidity and mortality¹¹. Convincing the population about the importance of a screening test is one strategy to increase compliance¹². Unfortunately, Frank did not participate in the NHS screening program, which he greatly regrets.

Frank chose not to participate in screening as he felt that he was not at significant risk for cancer. He had no history or family history of cancer and believed that aside from his smoking and COPD, he was living a healthy life with a balanced diet and regular exercise. Reflecting on his perspective, I realised the health literacy gap between a physician and the general public that needs to be addressed¹¹. Frank’s perception of screening has changed since his diagnosis, and he now agrees that older people with similar risk factors as him should do the recommended screening. Regular screening with the faecal occult blood test (FOBT) can reduce the risk of dying from CRC by 16% and is offered biennially to adults aged 60-69¹³. A study that examined non-uptake in the NHS faecal occult blood test screening programme found similar reasons to Frank’s in the study population such as a perceived good judgement of health and other reasons including the inconvenience and stigma of collecting a faecal sample, the detachment from usual healthcare settings and the implications of learning the results¹³.

Despite his previous perceptions, Frank clearly had the risk factors for colorectal cancer. Frank is a long-term smoker, to the point where he doesn’t remember when he started smoking and the average number of cigarettes he uses. When I asked him, Frank was indifferent about quitting smoking, citing that it would be difficult to end a day-to-day aspect of his life. Frank did not attribute his CRC risk to his smoking habit but instead to possible occupational exposure to cement dust. This surprised me as smoking is commonly known to be a risk factor for CRC, having been linked to an estimated 7% of CRC in the UK¹. It shows a lack of knowledgeability that cannot be necessarily blamed on Frank but rather a divide between doctors and patients on the perception of risk factors. Perhaps if Frank was better educated by healthcare professionals on his risk for CRC, he may have taken actions to reduce his risk and sought out screening. A study that examined the influence of health literacy on colorectal cancer screening found that patients with limited health literacy were more likely to have more perceived barriers to CRC screening and less knowledge about CRC in general¹¹.

Frank’s diet of mostly processed foods, red meats and a lack of a fibre rich diet is also a risk factor for colorectal cancer, which he mostly attributes to his on-the-go lifestyle as a cross country cement truck driver. An estimated 30% of CRC cases in the UK are linked to a low fibre diet while 13% are linked to eating processed and red meat¹. A prospective study in the UK found that alcohol, processed meats, and red meats were associated with an increased risk of colorectal cancer and that fibre-rich foods such as bread and cereals were associated with a decreased risk¹⁴. The study also suggested that reducing meat intake below the current recommendations of less than 90 grams a day could further reduce risk¹⁴.

I feel that clinicians should be doing more to educate patients so that they can be encouraged to pursue screening and alleviate the stigmas associated with it. This is critically important as the incidence of CRC is increasing in younger populations which may warrant the expansion of screening¹⁵. Increasing health literacy in the public can remove some of the perceived barriers to screening and allow them to take action to reduce risk factors¹¹. In my future practice, I intend to promote cancer prevention health literacy by talking to patients and families using simple language in any opportune primary and tertiary care settings. This will encourage families to reiterate the information and share their experiences with their communities thus further raising awareness. Physicians can also be active in local communities by conducting health fairs, talking at schools, or facilitating informational support groups^{9,16}. I would like to be involved in these activities when I practice.

Conclusion

Getting the chance to talk to Frank about his condition gave me insight into the biopsychosocial aspects of a patient's cancer journey and its significance for achieving positive outcomes. A deeper understanding of these aspects matured my outlook not only as a practitioner but also as a compassionate, empathetic individual, that can approach the innately human struggle with cancer.

Frank's honesty about his mental health struggles made me realise that as a future practitioner, I should encourage and ensure that my cancer patients have access to effective interventions such as CBT to address mental health issues like depression and anxiety and referral to the mental health team for counselling or treatment. I also realised the mental health toll cancer takes on family caregivers and the importance of ensuring their well-being for the functioning of the family unit. In my future practice, I will endeavour to signpost patients and family members to all available resources including support groups and biopsychosocial interventions.

I would strive to cultivate a positive therapeutic relationship with my patients by building a strong rapport through clear communication skills, creating a high internal locus of control, and leading to better outcomes in mental health by reducing anxiety and depression. By practising patient-centred care, I would aspire to educate patients on cancer, its treatment and prognosis and engage them greatly in all decisions to empower them through these life-changing treatments. I realised the polarising divide in health literacy between doctors and patients and the importance of closing this gap to address the upstream public health factors involved with CRC. I also recognised the vitality of screening and early detection, the aftermath of missed screening and how by fostering health literacy, screening uptake can be encouraged, and patient outcomes improved overall. Thus, in my future practice, I will strive to enlighten patients, family members and the community on the risk factors for cancer and the benefits of all screenings in simple lay terminology and be an advocate for preventive health.

Take-home points

- A biopsychosocial approach should be incorporated with cancer care, particularly with patients' mental health and preventative public health measures.
- Cancer patients and their caregivers can experience significant depression and anxiety over the course of treatment. It is important that clinicians support patients and caregivers by signposting them to resources such as CBT and support groups.
- Clinicians should strive to increase health literacy by educating patients on the risk factors of cancer such as smoking and diet as well as on screening to encourage uptake, thereby improving patient outcomes.



References:

1. Cancer Research UK. Risks and causes of bowel cancer [Internet]. Cancer Research UK. 2015 [cited 2022 Mar 20]. Available from: <https://www.cancerresearchuk.org/about-cancer/bowel-cancer/risks-causes>
2. Dopelt K, Bashkin O, Asna N, et al. Health locus of control in cancer patient and oncologist decision-making: An exploratory qualitative study. Schouten B, editor. PLOS ONE. 2022;17(1):e0263086.
3. Goldzweig G, Hasson-Ohayon I, Alon S, et al. Perceived threat and depression among patients with cancer: the moderating role of health locus of control. Psychology, Health & Medicine. 2016;21(5):601-7.
4. Thomas T, Althouse A, Sigler L, et al. Stronger therapeutic alliance is associated with better quality of life among patients with advanced cancer. Psycho-Oncology [Internet]. 2021 Mar 8 [cited 2021 Aug 6];30(7):1086-94. Available from: https://onlinelibrary.wiley.com/doi/full/10.1002/pon.5648?sam1_referrer
5. Peng Y-N, Huang M-L, Kao C-H. Prevalence of depression and anxiety in colorectal cancer patients: A literature review. International Journal of Environmental Research and Public Health. 2019;16(3):411.
6. Rhee YS, Yun YH, Park S, et al. Depression in family caregivers of cancer patients: The feeling of burden as a predictor of depression. Journal of Clinical Oncology. 2008;26(36):5890-5.
7. Woźniak K, Izyccki D. Cancer: a family at risk. Menopausal Review. 2014;4(13):253-61.
8. Daniels S. Cognitive behavior therapy for patients with cancer. Journal of the advanced practitioner in oncology [Internet]. 2015;6(1):54-6. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4577033/>
9. Weis J. Support groups for cancer patients. Supportive Care in Cancer [Internet]. 2003 [cited 2019 Oct 22];11(12):763-8. Available from: <https://link.springer.com/article/10.1007/s00520-003-0536-7#Sec7>
10. Mosher CE, Winger JG, Given BA, et al. A systematic review of psychosocial interventions for colorectal cancer patients. Supportive Care in Cancer [Internet]. 2017;25(7):2349-62. Available from: <https://dx.doi.org/10.1007/s00520-017-3693-9>
11. Peterson NB, Dwyer KA, Mulvaney SA, et al. The influence of health literacy on colorectal cancer screening knowledge, beliefs and behavior. Journal of the National Medical Association [Internet]. 2007;99(10):1105-12. Available from: <https://pubmed.ncbi.nlm.nih.gov/17987913/>
12. Alberti LR, Garcia DPC, Coelho DL, et al. How to improve colon cancer screening rates. World Journal of Gastrointestinal Oncology [Internet]. 2015;7(12):484. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4678395/>
13. Palmer CK, Thomas MC, von Wagner C, et al. Reasons for non-uptake and subsequent participation in the NHS Bowel Cancer Screening Programme: a qualitative study. British Journal of Cancer. 2014;110(7):1705-11.
14. Bradbury KE, Murphy N, Key TJ. Diet and colorectal cancer in UK Biobank: a prospective study. International Journal of Epidemiology [Internet]. 2019;49(1). Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7124508/>
15. Vuik FE, Nieuwenburg SA, Bardou M, et al. Increasing incidence of colorectal cancer in young adults in Europe over the last 25 years. BMJ [Internet]. 2019;68(10):1820-6. Available from: <https://gut.bmj.com/content/68/10/1820>
16. Smith SG, Osborne K, Tring S, et al. Evaluating the impact of a community-based cancer awareness roadshow on awareness, attitudes and behaviors. Preventive Medicine [Internet]. 2016;87:138-43. Available from: <https://pubmed.ncbi.nlm.nih.gov/26921657/>

A response to the G.M.C.'s latest report on tackling disadvantage in medical education



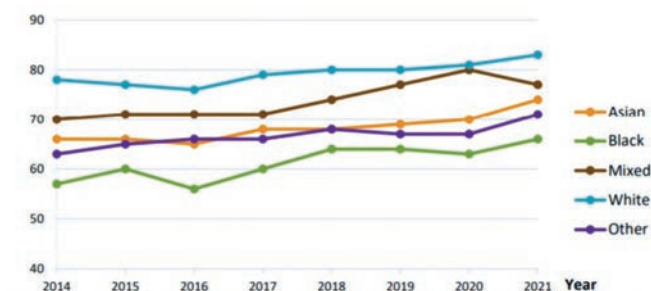
Dr Sai Pillarisetti Chair, BIDA Junior Doctors' Forum

This past month the GMC released a report on the inequalities and barriers experienced by ethnic minorities and how this disparity can be compounded by socioeconomic situation, highlighting data that those from deprived areas too experience poorer outcomes.

This latest report from the GMC is particularly relevant as it is the first time the regulator has split the data by ethnicity in a more detailed way after setting a target in 2021 to eliminate discrimination, disadvantage and unfairness in medical education over the next decade.

While it is very encouraging to see the efforts employed to create this report, it is disappointing that it confirms what we have long known to be true -- that trainees of Black and Asian heritage have significantly lower rates of passing specialty exams and that this disparity extends far beyond exams and is now evidenced that it also impacts progression, with these groups more likely to experience extension to their training time and lower success rates when applying for specialty training posts.

Specialty exam pass rates



Doctors n = 13,721 (2014); 13,739 (2015); 14,511 (2016); 14,565 (2017); 14,502 (2018); 14,668 (2019); 10,913 (2020); 16,049 (2021) "no information on ethnic group" removed

Figure 1: Specialty exam pass rates for UK trained doctors by ethnic group, 2014 - 2021 (%)

UK graduates from a White background have a specialty exam pass rate of 79%. However, these figures are noticeably lower for those of Asian heritage (68%) and even lower for those from Black heritage (62%).

While it has been known for many years that doctors who qualified overseas have poorer outcomes than UK qualified trainees, it is now conclusive that even among IMGs, those from a minority ethnic background have poorer outcomes than their white IMG counterparts.



Doctors n = 2,630 (2014); 2,430 (2015); 2,345 (2016); 2,374 (2017); 2,531 (2018); 2,959 (2019); 2,621 (2020); 4,647 (2021) "no information on ethnic group" removed

Figure 3: Specialty exam pass rates for IMG trainees by ethnic group, 2014 - 2021 (%)

It is imperative that the relevant bodies take notice of this report and take meaningful action to make these exams more equitable to those from all backgrounds.

This should include involving those from minority ethnic backgrounds in question creation and design and examination boards should strive for equal representation where the diversity of their panels reflect the multicultural workforce that we are proud to have in our NHS.

Additionally, examiners should be required to undergo robust unconscious bias training which has been shown to be an established and effective tool aimed at tackling differential attainment.

Finally, I encourage a similar investigation into the Situational Judgment Test (SJT), an exam taken by final year medical students before applying for FY1 training posts. The exam's importance has increased in recent times despite repeatedly being shown to disadvantage not just international students but also home students of minority ethnic background.

Training outcomes

Table 1: Average percentage of UK graduate trainees receiving ARCP outcome 2, 3, 4, 7.2, 7.3, D or E, 2010 - 2021

Ethnic group	Average % trainees receiving unsatisfactory ARCP outcome 2, 3, 4, 7.2, 7.3, D or E 2010 2021
Asian	8% (n = 139,788)
Black	11% (n = 15,206)
Mixed	7% (n = 22,447)
White	6% (n = 417,917)
Other	8% (n = 18,264)

n = number of ARCP outcomes

The table above highlights how Black and Asian trainees also have poorer ARCP outcomes with 11% and 8% of them receiving unsatisfactory outcomes compared to just 6% of white trainees.

Compared to their White counterparts, Asian trainees are also 50% more likely to experience an extension to their training time and this is twice as high for Black trainees.

Table 2: Average percentage of UK graduate trainees receiving ARCP outcome 3 or E (extra time required) 2010 - 2021

Ethnic group	Average % trainees receiving ARCP outcome 3 or E (extra time required) 2010 2021
Asian	3.8% (n = 139,788)
Black	5.3% (n = 15,206)
Mixed	3.1% (n = 22,447)
White	2.6% (n = 417,917)
Other	3.8% (n = 18,264)

n = number of ARCP outcomes



Sai Pillarisetti @SaiPillariseti · 4d
 My response in the @pulsetoday to the #GMC's latest report on tackling disadvantage in medical education.

It is imperative that we work together to ensure that all aspects of training and career progression are equitable to those from all backgrounds

pulsetoday.co.uk/news/regulatio...



GMC

Additionally, Black doctors are less likely to receive an offer when applying to specialty training at 75% compared with 82% for white trainees.

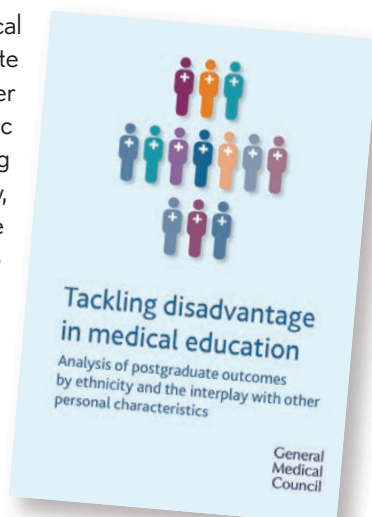
Disability

The report also highlighted how overseas graduates are considerably less likely to declare a disability than UK graduates, only 2% of IMG Asian and IMG black trainees have done so compared to 10 - 11% of UK white, UK black and UK mixed ethnicity groups who graduated from the UK. This may stem from a lack of accessibility to this information or possibly hesitation in relation to the consequences of such a declaration. Given the stark disparities identified in the report, this is definitely an area we should aim work on at BIDA, alongside our colleagues in the GMC.

Conclusion

This data has helped paint a clearer picture of the stark disparities in UK medical training and stresses the need for urgent and meaningful action by all stakeholders. I would like to conclude by thanking the GMC for publishing this report and I look forward to seeing the actions taken by the relevant bodies in response.

With almost half of NHS medical staff coming from non-white backgrounds, there have never been more minority ethnic doctors and IMGs contributing to the NHS than there are today, and it is the responsibility of those leading the establishment to ensure that medical training is made equitable and fair to everyone and that outcomes are based on competence and merit and irrespective of race, religion, gender or socio-economic status.



Medical Quiz

1 A 67-year-old gentleman presents with a three-month history of new onset symptoms such as skin flushing in the neck and face, diarrhoea, throat tightness and unintentional weight loss (5 Kg). The GP records his observations in the clinic: Pulse: 61 Blood pressure: 98/61 Temperature: 36.9 C

What investigation would the GP request to investigate further?

- a) Chest X-ray
- b) ECG
- c) Ultrasound Abdomen
- d) Urine Sodium
- e) Urinary 5-HIAA

2 A 34-year-old gentleman presents with 6 episodes of bloody stools per day for the last 4 days to Emergency Department (ED). He has a background of Ulcerative Colitis and is on rectal Mesalazine. Since last night he has had abdominal pain and his temperature is 37.9 C (recorded by the nurse in ED).

What is the next investigation that the ED doctor must arrange?

- a) Flexible Sigmoidoscopy
- b) Rigid Sigmoidoscopy
- c) Abdominal X-ray
- d) Chest X-ray
- e) Ultrasound Abdomen

3 A 25-year-old lady presents with three weeks history of tiredness, joint pain and swelling. She has a background of childhood asthma which has now resolved. On examination the GP notes that she has a red rash over her nose and cheeks. The practice nurse has informed the GP that she has 2+ protein in her urine sample (urine dip).

What is the main diagnosis that the GP would suspect?

- a) Osteoarthritis
- b) Rheumatoid Arthritis
- c) Glomerulonephritis
- d) IgA nephropathy
- e) Systemic Lupus Erythematosus

4 A 64-year-old gentleman presents to Emergency department with new onset symptoms of right-sided hearing loss, right-sided facial weakness and pain around the right ear. He has a background of ischaemic heart disease, hypertension and type 2 diabetes. He does not have any drug allergies. He does not report any injuries. On examination, the ED doctor notes that he is not able to shut his right eye fully. Moreover, a vesicular rash is noted around the right ear.

What would be the immediate management of this condition

- a) IV Steroids
- b) IV Co-Amoxiclav
- c) High dose Aciclovir, Oral Steroids and Eye protection
- d) Oral Ibuprofen and Eye protection
- e) High dose Aciclovir and Eye protection

5 A 26-year-old lady is referred to neurology clinic. She has experienced blurred vision over the last few days. Her eye movement is uncomfortable. The doctor notes she has some difficulty with her speech as well. On examination of neurological system, the doctor notes she has upward plantar reflex.

What is the main diagnosis to consider?

- a) Multiple Sclerosis
- b) Hemiplegic migraine
- c) Raised intracranial pressure
- d) Stroke
- e) Cerebral venous thrombosis

Answers on page 25

An audit to measure >5% reduction efforts in weight in patients suffering from Osteoarthritis before their scheduled Total Joint Replacement at Darwen Health Link Surgery, Blackburn with Darwen

Akanksha Sarma & Syed Raees Mustafa Year 5 Medical Students, University of Central Lancashire

Introduction

Approximately 240 million individuals worldwide suffer from osteoarthritis, a condition resulting in the inflammation of joints¹. Within the United Kingdom (UK), 8.75 million individuals have sought treatment for osteoarthritis². In the UK, arthritis is more common in women than men, with 5 million women seeking treatment for osteoarthritis compared to 3.5 million men². A population-based study in England found that the incidence of knee osteoarthritis was the highest, followed by the hip, and lastly the hand³. Interestingly, the local average for patients suffering from hip and knee osteoarthritis (11.7% and 19.8% respectively) in the Blackburn with Darwen municipality is higher than the national average of patients across England (10.9% for hip and 6.1% for knee respectively)⁴.

Osteoarthritis is the result of damage to synovial joints from the consequent repair to structural damage within joints⁵. Joint damage via injury and excessive loading over time cause changes in subchondral bone ligaments, synovial membranes, articular cartilage, and capsules⁶. These changes result in structural damage of the joint via surface fibrillation and ulceration with the loss of cartilage - exposing the underlying bone to more stress-producing microfractures, sclerotic subchondral bone and osteophytes^{6,7}. Long-term damage to synovial joints lead to localised loss of cartilage, remodelling of bone, osteophyte formation and synovitis⁷. Multiple predisposing factors are implicated in osteoarthritis, mainly including genetics, obesity, osteoporosis, trauma, occupation, congenital problems, and other musculoskeletal diseases⁶.

Clinical features of osteoarthritis primarily include mechanical pain, joint stiffness, loss of movement and reduced function⁸. The first lines of management include education of the patient, strategies for weight loss, therapeutic exercises, simple analgesia, and psychosocial support⁷. If symptoms are persisting; referral to physiotherapy, occupational therapy, podiatry, and musculoskeletal clinics are warranted⁷. However, if individuals continue to suffer with longstanding functional limitations, severe pain and are resistant to non-surgical treatment or have atypical symptoms, referrals to an orthopaedic surgeon for joint replacement are strongly considered⁷.

The correlation between a high body mass index (BMI) and the incidence of osteoarthritis is well-established. A population-based longitudinal study identified that those with a higher baseline BMI had significantly higher incidence of radiographic knee osteoarthritis⁹. A cohort-study analysed baseline weight in 1420 men between 1948 and 1951 and followed them up for 40 years later till 1983 to 1985¹⁰. They reported that the men in the highest quintile of

weight had an increased risk of developing radiographic knee osteoarthritis than those in the lightest quintiles of weight¹⁰. However, obesity is not limited to radiological osteoarthritis, as it predicted the development of knee pain independent of radiological changes¹¹. The effect of obesity on osteoarthritis is a complex interaction of genetic, mechanical, and biological factors¹². Mechanically, there is more stress on a weight-bearing joint due to excess weight load in obese individuals¹³. This load can stress the articular cartilage causing degenerative changes, as mentioned before¹⁴.

Adipose tissue has also been pointed out in the production of increased levels of hormones and growth factors leading to articular cartilage breakdown¹⁵. An association between increased insulin-like growth factor 1 (IGF1) and osteoarthritis of hand and knee has been highlighted, however no association between IGF1 and hip arthritis was reported¹⁶. Conversely, another study found reduced IGF-1 levels in patients with symptomatic osteoarthritis¹⁷. Furthermore, adipose tissue has been shown to produce higher levels of proinflammatory cytokines and adipokines, increasing the production of cartilage-degrading enzymes and neuropeptide release, which is involved in regulating appetite and cartilage homeostasis¹⁸. Considering the conflicting reports and studies, more research is needed to discern the physiological modus operandi through which obesity impacts osteoarthritis. This is necessary to not only elucidate the mechanism through which osteoarthritis transpires, but also pave a way for producing more targeted therapeutics.

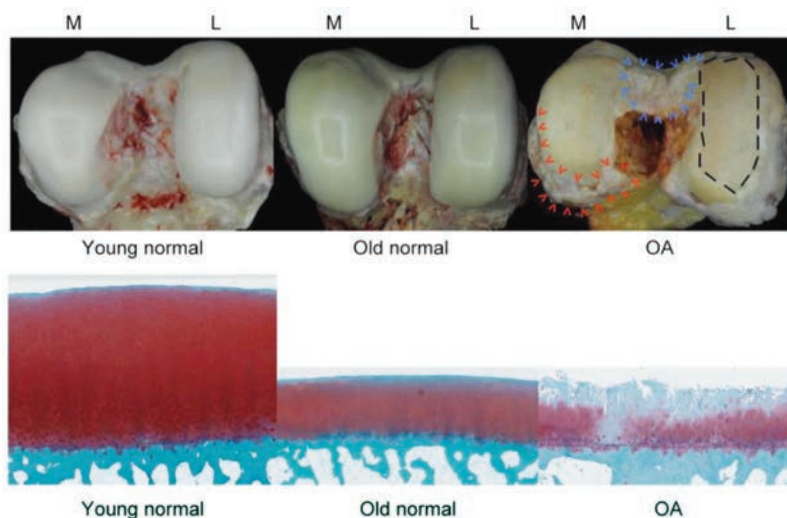


Figure 1: Images represent normal young (left, age 40), normal aging (centre, age 76) and osteoarthritic (right, age 88) tissue. The yellow discoloration on the condyles of the 'old normal' are in part due to the formation of advanced glycation end products (AGEs). The osteoarthritis sample on the other hand features large areas with complete loss of articular cartilage as represented by the dashed line on the left femoral condyle, osteophytes at the joint margins (as indicated by red arrowheads) and the intercondylar notch (pointed out by the blue arrowheads). M=medial; L=lateral. The stained sections of the condyles correspond to the macroscopic images of human condyles above¹⁹.

The above pictures highlight the impact Advanced Glycation End Products (AGEs) have on joints as we age, which increase significantly through non-enzymatic glycation of proteins²⁰. Diabetes has also been strongly linked to the production of AGEs, alongside vascular endothelial growth factors and other cytokines - indicating that poor glycaemic control, whether diabetic in origin or not, may also be an insult to the joints²¹. Studies have shown that increased levels of AGEs can deteriorate articular cartilage through promoting stiffness, elevating chondrocyte-mediated proteoglycan degradation, decreasing proteoglycan synthesis and inducing the degradation of the extracellular matrix (ECM) of cartilage²². High sugar consumption, especially fructose, has been shown to promote accumulation of AGEs in various tissues in line with peripheral insulin resistance and dysregulated lipid metabolism²³. Although AGE formation is promoted by raised glucose levels in diabetes, the accumulation of AGEs in articular cartilage with aging can be seen in non-diabetics¹⁹. This calls into question as to what other factors are potentially involved in cartilage breakdown. However, simultaneously we should also extend the link of osteoarthritis within established diabetics to insulin resistant non-diabetics - as the latter group of patients despite not being diabetic, most probably still carry the elevated glycaemic burden to yield the production of AGEs that go onto inflict articular damage, as noted above.

In a randomised control trial (RCT) lasting almost 5 years, 'exercise alone', 'exercise with diet' and 'diet alone' were applied to individuals suffering with osteoarthritis who had BMIs between 27-41.24. The study found that among obese individuals with knee osteoarthritis, losing just 10% of baseline bodyweight significantly alleviated symptoms of pain and discomfort²⁴. In addition, participants in the 'diet with exercise' and the diet-alone group had more weight loss and greater reductions in pro-inflammatory cytokines, like IL-6, than those in the exercise-alone group. Also, those in the diet group had greater reductions in knee compressive forces as compared to those in the exercise group²⁴.

Another study analysed data from 240 overweight and obese patients, most of whom were elderly suffering with painful osteoarthritis of the knee²⁵. The Cohort study assessed the efficacy of diet and exercise to bring about weight loss and subsequent improvement in symptoms amongst these patients. The authors noted that those who lost 20% or more of their body weight had significantly less inflammation than those who lost 5% or less. The former group of participants also reported less pain, markedly-improved ability to walk farther and even better mental health than those in the latter group - who had only lost 5% or less of their baseline bodyweight²⁵. Hence why the National Institute of Clinical Excellence (NICE) recommends that individuals with osteoarthritis try to lose at least 5% of their weight but emphasises on why achieving the 10% target (and beyond) would yield better outcomes. These studies also highlight that clinicians need to underscore the importance of diet to patients when counselling them to lose weight, and that exercise would be beneficial, but not essential⁷.

Multiple individuals who experience osteoarthritis often undergo joint replacement surgery/total joint arthroscopy for treatment. A meta-analysis shed light on how high-BMI patients who have undergone knee replacements are at a greater risk to develop post-operative infections and other complications, aside from having a longer operation than normal-BMI patients undergoing similar procedures²⁶. In addition, obese patients were found to exhibit less functionality of their joints, more pain post-operation, higher chances of developing deep vein thromboses (DVTs), as well as being more likely to have revisions of their knee replacements^{26,27}. Another study looking specifically at infection rates concerning knee operations in individuals

with BMI>30 versus those with a BMI<30, clearly indicated that the former group had poorer skin blood supply and an odds ratio of 4.2-6.7 of developing infections²⁸. Hence being overweight/obese can actively cause and worsen osteoarthritis, and even affect treatment via complications from joint replacements. In conclusion, weight loss in obese patients can have a multitude of positive effects, specifically improving quality of life, pain, and physical functionality in those with osteoarthritis.

Audit rationale

It is estimated that if current trends regarding obesity and being overweight continue, approximately 71% of the UK's adult population will either be overweight or obese by 2040²⁹. As more individuals experience obesity, they are bound to experience complications with osteoarthritis. It is imperative to reduce the burden of osteoarthritis to prevent disability, poor quality of life, pain, and loss of physical functionality. One of the ways to achieve that is via weight loss. According to evidence-based recommendations of NICE, any weight loss is effective but losing 10% or more of body weight is likely to achieve better therapeutic effects in those with osteoarthritis⁷. Consequently, this audit aims to examine NICE recommendations on osteoarthritis and weight management.

Aim

This audit aims to measure Darwen Health Link's adherence to NICE guidelines 226 "Osteoarthritis in over 16s: diagnosis and management" for the management of patients with osteoarthritis regarding weight loss.

Objectives

1. Investigate what percentage of patients were given diet and exercise education by GPs during their first presentation with osteoarthritis as per NG226.
2. Investigate what percentage of patients achieved a minimum of 5% weight loss prior to a total hip or knee replacement as per NG226.

Methodology

Criteria and Standards

NICE Criteria (NICE, 2022)	Standard	Guidance
1. Patients with osteoarthritis (with BMI over 30) are offered some sort of weight loss advice (at least 3-12 months before their respective surgeries) as part of conservative management.	100%	NG226 1.6.1
2. Patients with osteoarthritis (with BMI over 30) to have achieved some weight loss (by at least 5% within 3-12 months before their respective surgeries) as part of conservative management.	50%	NG226 1.3.5

Table 1: N.B. the criteria have been modified with the addition of certain data above, as seen in the parentheses above. Please see methodology for further explanation.

The audit was carried out using data derived from a total of 57 patients registered at Darwen Health Link Centre between November (2021) to November (2022). All these patients underwent hip and/or knee surgeries within this period and were evaluated against NICE Guidelines 226 (NG226) to determine whether adequate pre-op advice was given. All the relevant medical information was ascertained from the EMIS Web database or from patients directly via telephone calls.

The results were either 'pass' or 'fail' for matching (or not) the criteria, which were then used to calculate the percentage of patients fulfilling them. The following diagram outlines the search process used to derive the number of patients based upon the inclusion and exclusion criteria (Fig 2).

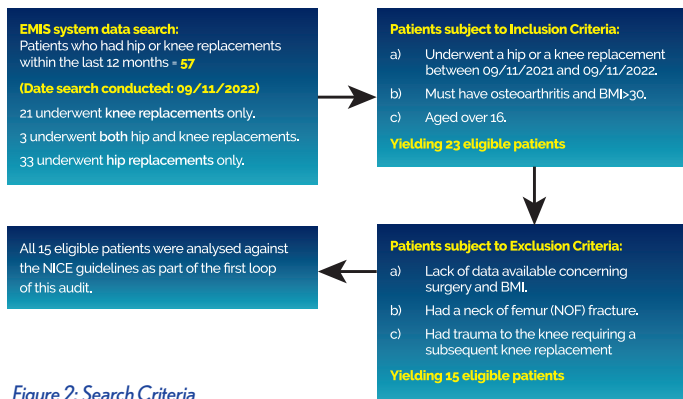


Figure 2: Search Criteria

Qualitative and quantitative data was ascertained by conducting individual searches through patient notes on the Egton Medical Information System (EMIS) database. Qualitative data was regarding the assessment of all patients undergoing hip/knee replacements, whose BMI was more than 30, to check if guidance to lose weight had been offered or not. 'Diet Health Education' is the often-used EMIS system code to reflect that, meaning if this was present in the consultation notes, a 'pass' would be granted for the first criterion from NG226. For the second criterion to be fulfilled, the very same group of patients were required to have lost at least 5% of their weight within 3-12 months prior to their surgery. Despite NICE guidance (2022) stipulating a period of 3 months to afford for 5-10% weight loss (ideally 10%), the lower boundary of weight loss requirement and greater amount of time was afforded to the practise to achieve the goal. As such, there was no specific BMI threshold that the guidelines ordained which the patients should be below to be eligible for surgery. However, BMI of 30 was used by the authors of this audit as a target to identify patients with osteoarthritis, who would benefit the most from weight loss.

NICE Criteria (NICE, 2022)	Standard	Practice Compliance	Guidance
1. Patients with osteoarthritis (with BMI over 30) are offered some sort of weight loss advice (at least 3-12 months before their respective surgeries) as part of conservative management.	100%	100%	NG226 1.6.1
2. Patients with osteoarthritis (with BMI over 30) to have achieved some weight loss (by at least 5% within 3-12 months before their respective surgeries) as part of conservative management.	50%	20%	NG226 1.3.5

Table 2: Results based on NICE guidelines against their appropriate standards.

8 patients underwent a knee replacement and 7 had hip replacements, respectively. All (100%) of the patients were given advice concerning weight management during the time leading up to the operation. However, only 20% were able to achieve the minimum of 5% weight loss from their baseline. Average weight loss of 5.2% was achieved by all the patients who did lose weight; however, this accounts for patients who lost weight but not 5% or more circa their respective surgeries. Across the 15 patients, a mean average of 3% addition in weight took place from their baseline, up till their surgery.



Patient Number	Hip or Knee or both	Weight at 3-12 mths circa surgery (kg)	Weight at surgery (kg)	BMI at time of surgery (kg)	Diet health education given by the GP per NG226 (Pass or Fail)	Difference in weight (%gain +, or loss -)	Min 5% weight loss achieved by the GP per NG226 (Pass or Fail)
1	Knee	67	75	31.2	Pass	+11%	Fail
2	Knee	113	113	36.1	Pass	0	Fail
3	Hip	105	95	32.5	Pass	-9.5%	Pass
4	Hip	86	89	31.9	Pass	+4.2%	Fail
5	Knee	105	104.5	32.2	Pass	-0.50%	Fail
6	Hip	91	89	30.1	Pass	-2.2%	Fail
7	Knee	85	89	31.5	Pass	+4.7%	Fail
8	Knee	80	81	31.6	Pass	+1.25%	Fail
9	Hip	116	117	38.2	Pass	+0.9%	Fail
10	Knee	118	110	33.4	Pass	-6.8%	Pass
11	Hip	87	87	31	Pass	0	Fail
12	Knee	96	96	39	Pass	0	Fail
13	Hip	105	97	31	Pass	-8%	Pass
14	Hip	93.7	99.5	36.2	Pass	+6.2%	Fail
15	Knee	85	122	49.5	Pass	+43.5%	Fail
Results					100% Pass Rate	20% Pass Rate	

Table 3: Complete breakdown of all the 15 patients' weight management before and at the time of surgery, their respective BMIs and whether they gained or lost weight (in percentage), as well as an assessment of the provision of weight loss advice from the GPs.

Discussion

Strengths, Weaknesses and Evidence

100% of clinicians document diet and exercise advice given to patients at or around the time of referral to orthopaedics. It reflects the clinicians' attempt to treat patients holistically in addition to providing symptomatic relief. It also shows that they take responsibility for patients' weight management instead of delegating it to the orthopaedic surgeons. GPs realise that adequate weight loss is not always possible, and that it may become a frustrating ultimatum of some sort for referrals - if guidelines are followed to the word. Therefore, considering the desperate situation of patients, GPs use the long waiting times before seeing an orthopaedic surgeon as an opportunity for patients to manage their weight, as the clinic appointment or even the elective surgery (if established) acts as an incentive. Unfortunately, despite the diet and exercise education being given at a 100% success rate, only 20% of patients achieved the required weight loss. This may be due to a multitude of reasons as explained.

All patient notes had the statement 'diet and exercise education' to represent the documentation of weight loss advice. However, no clinician elaborated on the exact contents of the discussion, making it difficult to judge the quality of education provided. It may be concluded that due to poor quality of diet and exercise education, patients may not have understood the significance of losing weight and thus, were unsuccessful. Upon speaking to a patient who did not achieve weight loss, she mentioned that she was unable to recall any education about it, conveying that the education may not have been properly emphasized. It is also important to acknowledge that due to time constraints of a consultation, it is difficult to cover medical management, psychological interventions, and weight loss management in a single 10-minute appointment.

A qualitative analysis found that most weight loss advice given by GPs is often superficial, following a general "eat less do more" approach³⁰. This oversimplistic understanding of weight management is largely promoted by the NHS and mainstream medical establishments; highlighting the point of poor-quality education and perhaps the

encouragement of an all too familiar approach that has consistently failed to deliver. One of the senior GPs at the practice acknowledged the need to be flexible in utilising different approaches for weight loss and in fact encouraged in applying a more dynamic and open-minded methodology. Therefore, considering the clinical experience of clinicians and the best available evidence, the authors decided to intervene with a weight loss pack promoting the ketogenic diet.

The literature supports ketogenic diets as being effective in promoting weight loss and improving overall metabolic health³¹. In fact, a combination of 67 RCTs published from 2002 to 2020 comparing ketogenic diets to 'low fat' (LF) diets (total n=5618) found that 58 out of the 67 studies showed ketogenic diets were superior to LF diets in promoting weight loss, whilst only 7 studies showed the LF ones to be better - with 2 RCTs being equal³². Furthermore, 36 out of the total RCTs reported the ketogenic diets to be significantly ($p<0.05$) better in aiding weight loss, yet none of the LF ones were shown to be significantly better than the ketogenic diets³².

Importantly, when applied in the context of osteoarthritis, ketogenic diets have shown to be useful in ameliorating inflammation and improving clinical performance. In a study comparing the ketogenic diet against a standard diet in rats induced with osteoarthritis, the former was significantly better in reducing damage to articular cartilage and subchondral bone³³. Furthermore, a 12-week long study compared the ketogenic diet, low-fat diet and a control diet in adults aged 65-75 with knee osteoarthritis³⁴. The ketogenic diet was reported to significantly reduce oxidative stress and the adipokine leptin compared with the other two regimes, and alleviate functional pain³⁴. Another prospective study followed type-2 diabetics with osteoarthritis receiving the ketogenic diet (n=173) and 'usual care' (n=69)¹⁴. After 2 years of follow-up, participants receiving the ketogenic diet had significantly ($p<0.05$) better Knee injury and Osteoarthritis Outcome Score (KOOS), with patients reporting marked improvement in knee function¹⁴. The study acknowledged that the improvement in KOOS was most likely explained by the reduced central adiposity and inflammation, explaining the diet's success¹⁴. This study highlights that the ketogenic diet is effective and practical over long term, and that too in patients with other more common comorbidities like diabetes, obesity, and metabolic syndrome. Such data also raises an important question about the efficacy of ketogenic diets in patients who may not be obese but are exhibiting signs of insulin resistance or poor metabolic health. I.e., if studies have been shown to improve pain and functionality in osteoarthritic patients who are obese through not only the bio-mechanical pathway (pure weight loss), but also through the biochemical approach (via reducing the inflammation), then an argument can be put for advocating this diet for patients of osteoarthritis who may not be obese. However, more research is needed to explore the impact of ketogenic diets in that subgroup of patients.

Only 20% of patients achieved weight loss of 5% or more, which was lower than the designated 50% standard. It is difficult to comment on the performance due to the lack of data available on the percentage of obese patients with osteoarthritis, losing adequate weight before their respective surgeries. Hence the application of a modest and neutral standard of 50% for that criterion. This may call into question the reproducibility of the project, perhaps more so if to be conducted at other institutes. Yet simultaneously this can be advantageous for the audit as it can attempt to contribute this performance as some form of baseline data for literature concerning patients with osteoarthritis and a high BMI. Additionally, it is important to note that from all 15 patients analysed, two did achieve significant weight loss, however their BMI remained >30 and were unable to bring it down within the 12 months leading up to their respective surgeries. However, they had

lost a significant amount of weight well before 12 months of their surgeries, as their EMIS records indicated. This alludes to a potential weakness of the audit as it failed to acknowledge weight loss before the 12-month designated period leading up to the surgery.

In addition, the first part of this audit only focused on patients scheduled to receive a surgical intervention for osteoarthritis. This was done as those who were recommended for surgeries, were the individuals who were suffering from the most severe osteoarthritis, hence warranting joint replacements. Therefore, it would be reasonable to posit that GPs must have utilised the more aggressive weight loss measures as part of conservative management. However, upon discussion with one of the senior GPs, despite the reasonability of the theory in applying the more aggressive conservative treatment protocols in such severe cases; both the GPs and patients eventually come to a standstill in attaining anymore clinical improvement through conservative protocols. As a result, the GPs become compelled to refer such patients with debilitating osteoarthritis to the orthopaedic surgeons, despite not having achieved adequate weight loss. This makes the audit unique in its nature as it aims to address the problems of a potentially surgical patient within a primary care setting.

No specific weight/BMI is mentioned by NICE guidance as the 'limit' beyond which surgery is non-viable. Regarding the selection of BMI >30 as part of the inclusion criteria, this was derived from a discussion with the senior GP. The cut-off weights/BMIs vary largely depending upon the clinician, institutional guidelines, and the clinical status of the patient. However, the more 'obese' a patient is considered, the more concerned the surgeon becomes about the peri and post-op complications as alluded to in the introduction. Hence why BMI target representing 'obesity' (i.e., over 30) was designated to adequately represent patients with osteoarthritis who would have been struggling with their weight management.

By motivating patients to lose even 5% of their baseline weight, patients can achieve vast symptomatic and structural improvement in their symptoms and consequently avoid surgery^{35,36}. Benefits of weight loss are evident, but it is important to shed light on why it improved symptoms of osteoarthritis. Not only will it then give a better understanding of osteoarthritis as a clinical disease, but also allow a more targeted approach to both patients and doctors. An RCT showed that even one pound of weight loss was associated with a four-fold reduction in mechanical force on the knee joint³⁷. In addition, a meta-analysis highlighted that weight loss correlated with reduction in levels of pro-inflammatory markers such as c-reactive protein, interleukin 6 and tissue necrotising factor³⁸. Inflammation through these cytokines has been implicated strongly in catalysing the process of osteoarthritis¹⁵, which makes weight loss a reasonable treatment protocol. Therefore, our public poster (Appendix 1) was designed to convey that osteoarthritis transpires through physical damage to the cartilage through excess load (weight) and via the inflammatory cytokines, in order that the public understands from both ways the benefits of losing weight.

Recommendations

- 1) Targeted weight loss poster (Appendix 1) to be attached onto weighing scale at reception of practice to encourage opportunistic weight measurement by patients. This measurement will be added to patient EMIS records which will allow for accurate assessment of BMI and consequent weight loss. Additionally, it encourages patients to understand their pain from osteoarthritis from a biomechanical and biochemical pathway, as they are prompted to book an appointment with their GPs.
- 2) Detailed weight loss advice pack (Appendix 2) to be given to

patients in copy, online or sent via text to all patients with a BMI>30 who are awaiting joint replacement surgery. This will aim to address myths about diet and exercise, give practical and specific advice about diet swaps, provide space for weight monitoring, and lastly address the benefits of weight loss for osteoarthritis.

3) GPs to offer referral to local 12-week weight loss program to patients to all patients with a BMI>30 who are awaiting joint replacement surgery, and any new patients who present for osteoarthritis with a BMI of >30.

Barriers

These recommendations were implemented in the second week of December 2022. A reaudit of weight loss in patients will be conducted in March 2023, after 3 months have elapsed to assess the efficacy of the intervention.

Despite the guidance from NICE, each doctor has their own style of assessment and treatment which aims to apply a biopsychosocial approach. Therefore, one of the potential barriers to the project could be the differences between the clinician's thought process and the intervention itself. Also, some may not be aware of the project in place and thus not provide the weight loss pack. Moreover, weight loss is complex and needs continuous support from various stakeholders. Therefore, if supervision is lacking, patients may not be complying to the recommendations adequately, making the results potentially unreliable. Patients may also find this a tough regime to abide by, as it does require them to lose foods that they would have otherwise been consuming daily. The weight loss pack does acknowledge this and offers alternative healthier recipes (see appendix 2); however, it can dissuade the patients from following the regime properly. In addition, patients may have been given some other advice concerning weight loss and so may be confused when applying this intervention. Especially considering the mainstream guidance of avoiding fats, which the intervention is in complete opposition to. Lastly, the designated period of intervention implementation is 3 months - which can be argued as somewhat insufficient especially when the first audit loop is allotting a 3-12-month period of weight loss achievement circa surgery. Perhaps a longer timeframe is needed to establish patients on the diet properly and have the clinicians become accustomed to it.

Conclusion

Obesity is projected to affect a large proportion of the population, with those suffering from osteoarthritis suffering further due to their obesity. Hence, it is imperative to tackle obesity at grassroots level before it becomes a more significant problem. Managing obesity in osteoarthritic patients can guarantee better surgical outcomes, better functionality, less pain, and perhaps even mitigate the need for surgery. Considering this, the audit showed that Darwen Health Links adherence to the NICE guidelines 226 "Osteoarthritis in over 16s: diagnosis and management" is suboptimal for effective weight loss.

The main attributable causes are the complex nature of weight loss, limited time for GP appointments, lack of structure in giving advice, poor documentation, and patients being refractory to treatment. To overcome the problems, the authors have implemented a targeted poster, a weight loss pack recommending the ketogenic diet and a referral to a local weight loss programme.

The impact of obesity on both patients and healthcare systems are debilitating. By implementing measures to curb obesity early in the patient journey at primary care, we hope to prevent the most challenging consequences of obesity on osteoarthritis, namely pain, disability and perhaps surgery.

References:

- Allen KD, Thoma LM, Golightly YM. Epidemiology of osteoarthritis. *Osteoarthritis and Cartilage*. 2022 Feb 1;30(2):184–95.
- Versus arthritis [Internet]. [cited 2023Feb18]. Available from: <https://www.versusarthritis.org/media/2115/osteoarthritis-in-general-practice.pdf>
- Yu D, Peat G, Bedson J, Jordan KP. Annual consultation incidence of osteoarthritis estimated from population-based health care data in England. *Rheumatology (Oxford)*. 2015 Nov;54(11):2051–60.
- The musculoskeletal (MSK) calculator is a prevalence ... - versus arthritis [Internet]. [cited 2023Feb18]. Available from: https://www.versusarthritis.org/media/13938/la_blackburn_with_darwen.pdf
- O'Neill TW, Felson DT. Mechanisms of Osteoarthritis (OA) Pain. *Curr Osteoporos Rep*. 2018 Oct;16(5):611–6.
- ClinicalKey Student: Kumar and Clark's Clinical Medicine [Internet]. [cited 2022 Dec 7]. Available from: [https://clinicalkeymeded.elsevier.com/reader/books/9780702078705/epubcfi/b/246\[%3Bvnd.vst.idref%3D8978070207868200018X_sec-s0740\]/4\[sec-s0740\]](https://clinicalkeymeded.elsevier.com/reader/books/9780702078705/epubcfi/b/246[%3Bvnd.vst.idref%3D8978070207868200018X_sec-s0740]/4[sec-s0740])
- Overview | Osteoarthritis in over 16s: diagnosis and management | Guidance | NICE [Internet]. [cited 2022 Dec 28]. Available from: <https://www.nice.org.uk/guidance/ng226>
- Hunter DJ, McDougall JJ, Keefe FJ. The symptoms of osteoarthritis and the genesis of pain. *Rheum Dis Clin North Am*. 2008 Aug;34(3):623–43.
- Cooper C, Snow S, McAlindon TE, Kellingray S, Stuart B, Coggon D, et al. Risk factors for the incidence and progression of radiographic knee osteoarthritis. *Arthritis Rheum*. 2000 May;43(5):995–1000.
- Felson DT, Zhang Y, Anthony JM, Naimark A, Anderson JJ. Weight Loss Reduces the Risk for Symptomatic Knee Osteoarthritis in Women. *Ann Intern Med*. 1992 Apr;116(7):535–9.
- Goulston LM, Kiran A, Javaid MK, Soni A, White KM, Hart DJ, et al. Does obesity predict knee pain over fourteen years in women, independently of radiographic changes? *Arthritis Care Res (Hoboken)*. 2011 Oct;63(10)
- Li H, George DM, Jaarsma RL, Mao X. Metabolic syndrome and components exacerbate osteoarthritis symptoms of pain, depression and reduced knee function. *Ann Transl Med*. 2016 Apr;4(7):133.
- King LK, March L, Anandacomarasamy A. Obesity & osteoarthritis. *Indian J Med Res*. 2013 Aug;138(2):185–93.
- Lyman KS, Athinayanan SJ, McKenzie AL, Pearson CL, Adams RN, Hallberg SJ, et al. Continuous care intervention with carbohydrate restriction improves physical function of the knees among patients with type 2 diabetes: a non-randomized study. *BMC Musculoskelet Disord*. 2022 Mar 29;23:297.
- Chow YY, Chin KY. The Role of Inflammation in the Pathogenesis of Osteoarthritis. *Mediators Inflamm*. 2020;2020:8293921.
- Lloyd ME, Hart DJ, Nandra D, McAlindon TE, Wheeler M, Doyle DV, et al. Relation between insulin-like growth factor-1 concentrations, osteoarthritis, bone density, and fractures in the general population: the Chingford study. *Annals of the Rheumatic Diseases*. 1996 Dec 1;55(12):870–4.
- Denko CW, Boja B, Moskowitz RW. Growth promoting peptides in osteoarthritis: insulin, insulin-like growth factor-1, growth hormone. *J Rheumatol*. 1990 Sep;17(9):1217–21.
- Iannone F, Lapadula G. Obesity and inflammation—targets for OA therapy. *Curr Drug Targets*. 2010 May;11(5):586–98.
- Lotz M, Loeser RF. Effects of aging on articular cartilage homeostasis. *Bone*. 2012 Aug;51(2):241–8.
- Verzijl N, Bank RA, TeKoppele JM, DeGroot J. AGEing and osteoarthritis: a different perspective. *Curr Opin Rheumatol*. 2003 Sep;15(5):616–22.
- Chen YJ, Chan DC, Chiang CK, Wang CC, Yang TH, Lan KC, et al. Advanced glycation end-products induced VEGF production and inflammatory responses in human synoviocytes via RAGE-NF-κB pathway activation. *J Orthop Res*. 2016 May;34(5):791–800.
- Steenvoorden MMC, Huizinga TWJ, Verzijl N, Bank RA, Ronda HK, Luning HAF, et al. Activation of receptor for advanced glycation end products in osteoarthritis leads to increased stimulation of chondrocytes and synoviocytes. *Arthritis Rheum*. 2006 Jan;54(1):253–63.
- Aragno M, Mastrocola R. Dietary Sugars and Endogenous Formation of Advanced Glycation Endproducts: Emerging Mechanisms of Disease. *Nutrients*. 2017 Apr 14;9(4):385.
- Sp M, SI M, C L, Gd M, Bj N, P D, et al. Effects of intensive diet and exercise on knee joint loads, inflammation, and clinical outcomes among overweight and obese adults with knee osteoarthritis: the IDEA randomized clinical trial. *JAMA [Internet]*. 2013 Sep 25 [cited 2023 Feb 18];310(12). Available from: <https://pubmed.ncbi.nlm.nih.gov/24065013>
- Sp M, Ae R, Dp B, SI M, Gd M, Bj N, et al. Intentional Weight Loss in Overweight and Obese Patients With Knee Osteoarthritis: Is More Better? *Arthritis care & research [Internet]*. 2018 Nov [cited 2023 Feb 18];70(11). Available from: <https://pubmed.ncbi.nlm.nih.gov/29911741/>
- H S, L Z, F L, J D. Comparison between Closing-Wedge and Opening-Wedge High Tibial Osteotomy in Patients with Medial Knee Osteoarthritis: A Systematic Review and Meta-analysis. *The journal of knee surgery [Internet]*. 2017 Feb [cited 2023 Feb 18];30(2). Available from: <https://pubmed.ncbi.nlm.nih.gov/27218480/>
- Kerkhoffs GMMJ, Servien E, Dunn W, Dahm D, Bramer JAM, Haverkamp D. The Influence of Obesity on the Complication Rate and Outcome of Total Knee Arthroplasty. *J Bone Joint Surg Am*. 2012 Oct 17;94(20):1839–44.
- R J, Ss J, Rd S, Nj S, Sd M, Rm M, et al. Reducing surgical site infection in arthroplasty of the lower limb: A multi-disciplinary approach. *Bone & joint research [Internet]*. 2013 Mar 1 [cited 2023 Feb 18];2(3). Available from: <https://pubmed.ncbi.nlm.nih.gov/23610703/>
- Cancer research UK [Internet]. [cited 2023Feb18]. Available from: https://www.cancerresearchuk.org/sites/default/files/cancer-stats/adult_overweight_and_obesity_prevalence_projections_18-05/adult_overweight_and_obesity_prevalence_projections_18-05.pdf
- Tremblett M, Poon AVX, Aveyard P, Albury C. What advice do general practitioners give to people living with obesity to lose weight? A qualitative content analysis of recorded interactions. *Family Practice*. 2022 Dec 13;cmac137.
- Rafiuallah M, Musambil M, David SK. Effect of a very low-carbohydrate ketogenic diet vs recommended diets in patients with type 2 diabetes: a meta-analysis. *Nutr Rev*. 2022 Feb 10;80(3):488–502.
- A summary table of randomised controlled trials comparing low-carb ... [Internet]. [cited 2023Feb18]. Available from: <https://phcuk.org/wp-content/uploads/2021/02/Summary-Table-Of-Randomised-Controlled-Trials-Comparing-Low-Carb-To-Low-Fat-Diets-09.02.2021.pdf>
- Kong G, Wang J, Li R, Huang Z, Wang L. Ketogenic diet ameliorates inflammation by inhibiting the NLRP3 inflammasome in osteoarthritis. *Arthritis Research & Therapy*. 2022 May 18;24(1):113.
- Strath LJ, Jones CD, Philip George A, Lukens SL, Morrison SA, Soleymani T, et al. The Effect of Low-Carbohydrate and Low-Fat Diets on Pain in Individuals with Knee Osteoarthritis. *Pain Med*. 2020 Jan 1;21(1):150–60.
- Conaghan PG, Felson D, Gold G, Lohmander S, Totterman S, Altman R. MRI and non-cartilaginous structures in knee osteoarthritis. *Osteoarthritis and Cartilage*. 2006 Jan 1;14:87–94.
- Gudbergson H, Boesen M, Lohmander LS, Christensen R, Henriksen M, Bartels EM, et al. Weight loss is effective for symptomatic relief in obese subjects with knee osteoarthritis independently of joint damage severity assessed by high-field MRI and radiography. *Osteoarthritis and Cartilage*. 2012 Jun 1;20(6):495–502.
- Messier SP, Guekuntst DJ, Davis C, DeVita P. Weight loss reduces knee-joint loads in overweight and obese older adults with knee osteoarthritis. *Arthritis Rheum*. 2005 Jul;52(7):2026–32.
- Forsythe LK, Wallace JMW, Livingstone MBE. Obesity and inflammation: the effects of weight loss. *Nutrition Research Reviews*. 2008 Dec;21(2):117–33.

N.B. Appendix 1 and Appendix 2 are available via e-mail upon application to the Editor of BIDA Journal or the authors. Unfortunately, owing to limitations of available space, they could not be reproduced with this article.

Psychological support as an effective weight loss intervention?

Grace Foy

University of Bristol Medical Student

Introduction

The current epidemic of obesity threatens to endanger global health and diminish healthcare resources.

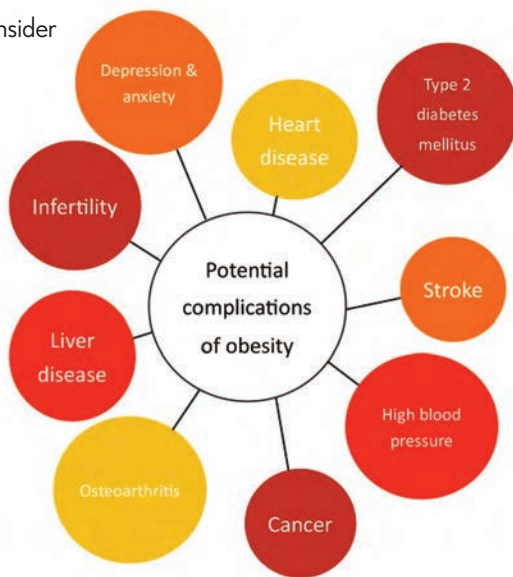
Those living with obesity have greater risk of psychological dysfunction¹. Behaviour-based weight loss interventions have been shown to prove effective for those who remain active in these programs².

Objectives

In this study, we determine the impact of psychological interventions with the intention of weight loss for those living with obesity, to guide weight loss services and clinicians in their practice.

In addition, we consider its role in weight loss for those with anxiety/depression.

Figure 1: The potential complications associated with obesity³.



Methods

- Secondary analysis of data collected over a 10-year period identified 1407 patients living with obesity and part of the Tier 3 weight loss service.
- BMI was used as the primary indicator of weight loss.
- BMI measurements at referral and discharge of the 860 eligible patients were used to determine mean BMI percentage change.
- Weight-loss was defined as any negative BMI-percentage-change.
- Available interventions included psychological support, diet/exercise, endoscopic intragastric balloon, and pharmacology.

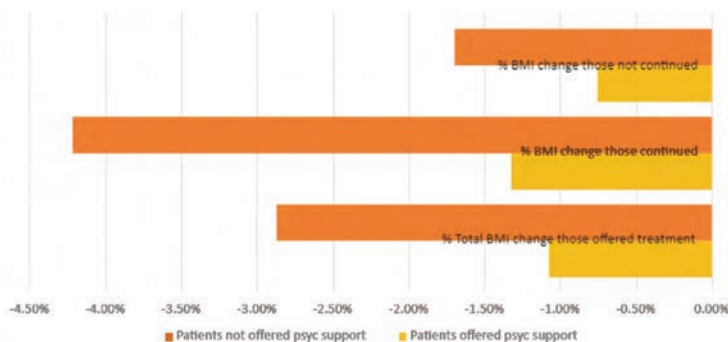


Figure 2: Mean BMI % change for patients offered psychological support.

Intervention outcomes in anxiety/depression

Those with extra psychological disorders face poorer weight loss outcomes¹.

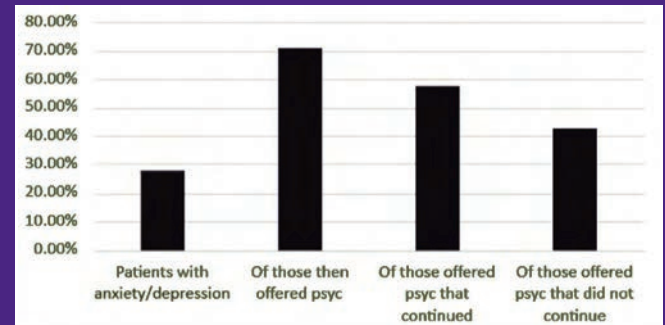


Figure 3: Patients with anxiety/depression offered psychological support.

Psychological support did not show as great an impact on patients with psychological disorders compared to those without.

This indicates the need of a more tailored approach when developing psychological support in weight loss for those with anxiety/depression.

Results

- 63% of patients were offered psychological support → Mean BMI % change = -1.07% (SD 8.27)
- 34% of these engaged with the support offered → Mean BMI % change = -1.32%
- Patients who did not engage had a mean BMI % change = -0.75%

Our results are comparably similar to the findings of Shaw et al (2005), weight loss was found to be enhanced when psychological support was added to diet / exercise⁴.

Developing and maintaining healthy eating behaviours in these sessions has been observed to promote weight loss outcomes.

Greater emphasis on improving wellbeing of patients could enhance physical health outcomes⁵.

Conclusions

It cannot be denied that those assessed as needing it, achieve better weight loss outcomes when given psychological support.

The ever-increasing prevalence of obesity and its high mortality highlights the need for research, to provide the public and weight loss services with the most effective weight loss strategies.

Acknowledgements & References

Thank you to Mr Dmitri Pourmaras and Alexis Sudlow. Many thanks to Adrika Iyer, Rohit Philip Panackal. Sarjun Gill, Harry Rogers and Dylan Rudolf in their help collecting the data.

1. Bray, G. A. (2004). Medical Consequences of Obesity. *The Journal of Clinical Endocrinology & Metabolism*, 89(6), 2583-2589. <https://doi.org/10.1210/jc.2004-0535>
2. Finley, C.E. et al. (2007). Retention rates and weight loss in a commercial weight loss program. *International Journal of Obesity*, 31(2), 292-298.
3. NHS, (2019) Obesity. Available at Obesity - NHS (www.nhs.uk) (Accessed 06.10.22)
4. Shaw, K. A., O'Rourke, P., del Mar, C., & Kenardy, J. (2005). Psychological interventions for overweight or obesity. In K. A. Shaw (Ed.), *Cochrane Database of Systematic Reviews*. John Wiley & Sons, Ltd. <https://doi.org/10.1002/14651858.CD003818.pub2>
5. Moffat, H. et al. (2019). Evaluation of Weigh Forward: A group intervention delivered by dietitians and psychologists within a National Health Service specialist weight management service. *Clinical Obesity*, 9(2), e12291. <https://doi.org/10.1111/cob.12291>

BIDA Student Wing National Conference 2023

4 February 2023 - A brief report

Paarth Kishan Gupta Conference Chair, BIDA Student Wing, 3rd Year MBBS, UCLAN



“Above and Beyond Medicine”

The BIDA Student Wing hosted its Annual National Conference on 4th February 2023. As the Conference Chair, I am pleased to inform you that the conference received commendable feedback from the delegates, appreciating the structure and the smooth running of the conference, quality of presentations by the speakers and great engagement opportunities.

The theme of the conference was 'Above and Beyond Medicine'. We aimed to provide medical students with international background an opportunity to engage with some highly talented and experienced doctors. The conference was honoured by the attendance and participation of many distinguished members of the NHS and the BMA Council. The attendees gained some valuable insight into a wide variety of topics discussed by the speakers, including several medical and surgical specialities, medical leadership, medical education and research.

The conference was attended by nearly 100 delegates, with 40 abstract and poster submissions by medical students from all over the world. Three students with the most innovative abstracts were given the opportunity to present their work at the conference. We were proud to have the General Medical Council (GMC) as our primary sponsor whose representative gave a detailed presentation regarding the roles of the GMC and seeking guidance and support during medical training.

The first keynote speaker was **Professor Iqbal Singh CBE**, who serves as Chair of the Centre of Excellence in Safety for Older People (CESOP). Professor Singh gave an insightful talk about the principles of professionalism in medicine. He emphasised the importance of maintaining professionalism, along with seeking adequate support and maintaining well-being during difficult times in one's career.



The second keynote speaker **Dr Chaand Nagpaul CBE** who currently chairs the BMA National Forum of Racial and Ethnic Minority. Dr Nagpaul spoke passionately about the experience of ethnic minority doctors and International Medical Graduates in the UK. He highlighted the inequalities faced by ethnic minority doctors in the NHS and the impact of racism on wellbeing and patient care and suggested essential changes to make the NHS an inclusive workforce.

The third keynote speaker **Dr Emma Runwicks**, the Deputy Chair of the BMA Council, highlighted the importance of involvement in trade unionism for making lasting changes at medical school. She explained the role of the BMA, and the various ways in which the BMA can support and guide medical students.

The fourth keynote speaker **Dr Chris Agbo** is President of Medical Association of Nigerians across Great Britain (MANSAG). Dr Agbo discussed the option of Medical Education as a career choice. He explained the pathway and the skills required for this career option, while suggesting ways to improve the portfolio.

Dr Asha Thomson MBE spoke enthusiastically about the career opportunities in maxillo-facial surgery. **Prof. Kaveh Asanati (FFOM)** and **Dr Lara Shemtob** highlighted the various aspects of a career in occupational medicine. **Dr Alireza Sherafat** spoke passionately about the importance of developing research skills as a medical student. **Dr Momna Raja** gave an intuitive talk about the 'life of a foundation year doctor' and **Dr Saloni Singh** spoke about fulfilling the portfolio requirements for entry into core surgical training.



I would like to extend my heartfelt gratitude to my co-chair **Renee Punia** and the members of the BIDA Student Wing who enthusiastically contributed and collaborated to plan and organise a successful conference. I would like to specially thank **Dr Sai Ram Pillarisetti** and **Dr Alireza Sherafat** for their invaluable support and guidance particularly during the planning of the conference.

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Congratulations!



Celebrating 50 years in patient care. **Dr. Alka Sepaha Trivedi, G.P.**

Congratulations to Dr Trivedi, who has completed the milestone of working as a medical doctor dedicating her life and skills to patients' care for 50 years now; 45 years in the NHS and 5 years before that in Indore, India. For the last five years, she has been working part-time in SSP Health. The staff of surgery and Founder of SSP, Dr. Shikha Pitalia recently arranged a celebration with media coverage.



She has been a life member of BIDA for 40 years and has made tremendous contributions to the organisation. She has held various senior office bearers' posts both at the local division at Wigan and at the National level. She is currently the Vice-Chairman of BIDA. She has been honoured as "Fellow of BIDA" earlier.

She was the President of Hindley Rotary Club, being the first and only woman president in 50 years in Hindley. She teaches yoga as qualified Yoga teacher from the International Manchester University of Yoga at different places, locally and internationally, including NHS workers for SSP Health. She was an Honorary Yoga lecturer in the University of the third Age (U3A).

During this time she has also been involved in social work, community service and many charities in the local hospice, Leigh Infirmary and Wigan charities and in India. Her work was recognised by the Madhya Pradesh government in India and was honoured with the Key of Indore and honorary citizenship of Indore, Woman of substance and Ambassador of Indore to UK.

She continues her passion for dancing, singing, swimming and reading, and spirituality. BIDA wishes her warmly and thanks her profusely for her friendship and support.



Dr Noha El Sakka OBE

Congratulations to Dr Noha El Sakka has been awarded an Officer of the Most Excellent Order of the British Empire (OBE) in the Queen's Birthday Honours list in June 2022. The award was for her services to the NHS and the COVID-19 response.

Dr Noha El Sakka is a consultant of Medical Microbiology and Virology in Aberdeen, UK. She is the service clinical director. She is the Specialist Advisor to Scotland Chief Medical Officer (CMO) and the Scottish Government (SG). During the pandemic, she was tasked with a leading role as part of the local and national COVID-19 response. She was involved in advising the SG and CMO as a subject matter expert on the clinical, diagnostic, testing, vaccination and quality aspects of the COVID-19 response including development of guidelines, clinical governance frameworks and technical development. She led the development of the COVID-19 testing in the North Regional Hub responsible for turning around thousands of samples daily, seven days a week.

Locally, she led on the complex diagnostics and infection control aspects of the COVID-19 response, including introduction and upscaling of testing, training and incident and outbreak management, as well as developing infection control guidance, clinical pathways and policies.

Did You Know?

Artificial intelligence could help NHS surgeons perform 300 more transplant operations every year, according to British researchers who have designed a new tool to boost the quality of donor organs.

This technology, known as OrQA – Organ Quality Assessment. It could result in 200 more patients having kidney transplants and 100 more receiving liver transplants every year in the UK. a pioneering method that uses AI to effectively score potential organs by comparing them to images of tens of thousands of other organs used in transplant operations.

Medical Quiz Answers

1 Correct answer is E) Urinary 5-HIAA.

The symptoms are consistent with carcinoid syndrome and the investigation of choice in primary care setting would be Urinary 5-HIAA¹.

2 Correct answer is C) Abdominal X-ray.

This patient has presented with severe flare-up of Ulcerative Colitis and may have developed toxic megacolon. Hence, an Abdominal X-ray should be requested immediately².

3 Correct answer is E) Systemic Lupus Erythematosus.

She has characteristic symptoms of SLE such as butterfly rash, joint pain and proteinuria³.

4 Correct answer is C) High dose Aciclovir, Oral Steroids and Eye protection.

The diagnosis to consider here is Ramsay Hunt syndrome. Oral steroids and Aciclovir are used in the management of this condition.

Eye protection is also important⁴.

5 Correct answer is A) Multiple Sclerosis.

Optic neuritis and upper motor neurone symptoms (upward plantar reflex; Babinski Sign) are seen in Multiple Sclerosis⁵.

References:

- 1) Rubin de Celis Ferrari, Anezka C et al. "Carcinoid syndrome: update on the pathophysiology and treatment." *Clinics (Sao Paulo, Brazil)* vol. 73,suppl 1 e490s. 20 Aug. 2018. doi:10.6061/clinics/2018/e490s
- 2) SILVERBERG, D, and A G ROGERS. "TOXIC MEGACOLON IN ULCERATIVE COLITIS." *Canadian Medical Association journal* vol. 90,5 (1964): 357-63.
- 3) Kuhn, Annegret et al. "The Diagnosis and Treatment of Systemic Lupus Erythematosus." *Deutsches Arzteblatt international* vol. 112,25 (2015): 423-32. doi:10.3238/arztebl.2015.0423
- 4) Ostwal, Shrenik et al. "Management of ramsay hunt syndrome in an acute palliative care setting." *Indian journal of palliative care* vol. 21,1 (2015): 79-81. doi:10.4103/0973-1075.150195
- 5) Phuljhele, Swati et al. "Approach to optic neuritis: An update." *Indian journal of ophthalmology* vol. 69,9 (2021): 2266-2276. doi:10.4103/ijo.IJO_3415_20

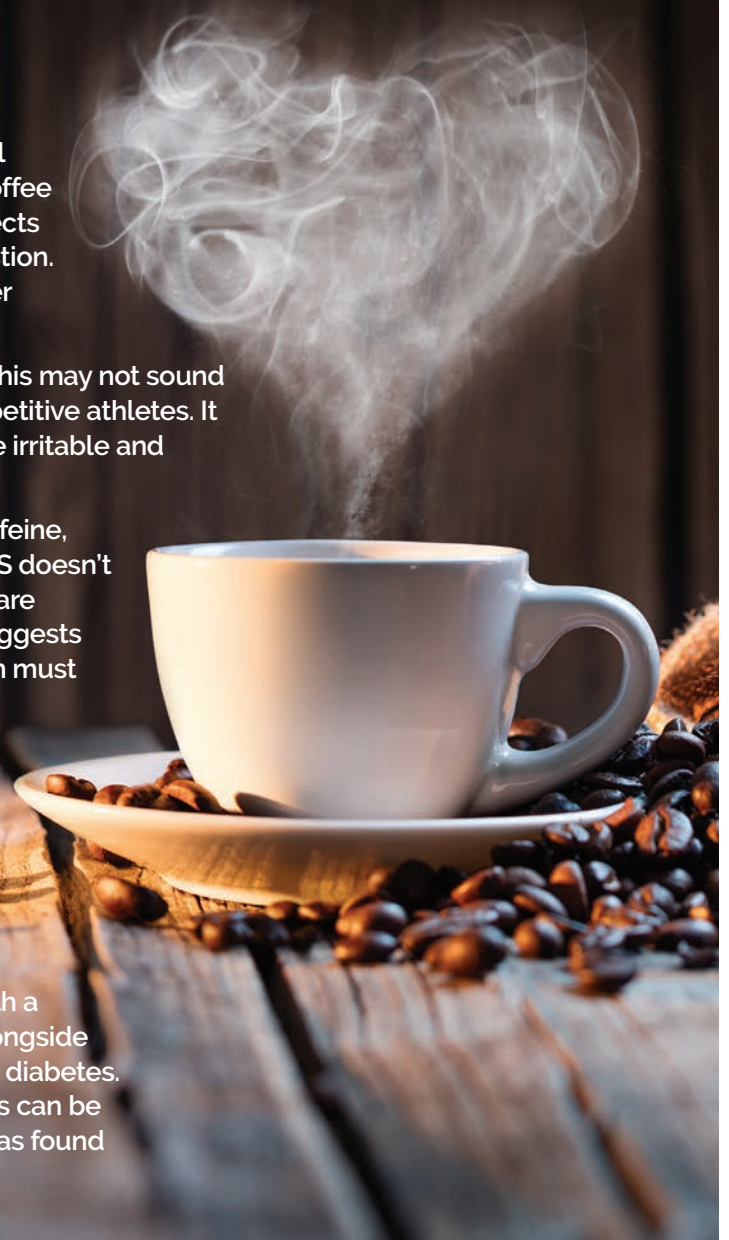
Did You Know...?

Caffeine is naturally found in fruits, leaves, and beans of coffee, cacao and guarana plants. It acts as a central nervous system stimulant. Just inhaling the scent of coffee can improve memory and stimulate alertness. The effects of a cup of coffee can occur just 10 minutes after ingestion. Peak caffeine concentration in the blood occurred after 45 minutes. Caffeine has a half-life of about six hours.

Coffee improved performance by an average of 1.7%. This may not sound like much, but it's a big deal for even moderately competitive athletes. It makes you alert and focused, but potentially also more irritable and anxious.

A medium cappuccino at Costa contains 325 mg of caffeine, while the Starbucks equivalent has just 66mg. The NHS doesn't give an upper limit for daily caffeine intake unless you are pregnant, but the US Food and Drug Administration suggests that 400mg daily is fine for adults but pregnant women must limit it to 200mg.

Several studies indicate that coffee was associated with a probable decreased risk of several forms of cancer, alongside cardiovascular disease, Parkinson's disease and type 2 diabetes. There is some evidence that its mood-elevating effects can be beneficial over the long term. Caffeine consumption was found to decrease the risk of depression.





14th BIDA International Congress Booking Form



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The invoice will be sent to you as soon as it is received by Bolton Travel Ltd, in association with Brightsun Travel, with whom you have a contract.
Full details of your booking will be shown on your 'confirmation invoice' and your booking is subject to the terms and conditions of Bolton Travel & Brightsun Travel.

Select your Package (Please tick)

CONGRESS PACKAGE ONLY (including FLIGHTS) (Package 1) £2010	<input type="checkbox"/>	CONGRESS PACKAGE ONLY (I will book my own flights) (Package 1 A) £1230	<input type="checkbox"/>
CONGRESS & VIETNAM (including FLIGHTS) (Package 2) £3454	<input type="checkbox"/>	CONGRESS & VIETNAM (I will book my own flights) (Package 2 A) £2604	<input type="checkbox"/>
CONGRESS, VIETNAM & CAMBODIA (including FLIGHTS) (Package 3) £4054	<input type="checkbox"/>	CONGRESS, VIETNAM & CAMBODIA (I will book my own flights) (Package 3 A) £3234	<input type="checkbox"/>

Preferred Airport (Please tick only if you have opted for Package 1/2/3)

LONDON HEATHROW (LHR)	<input type="checkbox"/>	MANCHESTER (MAN)	<input type="checkbox"/>
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Traveller Details

Title	First Name	Surname	Date of Birth	Passport No.	Nationality	Payment Ref used for Bank Transfer

NB. Please ensure that the above details are as per passport. (All Passports must be valid for at least 6 months prior to departure)

Passenger Details

Title: Dr / Prof / Mr / Mrs / Ms (Delete as appropriate)

First Name: Surname:

Address:

Postcode: Telephone:

E-mail: BIDA Member: **YES / NO** BIDA Membership No.:
(Delete as appropriate)

Packages are exclusive to BIDA Members & their immediate family members (Spouse & Children).
Other relatives of BIDA may be able to join at a supplement of £100.00 Per Person, subject to availability.

Declaration

I agree on behalf of all persons on the booking form, which I have submitted, to accept the unaltered Booking Conditions and the Insurance Conditions and warrant that I have the authority of all persons named to make the booking subject to these conditions. I am over 18 years of age. I also agree that, where applicable, I authorise Bolton Travel Ltd in association with Brightsun Travel to make this booking on my behalf.

Signature: Date:

To Reserve your place, please bank transfer the initial deposit amount (as per payment schedule), print this form, fill in your details, sign and send it (as scanned copy or photograph) to **bookings@boltontravel.com**
You will receive a confirmation email within 48 hours, confirming your Payment and Booking Reference.



For booking assistance & queries, please contact Bolton Travel's Representatives between 8:00 am – 5:00 pm (Mon-Sat) on

0208 144 5160 or

0208 144 3676 or

07903 812 874 or e-mail

bookings@boltontravel.com

Kindly do not contact BIDA Central Office in relation to this booking, as the bookings are handled by Bolton Travel!



bolton travel
Creating Magical Moments

Surrounding the logo are several circular images: a couple on a beach, a thatched hut, a safari vehicle with lions, a cruise ship, a dining room, and a theater audience.

☎ 0208 144 5160

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☎ 07903 812 874

✉ bookings@boltontravel.com

🌐 www.boltontravel.com

