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Te Hautaka o ngaa Akonga Rongoaa

ROYAL AUSTRALASIAN COLLEGE OF PHYSICIANS

THE TRAINEE PHYSICIAN JOURNEY

SUICIDE IN NEW ZEALAND YOUTH

A multifaceted approach

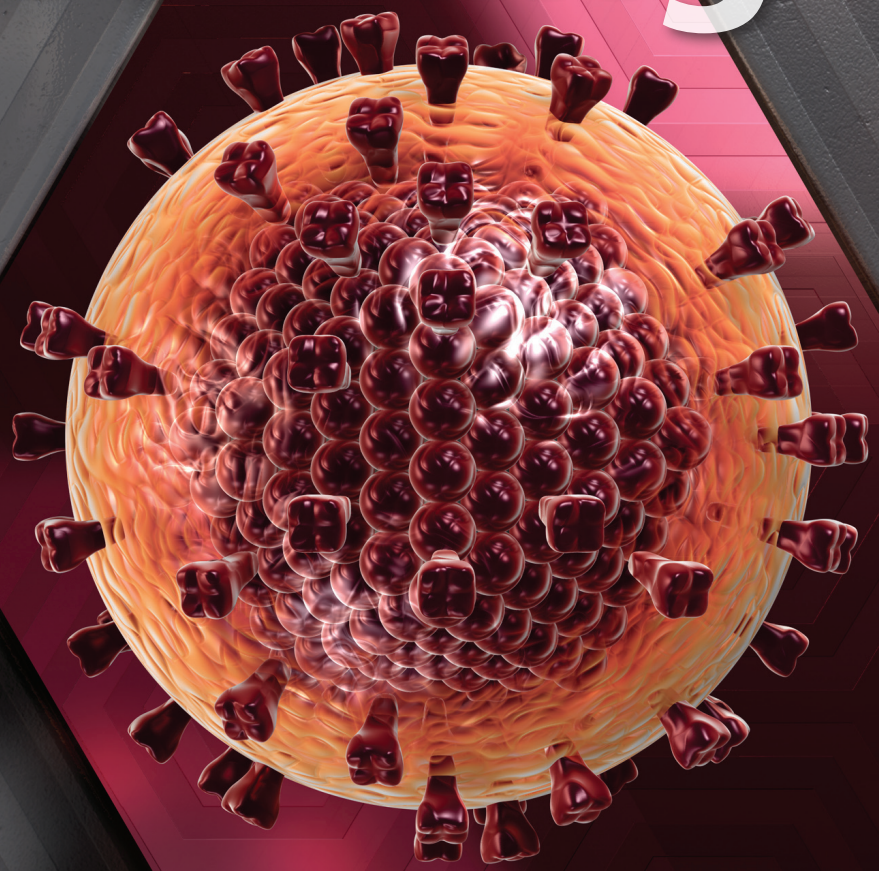
PAIN MANAGEMENT

Listening to music postoperatively

GLOBAL REFUGEE CRISIS

What you can do to help

Treatment of Hepatitis C has changed



Hepatitis C is a contagious viral infection that can cause cirrhosis, liver cancer and contributes to half of all liver transplants in New Zealand. An estimated 54,000 people in New Zealand are living with the Hepatitis C virus, with half of those undiagnosed. Treatment options for patients were limited.

Recently the treatment of Hepatitis C changed with new highly effective Direct Acting Anti-virals (DAA) fully subsidised. At least 90% of patients with Hepatitis C who are adherent to DAA treatment can expect to be cured. And now treatment for many patients starts in general practice.

Since 2003 bpac[nz] has provided primary care and the wider medical community in New Zealand with free, concise, evidence-based medical information. To learn more about treating Hepatitis C or other topics from our extensive range of online articles see our website:

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Should doctors strike?

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Resident Medical Officers (RMO) around the country have balloted in favour of further strike action, on the heels of a two day strike in October. How did we get to this point? The current impasse between the junior doctor's union, Resident Doctors Association (RDA), and the District Health Boards (DHB) stem from ten months of failed negotiations. The RDA and all 20 national DHBs entered a collective bargaining to secure a Multi-Employer Collective Agreement (MECA). The term for that agreement has lapsed, and is due for renegotiation. The centre piece of the RDA's proposal is the Safer-Rosters initiative: cutting the maximum number of consecutive days worked from 12 to 10, and the number of night shifts reduced from seven to four. The DHBs have rejected the proposal, saying it is unfeasible without additional government funding or a substantial cut in pay; required to hire additional staff to fill the gaps created by the new rosters.[1] However, RMOs salaries are based on categories of pay, calculated by the amount of hours they work. The proposed RDA 'Safer-hours' roster will reduce the total number of hours RMOs work and hence reduce pay. The counter claim made by the DHB's spokesperson is that they have already made a committed to improve rosters.[1] So it seems the two parties are in agreement in principle, but like most wicked problems, the devil is in the detail. The teams negotiating the agreement are locked in bitter battles over the planned implementation of the deal: including the duration it will be implemented, concessions for working unsocial hours and disagreements surrounding the system for penal rates.

The current dispute has similarities to other industrial actions. New Zealand has a long history of workers, from miners to maritime workers, banding together to demand change in working conditions. Our country has an equally long tradition of employers contesting such rights. Where the similarities thin however, is the nature of our job; we are directly responsible for the health and lives of New Zealanders. Is it ethical for doctors to strike then? During the recent withdrawal of labour, there were cancellations of outpatient clinics, elective surgeries and other non-urgent services. It is difficult to argue this had no negative impact on patient care and so would be at odds with our ethical maxim to do no harm. Nonetheless, the ethical guidelines for industrial disputes give provision to redress this situation. The New Zealand Code of Ethics recommendation states the decision to take industrial action can be made when there is a "reasonable expectation" that the outcome of industrial action will result in improvements in patient care.[2] Our duty of care is primarily to the individual patient in front of us, but also to future patients that we will care for late at night, towards the back end of a 12 day stretch. Doctors too deserve safe care. If the goals of the strikes are to improve the health of patients, through safer rosters for the clinicians responsible for delivering that care; it not only becomes ethical but becomes a duty to advocate for this change.

Medical students are not immune from the fallout of this dispute. Disruptions are likely to spill over into teaching time, as Senior Medical Offers cover striking doctors. You might be asked or even expected to contribute more towards your team, especially if you are a final year medical student, but hospital staff are notoriously unable to tell the difference between medical students of different levels. Remember, you are there only to learn, and any clinical activities you undertake must always be supervised by a qualified doctor. If you feel unsupported or pressured to work beyond your capacity, seek help from academic supervisors and contact your university!

Finally, I implore you to remain engaged in these debates. The problems of junior doctors today, will become your problems tomorrow. We medical students have fresh eyes to view the medical system. So note what is unjust, unkind or inappropriate and try to fix it; before experience or experience teaches you to rationalize the situation. As I approach the end of my medical school training, I have filled my kete with as much knowledge as possible, I only hope I haven't drop my more prized possessions along the way.

My tenure as Editor of the New Zealand Medical student journal has come to an end. I would like to thank my fabulous team of reviewers, editors, designers and production staff for their excellent work and tireless commitment. And to our readers, it has been a joy to publish this journal and I hope you enjoy reading it.

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The Royal Australasian College of Physicians: The Trainee Physician Journey

racp.org.nz
twitter.com/TheRACP

The Royal Australasian College of Physicians (the RACP) trains, supports and sets standards for a wide range of specialties in Adult Medicine and Paediatrics & Child Health, including cardiology, medical oncology, respiratory medicine, and over 30 other programs.

With a membership of almost 23,000 the RACP is the largest medical college in Australasia. This includes 15,000 Fellows and 7,500 trainee physicians (frequently known as specialists).

Physician training in Adult Medicine or Paediatrics & Child Health generally includes three years of Basic Training (including the Written Examination and Clinical Examination), and three or more years of Advanced Training.

BASIC TRAINING

Over the 36 month basic training program trainees have the opportunity to train in one of 26 medical specialties in Adult Medicine or Paediatrics & Child Health. Basic training involves:

- completing rotations with a range of hospitals and health services
- building on clinical knowledge and skills gained through completing a medical degree, and
- work-based assessments to monitor progress and obtain feedback

Basic Trainees sit both a written and clinical exam towards the end of Basic Training. Passing both examinations is required in order to progress to Advanced Training.

ADVANCED TRAINING IN ADULT MEDICINE OR PAEDIATRICS & CHILD HEALTH

Building on the knowledge and skills gained through previous specialist training, Advanced Trainees complete their training in one of 33 diverse medical specialties.

The RACP offers seven Fellowships:

- FRACP (Adult Medicine or Paediatrics & Child Health)
- FAFPHM (Public Health Medicine)
- FAFRM (Rehabilitation Medicine)
- FAFOEM (Occupational & Environmental Medicine)
- FAChPM (Palliative Medicine)
- FAChAM (Addiction Medicine)
- FAChSHM (Sexual Health Medicine)

Successful completion of the advanced training program results in accreditation to work as a physician in Australia or New Zealand, and Fellowship of the RACP (or one of its Faculties or Chapters).

TRAINEE PHYSICIANS' JOURNEY

Dr Annika Sjoeholm is a Paediatric registrar at Dunedin Public Hospital and recently sat her written and clinical exams, which completed her basic training with the RACP. She first became interested in Paediatrics as a 5th year medical student. "For quite some time I thought I wanted to do obstetrics, but gradually I realised I was much more interested in newborn resuscitation and care of the neonate than the delivery itself.

"As a trainee intern I undertook my medical elective in a specialist Paediatric department in the Middle East, which gave me the opportunity to interact with children with some quite rare and complex conditions. Though I couldn't speak their language, I found that children have a universal language through play and this helped us to communicate."

After several rotations through adult medicine as a house officer, Dr Sjoeholm knew she was interested in pursuing a more medically oriented career (as opposed to surgery or general practice) and found the choice between training in adult medicine versus paediatrics difficult.

"I was sold on paediatrics after spending six months as a paediatric house officer in a fun and positive children's ward in Dunedin. Obviously it helps that I like children too, which is a fundamental prerequisite for becoming a paediatrician."

For Dr Sjoeholm paediatrics offers variety – everything from preterm infants weighing less than 1 kg, to the adolescent with diabetes transitioning to adult services. "Every on-call shift is so varied – we may be called to an emergency delivery, be involved in a helicopter retrieval, or simply be there to reassure a family and give advice."

She says it's hugely satisfying to be able to support a sick child and their family through an illness "To gain the child's trust to let you examine them – even if it means examining their teddy bear's heart first – to admit them to the ward for treatment along with their worried parents, and then to see them leave once they are well again."

Sometimes students will tell Dr Sjoeholm that they couldn't work with children as 'it's too scary,' or 'kids get sick and it'd be too sad,' or 'I couldn't deal with the parents.'

"I'd say that a lot of students and doctors working in other specialties shy away from paediatrics for these reasons, however, like any area of medicine it becomes easier with experience. It's well worth learning some basics

even if you don't envision yourself becoming a paediatrician as unwell children are everywhere – in GP clinics, in ED, perhaps even on the same airplane as you. I still remember a child collapsing on the adult medical ward I was working on as a first year house officer!"

Preparing for the RACP exams and working as a doctor at the same time was a challenge. Dr Sjoeholm began studying for the written examination a year in advance, averaging 20 hours of study each week. If she were to do it over again Dr Sjoeholm would try to take more time out, building time into her study plan to go for a run, read a non-medical book or just sit in the garden.

"At the time you are so worried about failing that exam revision can become all-consuming. I'm grateful to have passed first time, but I can appreciate now that I'm no longer in the thick of it that passing or failing an exam doesn't define you as a person or a doctor."

Dr Sjoeholm's top tips for managing basic training are:

- take opportunities (courses, committees, research projects etc) as they arise – but don't overload yourself
- have a mentor – find a trusted consultant that you look up to and who can give you advice
- take time out – try to create a good work/life balance for yourself (you can't be expected to care for others if you don't care for yourself also)

At medical school Dr Sjoeholm completed an intercalated BMedSci(Hons) degree and, with a keen interest in clinical genetics as a sub-specialty, she plans to undertake a PhD in the near future. "Clinical genetics is a rapidly evolving area of medicine; for example, the Human Genome Project was only completed 13 years ago, and yet we now have readily accessible genome-sequencing technology as a clinical tool in general paediatrics clinics."

Dr Sjoeholm is keen to stay involved in research within the Paediatrics department. "I firmly believe that medical research is a worthwhile endeavour, as it drives evidence-based medicine and ultimately improves the care of our patients."

Dr Tom Wang is in his first year of Advanced Training with the RACP. He has chosen to specialise in cardiology and is currently a Registrar at North Shore Hospital. Dr Wang says he was attracted to cardiology in particular for multiple reasons: "Cardiovascular disease is the number one cause for mortality around the world and the most frequently encountered medical presentation to hospitals.

"The scope within cardiology is broad, from acute inpatient emergencies to outpatient management, procedures to radiology, young adult congenital and rheumatic heart disease patients to elderly/palliative settings, and from clinical to academic development. It is the pinnacle of evidence-based medicine with the widest range of established and effective therapies that improve patient outcomes, making it a very rewarding specialty.

"Cardiology advanced training in the Auckland region is of high quality and excitement with excellent teachers, colleagues and teams. There is a focus on acquiring procedural skill sets, as well as the clinical management of inpatients and outpatients. I also enjoy being up to date with the latest scientific literature, and opportunities to undertake research and attend conferences".

Looking back on his training Dr Wang says he has not encountered many unexpected challenges and there is not much that he would change. "Choose registrar runs that are not overwhelmingly busy when sitting your exams. For the written exams, the RACP online lectures are a good starting point, along with reading plenty of up to date textbooks and top medical journals.

"Study groups are very useful, particularly for reviewing and practising with past questions, and to motivate each other, stay on track and 'push forward', which is especially beneficial in the last couple of months. Setting a plan with goal dates for studying different topics is also a good idea.

Dr Wang's top tips for managing the transition from pre-vocational training to specialist training are:

- decide earlier rather than later which subspecialty interests you as a career, then 'go all out for it' – research is important whichever way you go
- prepare for exams early
- find the balance between working and other aspects of life – work can at times involve long hard hours and be stressful and demotivating, so 'decompression time' and 'escape strategies' are needed

As the 2015 RACP Trainee Research Award of Excellence recipient, Dr Wang aims to continue following his passion for research throughout his career, working with hospitals, universities, local and international doctors, and researchers within this field "I'm heavily involved in research and am always undertaking multiple projects at any one time".

Looking forward, Dr Wang has his next five years mapped out. He is planning to undertake a cardiology clinical Fellowship overseas after completing his training at the end of 2018, then return to New Zealand to practise as a cardiology consultant, ideally alongside a university appointment, within the Auckland region.

SUPPORT FOR TRAINEES

The RACP offers a support pathway to assist trainees who may be having difficulties meeting and completing their training requirements. The pathway, and its supporting resources, aims to help trainees and supervisors to navigate, address, and overcome difficulties at an early stage. Access to support services, including counselling services, medical services and support for regional and remote trainees, is also offered.

Reflecting a progressive outlook, the RACP understands the evolving needs of trainees throughout their training journey. Flexible training options are available to trainees who are unable to train on a full-time continuous basis, including:

- part-time training, and
- interruptions to training (for example, to take parental leave or volunteer overseas)

The RACP also hosts an annual "Trainees Day" event offering professional development, practical wisdom, and peer networking, which sees roughly one tenth of all NZ physician trainees attend each year.

FUTURE OF PHYSICIAN TRAINING

In response to global changes in postgraduate medical education, the modernisation of health care delivery, and the evolving nature of physician practice, the RACP is currently renewing the design and delivery of its education programs. This will include changes to selection into training, training curricula, and support services.

With a focus on aligning the RACP's training curricula with the reality of clinical practice, training will shift away from being predominantly time-based to having a greater emphasis on the assessment of competence in clinical practice.

A new standards framework that integrates medical expertise and professional competencies, aligned with an evolving view of physicians and their practice, will identify the ten essential domains of professional practice that trainees will be expected to develop competency in.

The RACP has recently developed a selection into training policy, with a key underlying principle of embracing diversity. Increasing the indigenous physician workforce – towards achieving population parity – is a priority for the RACP.

BEYOND TRAINING

There are countless ways members can engage with the RACP, both while still in training and beyond, including opportunities to influence the RACP's governance, advocate for colleagues, the community and consumers, and embrace innovations in training and practise.

The RACP's annual Trainees' Day, the New Zealand Trainees' Committee, and social media channels provide opportunities for trainees to connect with the RACP and with each other, through the RACP.

The RACP Foundation – the philanthropic arm of the RACP – awards grants, scholarships, and fellowships, to encourage world class research and support the education and training of current and future physicians.

Attaining Fellowship does not signal the end of a physician's training; the RACP offers continuing professional development, supervisor development workshops, podcasts and e-learning resources.

Suicide in New Zealand youth: a multifaceted approach

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6th Year Medical Student
School of Medicine
University of Auckland

Sarah is a final year medical student at the University of Auckland and will be based at Gisborne Hospital for her PGY1 year. She is interested in emergency medicine and general practice. Her acappella group recently came first in the division at the 2016 Pan Pacific Youth Harmony Championships.

ABSTRACT

The rate of suicidal behaviour in New Zealand youth is among the highest in the OECD countries, posing a significant and immediate threat to the country's health and wellbeing profile.[1] Understanding the risk factors for suicidal behaviour is central to the identification of high risk individuals, and the design of targeted interventions. Mental illness, gender, family cohesion, bullying and Māori ethnicity have been associated with suicidal behaviour in New Zealand youth. Due to the complexity of the risk factors for youth suicide, a multifaceted and collaborative approach may prove to be the way forward. Four avenues of population based intervention are also discussed: education, screening, restricted media reporting and the restriction of means to suicide. Although some evidence exists for each avenue, there is a need for more well-designed studies before conclusions can be drawn on the usefulness of these strategies in the context of New Zealand youth.

INTRODUCTION

The rate of suicidal behaviour, including suicide attempts and self-harm, in New Zealand youth is among the highest in the OECD countries, posing a significant and immediate threat to the country's health and wellbeing profile (Figure 1).[1] In 2011 the suicide rates for youth aged 15 to 24 in New Zealand were 28.1 and 9.9 per 100,000 for males and females respectively.[1] However, it is promising that since peaking in 1995, suicide in youth has decreased by 32.8%, and self-harm hospitalisation has decreased for male and female youth by 46.9% and 27.5%, respectively.[1] When analysed by ethnicity, the youth suicide rate has been trending downwards in non-Māori youth since 1996, but the Māori rate has had a minimal change.[1] The 2011 Māori youth suicide rate was 2.4 times higher than that of non-Māori peers. A 2003 study of New Zealand secondary school students by Coggan *et al.* further highlights the high rates of suicidal behaviour in New Zealand youth.[2] This study reported that one in three students had experienced self-harm ideation and one in nine students reported attempting suicide.[2] This review aims to describe known risk factors for suicidal behaviour in an attempt to understand the high rates of suicidal behaviour in New Zealand youth. Furthermore, it appraises interventions and highlights barriers that may interfere with the successful implementation of these interventions in a New Zealand context. It is incredibly important that health professionals recognise the high rates of suicide in New Zealand youth and incorporate this knowledge into future practice. While some strategies require a higher level of change, many can be incorporated into individual practice.

RISK FACTORS FOR SUICIDAL BEHAVIOUR

Risk factors for suicidal behaviour are believed to act in a cumulative manner.[3,4] Understanding these factors is central to the identification of high risk individuals and the design of targeted interventions. As successful youth development is reliant on positive mental health, mental illness is a major risk factor for suicidal behaviour and ideation in youth.[2] Internationally, literature has shown that more than 90% of youth suicide victims had a current DSM-IV mental illness, 80% of which were untreated at death.[5] Depressive disorders are consistently the most prevalent with 49 to 64% of victims estimated to be affected.[3] Other affective disorders, conduct disorder, and substance abuse disorder have also been identified as risk factors and are often comorbid with depressive disorders.[3] A New Zealand survey by Fleming *et al.* showed that depression was the largest risk factor for youth suicide attempts, supporting international findings and implying that the psychopathology of suicide attempts and completion shares similarities.[6] Indeed, a history of suicide attempts is one of the strongest predictors of future attempts and completion.[3] The high prevalence of mental distress in New Zealand, and the relationship of this with suicidal behaviour, advocates for interventions aimed at promoting positive mental health.

Other factors implicated in the pathogenesis of suicidal behaviour and suicidal ideation are represented in Figure 2 and include age, gender, family cohesion and family history.[3, 4, 5] In New Zealand, as seen worldwide, more males complete suicide, while more females make suicide attempts.[2] Although some of the risk factors such as gender, sexual orientation or ethnicity are fixed, factors such as family cohesion and bullying represent avenues for potential intervention.

Impaired parent-child relationships have been shown in the literature to be associated with increased suicidal behaviour.[3] However, this is controversial

as examining this independently of psychiatric illness is difficult. A New Zealand study by Fleming *et al*. supported the importance of family relationships in the development of resilience in New Zealand's youth.[6] This study showed that the secondary school students who reported to be close to at least one parent had significantly fewer suicide attempts (p=<0.0001).[6] The authors suggested that caring families may reduce suicidal behaviours both directly and indirectly, by reducing risk factors such as depression.[6] In a New Zealand survey by Coggan *et al*. high school students who were classed as being 'chronically bullied' were more than two and a half times more likely to consider self-harm, attempt self-harm and attempt suicide.[2] Therefore, prevention of bullying, or counselling of the victims of bullying may be an avenue worth exploring in future suicide prevention strategies.

It is important to recognise that as Māori have a unique cultural and historical background, and a unique experience of New Zealand's society, additional risk factors for suicidal behaviour exist. The removal of land, forced acculturation, and forced impoverishment of Māori that occurred with colonisation continue to have profound effects on Māori today.[37] As a result, many Māori struggle to maintain a Māori identity, and to access the institutions of Māori culture which are a source of psychological, spiritual and physical wellbeing.[37] The extent of the impact of this is yet to be determined.[4]

Any intervention aimed at reducing suicidal behaviour in New Zealand's youth therefore needs to recognise and account for the unique needs of Māori youth. This is reflected in the New Zealand Suicide Prevention Action Plan 2013–2016 which states that "all agencies will design and implement initiatives in a manner that will be effective for Māori and Pasifika, and adopt an approach that empowers people and builds their resilience".[7] A major objective of this plan is to build the capacity of Māori and Pasifika whānau and communities to prevent suicide. This will be promoted by ensuring that culturally relevant education and training is available to Māori and Pasifika whānau, performing research into what works for these whanau and encouraging leadership for suicide prevention.[7] The New Zealand Suicide Prevention Strategy 2006–2016 also emphasises the importance of cultural frameworks to address suicide prevention in Māori.[8] This strategy highlights the importance of recognising that suicide in Māori impacts on whānau, hapū and iwi. Whakapapa links whānau, hapū and iwi. Therefore, loss of life also represents a loss of that whānau member's contribution to and continuation of whakapapa.[8] This strategy acknowledges four pathways to achieving better health outcomes for Māori: whānau, hapū, iwi and community development, Māori participation, effective service delivery and working across sectors.[8]

INDIVIDUALLY TARGETED APPROACHES TO SUICIDE PREVENTION

Pharmacological treatment of mental illness may prove an effective individually targeted intervention for reducing suicidal behaviour because of the strong association between mental illness in youth and suicide. Lithium therapy has been shown to significantly reduce the recurrence of suicide attempts in adults with bipolar disorder but this has not yet been studied in youth.[3, 9] Population based studies have shown that the introduction of selective serotonin reuptake inhibitor antidepressants (SSRIs) correlated with decreased suicide rates, and that the most substantial reductions were seen in populations with higher SSRI prescribing rates, such as Australia.[5, 9] However, meta-analyses of randomised control trials of SSRIs generally do not show significant changes in suicidal behaviours and suicide rates.[5] These studies are inherently flawed as the incidence of suicide is low, and information on suicidal behaviour relies on self-reporting.[5] Appropriate recognition of and treatment of mental illness with antidepressants such as SSRIs is an action that can be taken by individual practitioners to address the burden of suicide in New Zealand youth.

Adverse event reporting for SSRIs highlighted that youth taking SSRIs may experience an increased risk of suicidal thoughts and behaviours, although controversy exists here due to methodological issues.[5] Because of this finding, in 2004 the Food and Drug Administration (FDA) regulatory group issued a requirement for the drug manufacturers to place a black-box warning on all antidepressants, warning of this increased risk.[5, 9,10] This was revised in 2007 to the current statement, which includes the observation that depression itself is associated with an increased risk of suicide.[10] Practitioners have been advised by the FDA to balance the potential risks and benefits for each patient when prescribing antidepressants. This black-box warning acted as a barrier to the treatment of youth mental illness as it correlated with decreases in prescription rates of various antidepressants.[10] Few studies have analysed the effect of this on suicide attempts. However, it has been observed that there were no sudden changes in completed suicide rates of those aged 10 to 34 years marking the time of the FDA warnings.[10] A further barrier to the pharmacological treatment of youth mental illness is potential non-compliance with treatment.[5]

There are many barriers to help seeking in mental illness and this may include a preference to manage the problem alone.[11] Online and computerized self-help resources may overcome some of these barriers and prove an effective strategy for suicide prevention. The benefits

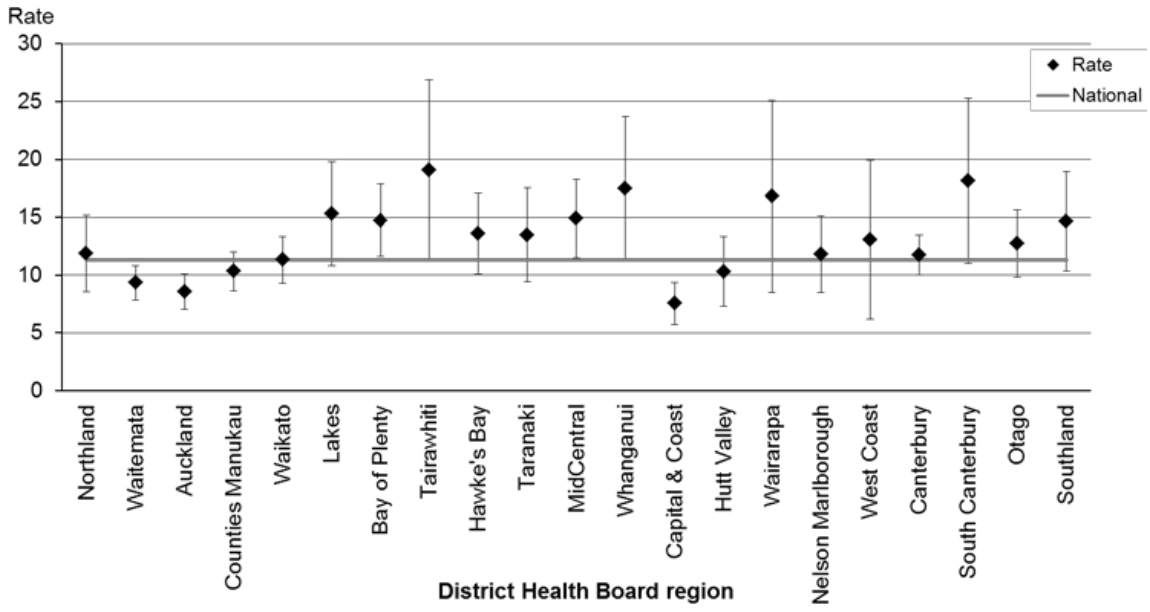

Figure 1: Suicide rates for New Zealand's youth as compared to other OECD countries
Adapted from Ministry of Health, NZ[1]

Risk factors for suicidal behaviour
Age (youth and eldery)
Depressive disorders
Substance abuse disorders
Other affective disorders
Gender
Low socioeconomic status
Low self esteem
Family cohesion
History of abuse
Homosexuality
Family history
Bullying
Rural lifestyle
Māori ethnicity

Figure 2: Risk factors for suicidal behaviour in youth[3,4,5]

Summary of suicide prevention approaches
Individually targeted approaches
Pharmalogical treatment of mental illness
Computer based therapy
Population targeted approaches
Education: public media campaign
Education: school based cirriculum
Education: physician training
Education: gatekeeper training
Screening
Restriction of suicide means
Restricted media reporting

Figure 3: Summary of suicide prevention approaches discussed in this review

of online delivery include anonymity and wide dissemination.[11] Such interventions have been found to be effective in the treatment of anxiety and depression.[11, 12, 13] A New Zealand based study by Merry *et al.* examined the effect of a computerized cognitive behavioural therapy (CBT) based intervention called SPARX on adolescents with depressive symptoms.[12] Adolescents receiving SPARX therapy had lower depression scores at the end of the intervention and a significantly higher remission rate compared to treatment as usual.[12] Given the close relationship between mental illness and suicidal behaviour, it is conceivable that e-therapy resources that reduce mental illness may reduce suicidal behaviour. However, few studies examine suicidal behaviour as an outcome. A small study by van Spijker *et al.* demonstrated that an online CBT based intervention reduced suicidal ideation in adults by 35% as compared to 21% for patients with usual care.[11] A study by Watts *et al.* showed that patients prescribed an internet based CBT programme for depression had reduced suicidal ideation at the end of the treatment course.[14] More research is needed before the effect of computer based therapies on suicidal behaviour in youth can be appreciated.

POPULATION TARGETED APPROACHES TO SUICIDE PREVENTION

Due to the complexity of the factors implicated in youth suicide risk, a multifaceted approach may be required. Potential areas of focus are summarized in Figure 3. In addition to the individually targeted interventions discussed above, interventions can also target a population as a whole. Such interventions may focus on avenues such as education, screening, media reporting and the restriction of means to suicide. Education can be targeted towards the general public, physicians or nominated 'gatekeepers', individuals who are trained to identify and refer youth at risk. Education of the public aims to improve the recognition of youth at risk and reduce stigmatism.[9] Although a New Zealand study by Akroyd *et al.* suggested a national media campaign had modest effects on public attitudes, there was no significant effect on suicidal behaviours, a finding paralleled by similar international campaigns.[5, 15, 16]

School based suicide awareness curriculum, aimed at facilitating self and peer recognition, has been reported in several studies to improve knowledge and attitudes.[3, 5, 21, 22] However, there is insufficient evidence to determine whether this is effective in reducing suicidal behaviours. An alternative approach is an introduction of school-based skills programs, which aim to enhance self-esteem, coping and problem solving skills. A small number of studies have indicated that these programs may reduce suicidal behaviour.[5, 7, 19, 20] However, further studies are needed to appreciate the effect of such programs. Variation in the programs studied further complicates the analysis of this intervention. A major barrier to the implementation of such programs is the considerable strain these programs put on schools.[17] Furthermore, school based education fails to target youth who do not attend school, such as older adolescents who have left school based education.[17] A further education strategy is the education of 'gatekeepers', such as teachers or pharmacists, who are trained to recognise and refer youth at risk. Although many schools have implemented gatekeeper training programs, few have evaluated the effect of these.[3] However, some studies have shown improvements in gatekeeper knowledge, attitudes and referral practices, and some military based gatekeeper programs have reported lower suicide rates in adults.[3,5,9,21,22,23] But this strategy requires youth to connect with adults and the disciplinary role of teachers may hinder its effectiveness.[9, 17]

Population screening aims to identify at risk individuals who may require further management.[5] Failure to screen for depression may contribute to poor patient management and treatment.[5] Screening as a preventative strategy for suicide is possible because a large proportion of those making suicide attempts have had recent contact with medical services.[5] Up to 83% of suicide victims have had contact with primary care in the year prior to their death, and up to 66% of victims within one month.[5] Evidence of the effect of screening for mental illness in primary care is varied. Whilst some studies report improved detection and increased treatment of depression, others show no benefit.[5, 24, 25, 26] In a small Australian study by Pfaff *et al.*, after attendance at a one day suicide prevention workshop, general practitioners demonstrated increased recognition of psychologically distressed patients, and the identification of suicidal patients (determined by the Depressive Symptom Inventory–Suicidality Subscale score) was increased by 130%.[26] Despite increased recognition, patient management was not significantly different after attendance of the workshop.[26] This study highlights that screening by primary care physicians alone is unlikely to be effective, but is reliant on changes in practice after a positive screen.[3, 5, 26] Such changes may include prescription of antidepressants, follow up with a nurse case worker, or referral to secondary services.[5] These actions are not limited to primary care physicians, and instead can be considered by health practitioners across many different contexts. More evidence is needed to determine whether screening does result in significant changes in physician practice, patient management and primary outcomes such as suicide attempts. As suicide risk for any individual waxes and wanes over time, screening may occur at a time when the patient is relatively asymptomatic, and this may be a major barrier to the success of screening interventions.[3] Furthermore, the success of screening also requires that the individual accepts the need for treatment.[3, 5]

Suicide attempts using highly lethal methods, such as firearm injury or hanging, result in higher rates of completion than the less lethal methods such as overdose.[5] Restricting the access to the means required for a particular method of suicide reduces the rate of suicide by that method.[9] Furthermore, restricting specific means can reduce the total suicide rate where the method is common, as seen with barbiturate restriction in Australia, or highly lethal.[5, 27] It has been suggested that means restriction is effective because suicidal individuals are often impulsive and the risk period for suicide is only transient.[3] Therefore, restriction of means of suicide during this time may prevent suicide.[3] In 2011 in New Zealand, 76% of male youth and 87% of female youth committed suicide through hanging, strangulation and suffocation.[1] Therefore, the restriction of means required for hanging, strangulation and suffocation in New Zealand may reduce both suicide attempts and the overall suicide rate. Other methods of means restriction include reducing the package size for over the counter analgesia, physical barriers at jump sites, restrictions to toxic drugs, and restricting vehicle emissions.[5, 9] An Australasian study by Beautrais showed a significant increase in the number of suicides by jumping from a bridge when safety barriers were removed as compared to before.[28] Although the restriction on these means has been shown to reduce suicide rates overseas, there is a need for evidence specific to New Zealand.[5, 9]

The media can play a dual role in suicide prevention efforts. Media attention may precipitate suicidal behaviour by drawing attention to and glamourising suicide, or it may educate the public and promote positive mental health.[5, 9] Internationally, media blackouts, which prevent reporting on suicide, have been associated with decreased suicide rates.[5, 29, 30] New Zealand has relatively restrictive guidelines for reporting suicide, but the effect of these on suicide rates has not as yet been evaluated.[9]

Many of these population based approaches are reflected in The New Zealand Suicide Prevention Strategy 2006–2016.[31] This strategy outlines seven goals to reduce the burden of suicide in New Zealand including to reduce access to the means of suicide, to promote the safe reporting and portrayal of suicidal behaviour by the media, and to promote mental health and wellbeing, and prevent mental health problems. This strategy highlights the importance of a co-ordinated multisectoral approach that is evidence based and is committed to reducing inequalities.[31]

CONCLUSION

The high rate of suicidal behaviour in New Zealand's youth as compared to other OECD countries poses a significant threat to the country's health and wellbeing profile and reflects a need for a more effective suicide prevention strategy. Understanding risk factors and how they apply to New Zealand's youth may aid the detection of high risk individuals, and the development of targeted interventions. Factors such as depressive illness, poor family cohesion, and bullying are potential areas for individually targeted interventions. Such interventions include the pharmacological treatment of mental illness. Although some evidence exists for the beneficial effects of the treatment of mental illness on lowering the rates of suicide, evidence in this area is generally lacking. Population based interventions may focus on education, screening, restricted media reporting and the restriction of means to suicide. Much of this data is international, with questionable applicability to New Zealand's youth. Furthermore, because of the variable and limited quality of research in these areas, there is a need for more well-designed studies before conclusions can be drawn on the usefulness of these strategies in the context of New Zealand's youth. However, due to the complexity of youth suicide risk and youth suicide prevention, a strategy that combines multiple, complementary approaches, may prove to be the way forward. This may include higher level change as well as changes to individual practitioner practice.

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Listening to music postoperatively as part of pain management?

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ABSTRACT

Music has been successfully used for pain management with its proposed mechanism of action arising from endorphin release. In elderly orthopaedic patients it may reduce opioid related complications and result in earlier mobilisation, easier dressing changes and reduced length of stay. This paper systematically searched the literature for research on music as a post-operative analgesic in an orthopaedic setting. Eight articles were identified with seven reporting music as beneficial for pain management and one reporting no effect. Other benefits reported were decreased anxiety and opioid use, and improved ambulation and mental state. With joint arthroplasty rates rising, music, unobtrusive and free from side effects, may be a pain management tool worth trialling. Practicalities of implementation are discussed.

INTRODUCTION

Music is used every day to create an atmosphere conducive to relaxation, sleep, concentration or celebration. Historically, Pythagoras used harmonic music to soothe people and cure ailments and termed it "musical medicine".[1] Florence Nightingale noted that music with a continued harmony, performed either by voice or instrument, had a beneficial effect on patients' wellbeing.[1] Three Cochrane reviews have concluded that preoperative music reduces anxiety with some studies reporting it to be as effective as midazolam.[2]

A meta-analysis of post-operative pain management following major surgery, including abdominal, major gynaecological, orthopaedic and thoracic surgery, revealed the incidence of fair or poor pain relief was 23%.[3] Poor pain management post-operatively is linked with increased complication rates, while better pain management in the first 5 days post-operatively is linked to earlier mobilisation and fewer temperature spikes after total joint arthroplasty.[4,5] In an orthopaedic trauma setting, neck of femur fractures in the elderly are associated with reduced mobility, high morbidity, and these patients are particularly susceptible to the side effects of stronger analgesics.[6] If music is able to reduce post-operative pain and/or anxiety in patients, its benefits may include fewer analgesia complications and investigations for temperature spikes, as well as earlier mobilisation, improved patient experience, reduced length of stay, and potentially lower medical costs.

This article will first provide a background for the rationale of music as a tool for post-operative pain management, and then use a systematic search to specifically address research in an orthopaedic population. The aim is to elucidate what effect, if any, music has in orthopaedic post-operative pain management and in what ways it could be implemented.

BACKGROUND

Mechanism of action

Music is thought to enact its effect on pain and anxiety through auditory neural pathways which inhibit pain signals passing via the thalamus to the amygdala.[7] This both distracts the participant from the unpleasant situation and improves mood through the release of endorphins.[8] Endorphins then act on the periventricular and periaqueductal grey matter which amplifies descending inhibition of pain in a similar way to opiates. The neural auditory pathway also leads to the hypothalamus which influences the hippocampus and the anterior cingulate cortex to enhance relaxation and distraction.[7,9]

The question is often posed if it is the effect from the music *per se*, or its vibrations. In one study, mice were given heart transplants from an unrelated, non-matched mouse to produce a transplant rejection. For a week following the operation, the mice, 5 in each group, continuously listened to either opera, a selection of Mozart concertos, music by Enya, or a range of single monotones. Mice exposed to opera survived an average of 26 days, Mozart 20 days, Enya 11 days which was statistically significantly longer than the monotone group which survived for an average of 7 days. To ensure the effect was from the music and not vibrations, another group of deaf mice were transplanted from non-matched mice and then exposed to the opera music. These mice survived only 7 days.[10] This highlights the role of the harmony of music.

Previous research

Early research was done in cardiothoracic surgery. The effect of music and rest on coronary artery bypass graft (CABG) patients on post-operative day 1 was studied by Voss *et al*. There were three randomly assigned groups: group 1 listened to 30 minutes of music (n=19), group 2 had a scheduled rest period (n=21), and group 3 had treatment as usual (n=21). Using visual scales from 0-100 for pain and anxiety, statistical analysis compared pre and post intervention scores. Music significantly decreased mean anxiety, pain sensation, and pain distress scores by 50, 28, 40 points respectively compared to non-significant changes in the rest, and control groups.[11]

However, when investigating physiological measures as well as pain the results are relatively equivocal. A repeated-measures randomized controlled trial studied the effect of both 30 minutes of music and 30 minutes of rest or 60 minutes of uninterrupted rest on post-operative day 1 in 58 patients who had undergone CABG or aortic valve replacement. There were significantly lower cortisol levels in the music group (484 mmol/L) compared to the rest only group (618 mmol/L).[12] However measures of pain, heart rate, respiratory rate and anxiety levels while supporting music as beneficial failed to reach significance. The authors concluded the stringent statistical methods, low participant numbers and low baseline states of anxiety in both groups may have masked the practical benefits observed during data gathering.[12]

Good *et al*., conducted the largest randomized control trial in which 500 major abdominal surgical patients used either music, relaxation, a combination of music and relaxation, or none of these (control group) to determine their effect on post-operative pain at rest and with ambulation on post-operative days 1 and 2. There was significantly less pain in the three treatment groups when compared to the control group at all time points.[3] Further division of participants into gynaecological or general surgical procedures revealed that regardless of surgical procedure type pain scores for music, relaxation or a combination of both were all lower compared to the control group.[14,15]

A 2015 meta-analysis pooled data from 73 trials (6,902 surgical patients), investigating music use before, during or after surgery. Compared with patients who were not played music, those who were, reported experiencing less pain and anxiety following surgery. They were also less likely to need pain medication. In addition, music appeared to increase patients' overall satisfaction after surgery.[16] Some of the differences, e.g. 0.77 less on a 1-10 pain scale, while statistically significant may be less clinically significant, although the authors final conclusion was music should be available to all patients undergoing operative procedures.

A 2006 Cochrane review initially concluded that post-operative music use reduced pain intensity by 0.5 units (95% CI: -0.9 to -0.2) more on a 0-10 scale than control participants, with a number needed to treat of 5. While opioid requirements immediately post-operatively and 24 hours post-operatively were 18.5% and 15.4% less respectively in music vs control groups. The final conclusion was that the decrease was small and that music should not be the primary method of pain relief.[17] However, this report was withdrawn in 2011 stating a new one was due out in 2013.[18] To date there is no record of this review being published.

The strength of the above results vary like the experimental design and there is no large study completed to date. However, overall, the evidence lends support to music's potential use post-operatively to improve pain and anxiety and to a lesser degree reduce medication use. This article will investigate if such findings been replicated in an orthopaedic population and if so, how music could be implemented as part of post-operative management?

METHOD

A systematic search was performed using the Medline, Embase, Web of Science, Cochrane and Scopus databases. The search terms "music OR music therapy", AND "post-operative OR surgery OR orthopaedic OR orthopedic OR recovery", AND "pain OR analgesia", were used. Articles were scanned by title for relevance. Reference lists and articles recommended by the online databases were also scanned for publications. Articles were limited to the English language. A narrative review of these papers is presented.

RESULTS

The search identified eight peer-reviewed articles. Seven studies reported positive benefits of music such as reduced pain, anxiety and opioid use and improved ambulation and mental state.[8, 19-24] One study reported no differences between a music intervention and control group.[25] Six studies investigated patients undergoing knee arthroplasty, four hip arthroplasty, one spinal surgery, and one a combination of spinal, joint, and trauma surgeries. Studies were heterogenic in their methodologies as to the timing and type of music as well as to comparisons and controls (discussed below). To measure pain, four used a 0-10 visual analogue scale[19, 20, 23, 24] and one a 0-100 scale[25], one used a 0-10 brief pain index[8], one used nurses notes to measure episodes of confusion,[22] while another used the Mini Mental State Exam.[21]

Pellino *et al*., provided a kit of non-pharmacologic strategies for pain and anxiety management containing music and instructions on relaxation exercises was given to 33 patients who underwent elective total hip or knee arthroplasty.[8] The control group of 32 patients received no kit and treatment as normal. Post-operatively day 1 there was no difference in pain or medication use between the groups, while on day 2 pain measures were the same but opioid use was 68% lower in the experimental group.[8]

In a series of studies, McCaffrey and Locsin, demonstrated a reduction in pain medications, pain scores, confusion, improved ambulation and better mental state scores in patients 59 years or older undergoing elective total hip or knee arthroplasty.[21-23] Half were automatically played music for 1 hour four times a day starting from when the patient was first conscious from the anaesthesia, while half received no music. The music group took significantly fewer (12%) pain medications post-operatively than the control group. The significantly different mean pain scores (0-10 scale) on days 1, 2 and 3 were 7.8, 6.2, and 4.6 respectively in the music group, and 8.9, 8.2, and 7.4 in the control group. Music listeners walked 30-40% further each day, and only 2 music listeners experienced confusion, while 36 of the control group did.[23] This finding was further investigated in a similar experiment and the music listeners scored significantly better on Mini Mental State Exams and acute confusion scales.[21] The papers concluded that for patients aged 59 years or older, music reduced pain, increased ambulation and reduced confusion during the first three post-operative days.[21-23]

Allred *et al*., had 28 patient's listen to music for 20 minutes before and after the first ambulation following and total knee arthroplasty and found no differences compared 28 patients who had periods of quiet rest. This study measured pain, anxiety, morphine use, heart rate, respiratory rate, oxygen saturation and blood pressure.[25] Pain and anxiety scores in the music groups ranged from 36 – 52 and 27-36 respectively, while in the control group the range was 36-46 and 22-34 respectively.

Masuda *et al*., showed music proved effective as immediate and short term pain relief for orthopaedic patients over 60 years old having undergone either spinal, joint or trauma surgery. Listening to music for 20 minutes in a quiet room vs 20 minutes relaxing in a quiet room was investigated in 44 patients. On a 0-100 scale, the experimental group reported pain decreased from 82 to 59 after the 20 minutes which was significantly less than the decrease from 85 to 72 in the control group.[20]

The most recent study by Lin *et al*., investigated patients undergoing spinal surgery.[19] Thirty patients listened to music *ad libitum* from the evening before surgery to the second day after surgery and the control group of 30 did not. Measures were taken from one hour post-operative until the end of day two. On 0-10 scales pain and anxiety scores were significantly lower in the music group compared to the control group at all times. The mean anxiety scores in the music group were 0.8-2.0, compared with 2.1-5.1 in the control group. The mean pain scores in the music group were 1.7-3.0, compared with 4.4-6.0 in the control group. Non-significant trends were seen for lower heart rates, urine cortisol and adrenaline in the music group as well.[19]

Finally, Simcock *et al*., showed a selection of music played intra-operatively influenced post-operative pain. Patient selected music was played intraoperatively during total knee arthroplasty under spinal anaesthesia

and produced a significant reduction in self-reported pain 3, 6, and 24 hours after surgery in 15 patients when compared to 15 control patients who had no music.[24]

DISCUSSION

This systematic search uncovered eight articles on post-operative pain management and the use of music in an orthopaedic setting. Seven reported music as beneficial, while one reported music as being no different to a control group.

The research to date provides support for, but does not definitively prove the efficacy of post-operative music for pain management. There have been no studies with a follow-up longer than 3 days or looking at the wider benefits of improved pain management, namely, earlier or better experiences with mobilisation, reduced complication rates or fewer post-operative temperature spikes. Generally studies in a variety of surgical settings have reported that post-operative music and/or undisturbed rest on days 1 to 3 is successful as a form of immediate and basal pain or anxiety management.[16] Meanwhile music has also been shown to reduce opioid medication use, cortisol levels, and confusion, while improving sleep and ambulation.[17, 23]

Information about the effectiveness of music from reviews, intervention studies and randomised controlled trials will probably never be able to definitively answer questions about whether individual patients should try it. A conclusion drawn by many reviews and research articles is that the safety, tolerability and freedom from side effects of music means that encouraging patients to listen to music to try to alleviate their pain is a safe option. The transplant mice study demonstrates the effect of music is more than just vibrations and seven of the eight studies show music was better the control, which essentially is quiet rest. Music can therefore can be considered as an adjunct to current post-operative pain management practices due to some good evidence of its utility combined with its unobtrusiveness, safety, and freedom from side effects.

LIMITATIONS

There is language bias in this review as both German and Japanese researchers have been involved in this area with some of their articles not written in English. Overall, studies did not have adequate sample sizes and lacked sample size calculations which lead to trends for physiological effects but no significant results. Also, the description of randomization was poor or non-existent in studies. None of the studies were blinded for participants or researchers. This is essentially impossible, however, because of the intervention. Most studies used the 1-10 visual pain scale though some used 1-4 scales which makes comparison between studies more difficult and would also make measuring a significant difference more difficult.

PRACTICAL IMPLICATIONS

The music found to be most beneficial for pain relief is non-lyrical, continuous in harmony, approximately 60-80 beats per minute and at a maximum of 60 dB.[26] Music styles such as classical, new-age and meditation are reported optimal whereas heavy metal or techno music have been reported as ineffective or increasing in stress.[27] Both a meta-analysis and Cochrane review recommended patients select their preferred option from a research proven selection.[2,16] A minimum of 30 minutes duration is recommended though there is scant evidence to substantiate this.[16, 26]

A practical way to trial music's use would be to provide patients with the option of wireless headphones with preloaded music and to include a small blurb in the pre-operative information pamphlet outlining this option and the reasons behind introducing music in the clinical settings. Medical students and first year house officers are in a prime position to encourage patients to listen to music using their cell phone or MP3 players.

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The effect of parental cancer on children

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ABSTRACT

The effect of cancer on a patient is widely appreciated and studied, while the effect on the rest of the family unit is often overlooked. As children develop, a number of challenges may threaten the attainment of developmental goals. Parental cancer has the potential to disrupt the appropriate development of children and lead to psychosocial impairment. Evidence suggests an increased prevalence in negative internalising behaviours in children with parental cancer, although differences are seen between primary aged children and adolescents, as well as males and females. Understanding the potential negative impact parental cancer can have on children, and recognising modifiable factors that may precipitate these effects, will allow for the development of targeted interventions. Clinicians involved in the management of a parent with cancer should consider the needs of the family unit as a whole and facilitate open communication within these families.

BACKGROUND

Approximately 22.4% of cancer occurs in those aged between 21 and 55.[1] As these are key child-bearing years, a significant number of cancer victims have children.[1] Despite this, current treatment plans often fail to recognise the impact of cancer on the psychosocial wellbeing of the children involved. The family can be theorised as a system, in which an event in one family member's life can affect the behaviour and psychological function of other family members.[2,3] This theory suggests that members of a family cannot be understood in isolation from each other.[3] In accordance with these findings, literature in the last twenty years has become more focused on the challenges that cancer presents to other family members, and in particular, the children.[4] This review aims to explore the impact parental cancer has on children, and the factors that are believed to influence the psychosocial adjustment of these children.

METHODS

A search of the literature was conducted in June 2014, using Medline and PsychInfo. Articles were limited from the year 2000–present. Search terms included "parental cancer", "child psychology", and "child behaviour". Inclusion criteria were publication in English, published from 2000–present, and on the subject of parental cancer and psychological adjustment. Abstracts were scanned to find articles that met these criteria. Included articles were mainly reviews. Studies were excluded if the full text was not available via the University of Auckland subscription, or the children had cancer. Studies were not required to meet a quality standard due to the narrow field of research.

DISCUSSION

The children of cancer patients need to adapt to changes in routines and family dynamics. Often they bear increased responsibility, and may experience role reversal.[2,5] The reactions that children have to parents with cancer are varied, unpredictable and may be reflected in all developmental domains.[1] Children may experience depression, anxiety, low self-esteem, increased symptoms of stress, feelings of abandonment, fear of losing a parent, fear of developing cancer themselves, anger, withdrawal, difficulty at school, and increased somatic symptoms such as insomnia, abdominal pain and fatigue.[6,7] The true occurrence of these symptoms, however, is difficult to determine, and estimates vary between quantitative and qualitative studies. Furthermore, significant differences exist in the prevalence reported by children as compared to that reported by parents. Although there is a lack of long-term quality studies, it is evident that at least some degree of psychological impairment occurs in many children of parents with cancer. This impairment, however, appears to rarely be severe.[8]

As adolescents and primary-aged children are at different stages of development, differences may be seen in their psychosocial adjustment to a parent with cancer. Primary school-aged children are typically more concerned with the consequences of parental cancer on their day-to-day activities and hobbies, and may have significant difficulty expressing their emotions.[2] In contrast, adolescents are more cognitively and emotionally mature with a deeper understanding of death, and an increased ability to empathise. During adolescence, there is a developmental push to become more independent, autonomous, and form significant relationships outside of the family.[2] Developmental pressures during this time act to alter the adolescent's relationship with their parents. The drive to distance oneself from family is antagonised by the restrictions the illness imposes on the adolescent.[2] This conflict may make adolescents more vulnerable to impaired psychosocial adjustment, and may have a negative impact on their sense of individuality and identity.[2]

Studies have generally found that somatic complaints are increased in all ages of children of parents with cancer, but younger children show less emotional problems as compared to adolescents.[1] Many quantitative studies show that primary school aged children have no significant increase in emotional symptoms.[6] Conversely, qualitative studies show increased distress, fear and stress-response symptoms in primary school-aged children.[6] Furthermore, Visser *et al.* found that parents reported an increase in internalising behaviours such as anxiety and depression in their primary aged sons. It is suggested that young boys compared to young girls have a higher risk of developing internalising problems, possibly due to less mature social-emotional functioning.[7] Quantitative studies typically have not shown any difference in the behavioural development of

younger children as compared to controls, but the results of qualitative studies vary.[6–8] For example, different qualitative studies have reported withdrawal of younger children, increased family conflict, and increased supportive behavior in these children.[6] Due to the varied nature of these results, more research is required before conclusions about young children can be drawn.

A systematic review published by Osborn indicated an increase in self-reported and parent-reported internalising problems such as anxiety and depression in adolescents of parents with cancer.[3] This is supported by Huizinga *et al*. who indicated that adolescents aged 12–18 suffer from more emotional problems, symptoms of stress response and more somatic complaints than controls.[8] Visser *et al*. also reported increased emotional symptoms in adolescents.[6] A number of studies have suggested that adolescent daughters are more affected by parental cancer, especially with regards to psychosomatic and mood disturbances.[3, 6, 7] Caution, however, needs to be taken in interpreting this, as many studies had a predominance of mothers as the affected parent. It has been suggested by Visser *et al*. that this finding may be due to daughters experiencing increased responsibility for care taking and household chores during a parent's illness.[7] Another thought is that daughters, as compared to sons, tend to have stronger emotional connections with their mothers, and consequently take their mother's emotional burden on themselves.[7] Interestingly, Osborn found that methodologically strong studies show no significant differences in self-reported or parent-reported externalising problems such as aggression in adolescents as compared to controls.[3] This is supported by Visser *et al*. who indicate no difference in social and behavioural functioning in these adolescents.[6] Visser *et al*. conclude that parental cancer is more likely to cause internalising problems rather than externalising problems in affected children of all ages.[7]

The literature supports gender and age as key factors that can influence a child's psychosocial adaption to parental cancer, but other factors are less well understood.[8] There is little support for a relationship between the stage and severity of the cancer and the level of psychosocial impairment. Contrary to this, the intensity of the treatment regimen, such as the time between treatments and the necessity for chemotherapy may have some impact on a child's psychosocial function.[3,8] The time since diagnosis of cancer is apparently unrelated.[3,6] Osborn's systematic review indicates that poorer family cohesion, poorer communication and the child's role in the family prior to cancer onset may impact the prevalence of internalising emotional problems.[3] Visser *et al*. emphasised the benefit of open communication in a family to child adjustment when a parent is affected by cancer.[6] In general, adolescents appear to be well informed, whilst younger children are often misinformed or have false impressions of the illness.[6] This may be because parents lack guidance on how to talk to their child, want to protect their children from the reality of their diagnosis, or believe their child is too young to understand.[6,8] Studies, however, reveal the importance of communication to decrease stress and other psychological complications in children of all ages.[6,8] Although studies on other chronic illnesses indicate a relationship between parental depression and child function, little evidence exists for cancer. Osborn found that mothers who reported depression in themselves, reported more total problems in their children, though this may be due to differences in detection.[3] Visser *et al*. also suggest a positive correlation between parent and child psychological function.[6]

Understanding the relevant factors is key to identifying children at a high risk of psychosocial impairment, and may allow for the development of targeted interventions. Studies looking at child-centered interventions in parental cancer are mainly qualitative and have small sample sizes, therefore, larger and longer-term studies are required to further elucidate the effect of such interventions. These studies will not be reviewed formally in this article, however, are worth mentioning briefly. A systematic review by Niemela *et al.* summarised the current literature in this field.[4] Child-centered interventions allow children to share their feelings openly and develop a full understanding of the illness, whilst also teaching coping strategies and improving family communication.[4] Niemela *et al*. showed that children report positive experiences, less concerns and had lower depression scores with these interventions, although showed no change in the prevalence of depressive symptoms.[4] Parents and counselors reported children were less angry and more able to express their feelings.[4] The lack of studies and practices in this area may be a reflection of the limited evidence. In New Zealand, there is little specific support for the children of parents with cancer. The Waikato Hospice, and Leukemia and Blood Cancer New Zealand provide targeted support on their websites, but these services are limited. There is a current need in New Zealand to provide consistent support to children affected by parental cancer nationwide. At the most basic level, New Zealand health care providers must recognise that parental cancer has an impact on all family members, and consider the children when managing a patient with cancer. This is supported by UK's National Institute of Clinical Excellence (NICE) which calls for the evaluation of a family's needs as a whole and the provision of psychological care services where appropriate when managing cancer.[3]

CONCLUSION

This review describes the current understanding of the effect that parental cancer has on children of different ages. The high number of children with parents with cancer constitutes a major reason for investigating these effects further. Although the evidence is derived from small sample numbers and in parts is quite variable, it is becoming increasingly apparent that the psychosocial development of children of cancer patients is threatened by the diagnosis. Despite this, authors such as Visser *et al*. have concluded that there is an increase in negative emotional internalising behaviours in adolescents affected by parental cancer.[3] As the effect parental cancer has on children becomes clearer the clinicians must reflect this in their practice. The clinicians should consider the needs of the family as a whole by supporting open communication and promoting child wellness. Further research is required to determine significant risk factors for psychological impairment, to enable the identification of high-risk individuals and the development of targeted interventions. Despite significant need, New Zealand currently does not have standardised guidelines for family support resulting in heterogeneous and suboptimal results for families and children.

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A great sporting nation? Sport participation in New Zealand youth

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ABSTRACT

Sport is a key avenue to promote regular physical activity and health in young people. The study aim was to describe sport participation in New Zealand young people. A national cross-sectional survey of young people aged 5–24 years (n=2,503) was conducted. Use of time, demographic and anthropometric data were analysed for participants aged 10–18 years (n=1,308) to identify patterns of sport participation. Overall, 894 (68%) participants reported engaging in sport. Average daily participation was 48 minutes of sport and 153 minutes of moderate-vigorous physical activity; sport participation therefore accounted for 31% of moderate-vigorous physical activity by time. Sport participation was higher in males than females, in younger (10–14 years) than older (15–18 years) participants, and in Pacific young people than in other ethnic groups. Pacific youth reported the highest participation in team-based sports but the lowest participation in individual-based sports. There were gender, age and ethnic differences in the most popular sports. Overall, sport participation contributed considerably to daily physical activity. Females were particularly 'at-risk' for lower sport participation, and may benefit from targeted intervention. The popularity of sports differed among demographic groups, suggesting it is important to ensure a range of sports are accessible to young people.

INTRODUCTION

The World Health Organization recognises that "physical activity is a fundamental means of improving the physical and mental health of individuals".[1] In young people (aged 18 years or younger), regular moderate-vigorous physical activity (MVPA) has been shown to have modest positive effects on physical and mental health, including blood pressure, blood lipids, cardiovascular fitness and psychological well-being.[2, 3] Sport is a distinct domain of physical activity "aimed at expressing or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels".[4] Sport is a competitive, rule-governed activity that requires skill or effort, with primarily a leisure rather than work orientation[5]. International guidelines for young people recommend at least 60 minutes of MVPA most days, which includes participation in sport, as well as other forms of physical activity including occupational-based activity and active transport.[6-8]

Since the 1970's patterns of physical activity have changed in high-income countries, from being mainly work or transport related to being leisure activities, such as sport.[9] Therefore, sport participation is of increasing importance in determining an individual's MVPA and ultimately their health and well-being. One recent systematic review indicated a positive association between sport participation and children's physical activity levels, with children engaging in sport also more likely to maintain physical activity over time.[10] Sport participation *per se* has also been linked with a variety of health outcomes. In obese children, a recent systematic review indicated that sport participation was associated with improved body composition and fitness, though another systematic review indicated mixed results regarding the relationship between sport and obesity prevention.[10, 11] Moreover, young people who engage in sports tend to experience less anxiety and depression.[12] Another recent systematic review found that team sport in particular, was associated with improved health outcomes compared to individual activities due to the social nature of the participation.[13] Sport participation is associated with other positive health behaviours, for example abstinence from cigarettes and drugs, as well as providing opportunities for socialisation and the development of teamwork skills.[14–16] Finally, sport participation in young people may predict a high level of adult physical activity, but this finding has been inconsistent.[10, 17, 18] Demographic factors have been linked to sports participation. Low socio-economic status, being obese, being of an older age and being female are all related to lower sports participation.[5, 19, 20]

Variable	PAL (METs)			Sport (min/day)			MVPA (min/day)		
	n[1]	Mean[2]	SD[3]	n[1]	Mean[2]	SD[3]	n[1]	Mean[2]	SD[3]
All	1308	1.73	0.3	1308	48.0	57.6	1308	153.4	100.4
Gender									
Male	702	1.78	0.4	702	56.7	63.1	702	165.6	103.4
Female	606	1.66	0.3	606	38.0	48.7	606	139.2	94.7
Age group									
10–14 years	825	1.77	0.3	825	55.0	58.1	825	172.2	98.2
15–18 years	483	1.65	0.3	483	36.0	54.8	483	121.1	95.8
Deprivation									
I (least deprived)	275	1.73	0.3	275	49.3	55.5	275	148.0	95.8
II	264	1.72	0.3	264	48.7	58.1	264	158.1	98.2
III	276	1.72	0.4	276	45.7	52.7	276	149.9	103.1
IV	216	1.71	0.3	216	47.1	59.4	216	154.7	98.1
V (most deprived)	272	1.74	0.4	272	48.6	63.1	272	155.3	105.9
Area									
Urban	1099	1.73	0.3	1099	48.4	58.6	1099	153.5	101.4
Rural	209	1.73	0.3	209	45.8	52.4	209	152.7	95.1
Ethnicity									
Māori	248	1.77	0.4	248	49.7	67.4	248	169.6	108.4
Pacific	107	1.71	0.3	107	52.6	54.5	107	139.4	80.2
NZEuro/Other	952	1.72	0.3	952	47.0	55.2	952	150.6	99.8
Weight status									
Underweight	61	1.73	0.3	61	44.3	53.0	61	160.7	106.5
Healthy	787	1.73	0.3	787	48.6	57.9	787	154.9	102.3
Overweight	303	1.72	0.4	303	47.9	56.3	303	147.3	91.8
Obese	147	1.71	0.3	147	49.0	62.4	147	160.2	104.5

[1]*Number of participants in each category;*
[2]*Weighted mean estimate;*
[3]*Standard deviation of the mean*
MARCA – Multimedia Activity Recall for Children and Adolescents; METs – Metabolic Equivalents; mins – minutes; MVPA – moderate to vigorous physical activity; n – number; PAL – Physical Activity Level; SD – standard deviation.

Table 1: Self-reported daily participation in physical activity and sport (MARCA)

Research in New Zealand (NZ) young people has identified a large gap between sports interest and actual participation. For example, 47% of New Zealand females expressed interest in dance, whereas only 23% participated.[21] This indicates that interventions are needed to convert this interest into participation. Preliminary experimental evidence suggests that organised sport interventions are beneficial for health. In one small study, overweight young people aged 9–11 years (n=21) undertook a six month after-school soccer programme. The placebo group completed after-school meetings about nutrition. Positive results on BMI, total physical activity, MVPA and desire to continue soccer were found.[22]

To date, there has been no comprehensive description of use of time with respect to sport participation in NZ young people using nationally representative data. Description of current engagement, and the identification of groups 'at risk' for low sport participation will inform the development of interventions. Therefore, the aim of the present study was to describe sport participation in NZ young people aged 10–18 years. The specific objectives were to determine: (a) the extent of participation in sport; (b) the daily time (minutes) spent participating in sport and MVPA; (c) the average daily physical activity level (PAL); (d) the contribution of sport to meeting physical activity guidelines; (e) the popularity of team sports versus (vs.) individual sports; and (f) the most commonly-reported sports. Outcomes were examined by subgroups of interest (age group, gender, deprivation level, area [urban vs. rural], ethnicity and weight status).

METHODS

Design and participants

A national representative cross-sectional survey of NZ young people aged 5–24 years was conducted between September 2008 and May 2009. The survey was conducted according to the ethical principles in the Declaration of Helsinki and was covered by Statistics NZ Tier 1 ethical approval. Written consent and/or assent was obtained from all participants and their parent, depending on the age of the participant. Sport participation outcomes for participants aged 10–18 years are reported here. This subset of participants was selected for the description of sport engagement in a group at a similar life and developmental stage, and for comparison with international data.

A complex survey design involving stratified multi-stage sampling was used, with meshblocks (a defined geographic area) as the primary sampling unit. Within each meshblock, eligible households were identified and asked to participate. One young person was randomly chosen from each eligible household. The overall response rate was 55%, calculated as the total number of complete interviews divided by the total number of eligible households plus the estimated number of non-contact households that were eligible (i.e., estimated unobserved eligible). A total of 2,503 young people aged 5–24 years participated in the survey, which consisted of

18.8% Māori (indigenous population), 9.6% Pacific, 12.9% Asian and 71.4% NZ European. This is representative of the ethnic composition of the NZ population.[23] A total of 1,315 participants were aged 10–18 years.

Procedure

Data were collected during a face-to-face home visit and a subsequent telephone interview conducted 7–14 days after the home visit. During the home visit, height and weight were measured and data on demographics, self-reported physical activity (including sport participation) and sedentary behaviour were collected. During the telephone interview, additional self-reported data on physical activity and sedentary behaviour were collected.

Measures

Anthropometry

Height was measured to the nearest 0.1 cm with a stadiometer (Seca, 214, Hamburg, Germany) and weight was measured to the nearest 0.1 kg with a digital scale (Tanita, UM-070, Illinois, US) according to standard procedures.[24] BMI was calculated from the weight (kg) divided by height (m) squared. International Obesity Task Force classifications of body size were derived.[25]

Self-reported sport participation

Self-reported sport participation was measured using the Multimedia Activity Recall for Children and Adolescents (MARCA).[26] The MARCA is a computerised use-of-time tool. All daily activities (including sleep) for the previous 24 hours are retrospectively recalled in chronological time slots of five minutes or more. Participants chose from a list of approximately 250 activities, each linked to an energy cost expressed in Metabolic Equivalents (METs) taken from existing compendia in young people and adults.[27, 28] For most sports, participants rated the intensity of the activity as 'light', 'medium' or 'hard'. The MARCA has been shown to have adequate psychometric properties.[26, 29] For the current survey up to four days of recall per participant were completed (two days at the home visit, and one to two days during the telephone interview).

"Sport" was defined as activities that involved physical activity, were rule-governed and competitive in nature.[5] In producing the final sport activity list, comparisons were made with a 2009 Australian survey that also used the MARCA, as well as the 2007/2008 Sport and Recreation NZ national survey.[5, 6] Some activities were difficult to classify, for example, dance and and surfing were included, but cycling was excluded as it was considered to be primarily a mode of transport rather than a sport. The MARCA data did not allow for differentiation between "organised" and "non-organised" sport. For example, both a formal, competitive game of soccer and a game in the backyard were coded as "soccer" on the MARCA.[5] Sub-groups were created for "team sports" and "individual sports". A sport was defined as an individual sport if it was possible to play as an individual, otherwise it was classified as a team sport. For example, tennis was coded as an individual sport even though it can be played both individually and in pairs. MVPA was defined as any activity at greater than or equal to three METs.

The final outcomes of interest derived from the MARCA were:

- The extent of participation in sport (number of participants reporting engagement)
- Total daily time spent in sport (minutes/day)
- Total daily time spent in MVPA (minutes/day)
- Daily PAL (METs)
- The contribution of sport to meeting physical activity guidelines
- Number of participants reporting engagement in a team sport
- Number of participants reporting engagement in an individual sport
- Number of participants reporting engagement in each sport (e.g., rugby, netball, tennis)
- School days and non-school days were weighted equally as children spend approximately one in two days in school.[5]

Statistical analysis

Statistical analyses were performed using IBM SPSS statistics version 19 (IBM corporation, New York, United States of America). Descriptives (mean, standard deviation [SD]) were calculated for time spent in sport and MVPA, and percentages were calculated for engagement in different sport types.

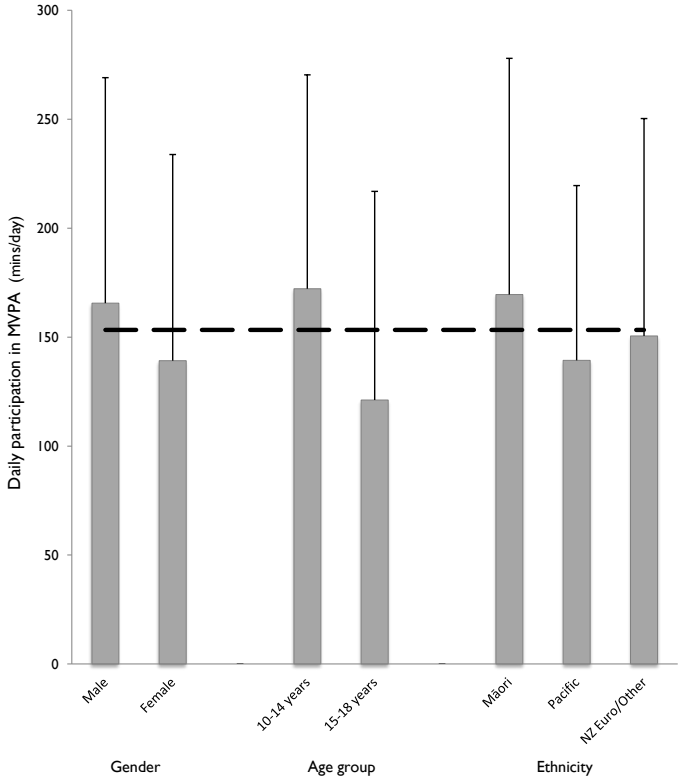

Figure 1. Self-reported daily participation in MVPA in subgroups of interest (MARCA)

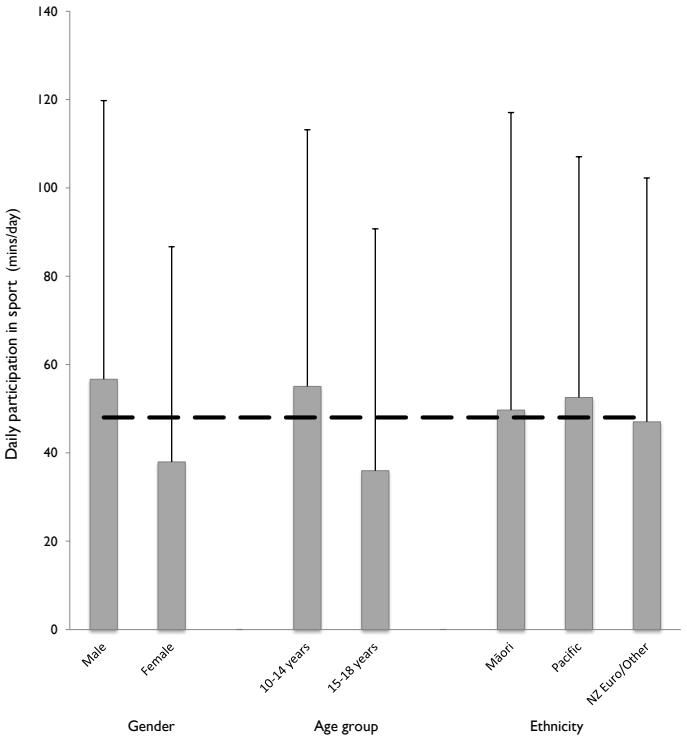

Figure 2. Self-reported daily participation in sport in subgroups of interest (MARCA)

Rank	All participants	Males	Females	10–14 years	15–18 years	Māori	Pacific	NZ Euro/other
1	Soccer	Soccer	Dancing (general)	Soccer	Soccer	Trampoline	Rugby union	Soccer
2	Trampoline	Rugby union	Trampoline	Trampoline	Dancing (general)	Basketball	Rugby league	Trampoline
3	Basketball	Basketball	Swimming laps	Basketball	Basketball	Rugby union	Touch football	Basketball
4	Rugby union	Cricket	Soccer	Rugby union	Rugby union	Soccer	Basketball	Cricket
5	Cricket	Trampoline	Netball	Cricket	Touch football	Touch football	Soccer	Dancing (general)
6	Dancing (general)	Touch football	Basketball	Swimming laps	Cricket	Hand tennis	Hand tennis	Swimming laps
7	Swimming laps	Hand tennis	Cricket	Dancing (general)	Lifting weights	Swimming laps	Volleyball (court)	Rugby union
8	Touch football	Rugby league	Dodgeball	Touch football	Rugby league	Dancing (general)	Dancing (general)	Touch football
9	Hand tennis	Swimming laps	Touch football	Hand tennis	Pool/billiards/snooker	Rugby league	Cricket	Hand tennis
10	Rugby league	Dodgeball	Hand tennis	Dodgeball	Swimming laps	Netball	Trampoline	Netball
11	Tennis	Softball	Softball	Netball	Volleyball (court)	Dodgeball	Netball	Dodgeball

MARCA – Multimedia Activity Recall for Children and Adolescents

Table 2: Self-reported 11 most popular sport activities by frequency (MARCA)

Demographic sub-groups were defined including gender, age, deprivation, area (rural vs. urban), ethnicity and weight status. Deprivation level was defined according to the 2006 NZ Deprivation Index (I=least deprived, V=most deprived).[30] Ethnicity was evaluated using prioritised ethnicity. International Obesity Task Force criteria were used to define weight status from BMI.[25] Statistical comparisons of sports participation among the demographic sub-groups were performed using analysis of variance. The response variable was minutes per day of sport, which was log transformed due to a non-normal distribution. The comparisons for deprivation, area (urban vs. rural), ethnicity and weight status were adjusted for age and gender. The alpha was set at 0.05.

RESULTS

In the total survey population aged 5–24 years, 2,493 (99.6%) participants provided valid MARCA data, among whom 1,308 (52.5%) were aged 10–18 years and included in this analysis. Average daily time spent in sport and MVPA, and average daily PAL, are shown in Table 1. Overall, 894 (68%) participants reported engaging in sport, for an average of 48 (SD 57) minutes per day. Reported engagement in MVPA was 153 (SD 100) minutes per day, therefore sport participation accounted for 31% of total daily MVPA by time. The time spent in MVPA and sport in subgroups of interest is shown in Figure 1 and Figure 2.

For sport, MVPA and PAL males had higher reported levels than females. Males performed 19 minutes more sport and 26 minutes more MVPA per day than females. Therefore, the bulk of the difference in daily MVPA between genders (71%) was attributable to differential engagement in sport. The gender difference in sport participation was statistically significant ($F(1, 1306)=26.70$, $p=0.00$).

Younger participants (10–14 years) reported greater engagement in sport and MVPA, and had higher PALs than older participants (15–18 years), though the difference between groups for sport participation was not statistically significant ($F(1, 1306)=0.340$, $p=0.560$). The difference between the age groups for sport participation and MVPA was 19 minutes per day and 51 minutes per day, respectively.

Of all ethnic groups, Pacific young people reported the highest engagement in sport (53 minutes per day), but the lowest MVPA (139 minutes per day). The contribution of sport participation to total daily MVPA for Pacific young people was 38%, compared to 29% in Māori and 31% in NZ European/Other. However, the differences between ethnic groups for sport participation were not statistically significant ($F(1, 1306)=0.845$, $p=0.469$).

There was no clear gradient in sport, MVPA or PAL across deprivation status, area (urban vs. rural) and weight status. There were no statistically significant differences in sport participation in any of these demographic groups.

Participation in both team and individual sports was higher in males compared to females and younger participants (10–14 years) compared to older participants (15–18 years), consistent with the pattern of engagement in sport overall. Of all ethnic groups, Pacific young people had the highest engagement in team sports (72%) but the lowest engagement in individual sports (29%). There were no other clear differences across different demographic groups.

In all participants aged 10–18 years, the 11 most commonly reported sports in order were: soccer, trampoline, basketball, rugby union, cricket, dancing, swimming laps, touch football, hand tennis, rugby league and netball. Gender, age and ethnic differences in the most popular sports were found (Table 2). Rugby union and rugby league were more popular in males, whereas dancing and netball were more popular in females. Trampoline, dodgeball and netball were more popular in younger participants (10–14 years), whereas lifting weights, rugby league, pool/billiards/snooker, swimming laps and volleyball were more popular in older participants (15–18 years). Rugby union and rugby league were popular in Pacific young people.

DISCUSSION

Sport participation and physical activity is critical for the physical, mental and social well-being of young people.[5, 10, 13] This study indicates that most (68%) NZ young people aged 10–18 years report engaging in sport, though participation varied by gender, age and ethnicity. Sport was a key component of total MVPA, and participants reported meeting and exceeding recommended guidelines for physical activity.[6]

Females were identified as an 'at-risk' group for lower MVPA and sport participation, with a similar trend found for older (15–18 years) participants. These 'at-risk' groups are consistent with previous research.[5, 19, 20, 31] Participants reported engaging in 48 (SD 57) minutes of sport each day, similar to the 43 (SD 45) minutes per day found in an Australian survey that also used the MARCA.[5] However in the current study, sport participation accounted for 31% of total daily MVPA by time, which was markedly lower than the 45% reported in the Australian study.[5] In contrast to previous studies, there was no association in this study between sport involvement and deprivation level, area and weight status.[5, 19, 32] However, these findings have not been consistent, with other studies reporting no differences in sport participation by deprivation and area.[33] Also, the most popular sports were very similar to those found in Australia.[5]

The strengths of this study include the use of a large, representative sample of NZ young people. In addition, the MARCA allows for the collection high resolution information, and allows sport to be placed in the context of overall MVPA and use of time. Several limitations were also identified. Firstly, the cross-sectional nature of the study did not allow for causal effects and change over time to be examined. There was a 45% non-participation rate, thus there is the possibility that participants

differed from non-participants even though the study population was representative of NZ by ethnicity, age and geography.

Data from a subgroup of participants aged 10–18 years were analysed rather than the total sample. We chose to exclude those aged 5–9 years as their recall was done differently to older participants. For this age group, parents gave a proxy report of activities the child carried out whilst under direct parental supervision only. Many opportunities for sport participation arise at school and after school. Therefore, a significant amount of sport participation may be missing from these proxy recalls, and they were not comparable to the recalls of older participants. Furthermore, those aged 19–24 years were excluded as it was felt the life context of these participants, particularly in regard to sport participation, was different to 10–18 year olds who were mostly still at school with access to school sport opportunities.

Further, issues relating to methodology of the MARCA warrant comment. Due to its self-report nature, the MARCA is susceptible to over-reporting of length and intensity of physical activity. The estimate for MVPA was 153 minutes per day in the population, which far exceeds recommendations, and suggests this type of bias did occur. Despite these limitations, the MARCA psychometric properties have been shown to be sound.[26, 29]

In the analysis, assumptions were made from MARCA data which may have influenced the results. The MARCA is unable to differentiate between a casual game of soccer and a formal, organised game (both are reported as "soccer"). Thus, sports which are easy to play in a park or backyard are likely to be reported more, even though the context of these games may often be informal. Even though sports such as trampoline and lifting weights are likely to be hobbies rather than rule-governed sports, they were included in the sport list as it was possible to do them competitively. Similarly, sports that could be played as both an individual and as a team, such as tennis and swimming laps, were coded as individual sports rather than team sports. This may have led to an over-representation of individual sports. A number of sports are season-specific, and as the survey was carried out in spring, summer and autumn, it is likely that winter sports were under-represented. Also, young people are generally more active in summer compared to winter months.[33]

The results of this study highlight opportunities for interventions to increase sport participation in young people. In particular, females indicated lower daily MVPA and sport participation. In addition, the average MET value for the 11 most popular female sports (7.1 METs) was lower than in males (7.5 METs), indicating that females engage in less vigorous forms of sport as well as less sport overall. In this survey, most of the difference in MVPA participation between males and females (71%) could be attributed to a differential engagement in sport. Encouragement of sport should be targeted specifically to females to prevent insufficient physical activity and consequential health issues.

The most popular sports differed among gender, age and ethnic groups, thus it is important to ensure a wide range of sports are accessible to young people. For example, four of the top five sports in boys were team sports, whereas only two of the top five sports in girls were team sports (Table 2). In addition, Pacific young people had the highest participation in team sports but the lowest MVPA and participation in individual sports. This indicates that team sports may be more appropriate for this group, and agrees with Pacific cultural values, such as a group (rather than individual) societal orientation and collective involvement. Group sports, such as small-sided games, have been shown to be a promising intervention for improving the health and cardiovascular fitness of Pacific adults.[34]

In conclusion, a national survey of NZ young people indicated that sport participation is an important contributor to daily physical activity. Females were particularly 'at-risk' for lower sport participation, and may benefit from targeted intervention. The popularity of sports differed among demographic groups, suggesting it is important to ensure a range of sports are accessible to young people.

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Global refugee crisis: what can you do to help?

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Tash is currently a fourth-year medical student at the University of Otago, based at Dunedin Hospital. Recently Tash attended the Global Health Conference in Newcastle where one of the key focuses was refugee health. Some of the things she enjoys doing in her free time include tramping and running. She is also involved with the Otago University Medical Students Association (OUMSA) in Dunedin and is the incoming chair of the student subcommittee for the New Zealand Rural General Practitioners Network (NZRGPN).

We are facing a global crisis. War and extreme poverty are forcing productive and capable members of society to leave their homes for fear of violence and/or starvation. These are people who have to leave everything behind: their homes, their belongings and often their relatives. Imagine running from the town in which you have built your life, taking only what you can physically carry and heading toward the unknown. It is not a decision anyone would make lightly. Stay and die, or leave and perhaps live. It is not even a choice. It is survival. The journey ahead may be long and treacherous. It may cross war zones. It may end in refugee camps, detention centers or death.

This report covers current issues faced by people seeking asylum in Australia and New Zealand (NZ) and what we can do to help. Every healthcare worker, and indeed, every resident of the country should make it a priority to understand these issues as the current global climate has ensured that every person will be affected in some way.

Hmm, I've heard about the crisis. But isn't it one of the big issues that people are trying to cross into other countries illegally? Why don't they wait to be processed in due course?

The biggest refugee camps tend to be in countries neighbouring those in conflict.[1] These countries are often dealing with their own issues and struggle to provide for those seeking asylum. This means food shortages, a lack of healthcare and education and high levels of crime.[1-5] In addition, the refugee status of people seeking asylum is recognised by the host country but often they are not extended the same rights as citizens.[6] They cannot get jobs. They cannot educate their children outside the camps. Travel is restricted, and being caught breaking any of these rules means being thrown in prison. Thrown in prison for daring to seek freedom from violence. Sounds unbelievable? Unfortunately, this is the reality faced by many refugees.

Worldwide there are 65.3 million displaced people.[7] Let me repeat that. Around the globe, 65.3 million people have been forced from their homes. New displacements are occurring at a rate of 33,972 per day.[7] That is equivalent to the entire population of Ashburton fleeing their homes. Every day. Over 50% of these people are children under the age of 18, and nearly 100,000 are unaccompanied.[7] Displacement rates are also increasing exponentially, with the number of people needing urgent resettlement increasing by 67% since 2013.[8]

In response to this dire need there has been pressure on host countries to increase their refugee quota. NZ included. In 2016, the NZ government announced an increase in their refugee quota from 750 to 1,000.[9] The first increase in 30 years and a step in the right direction. Yet even with this increase, NZ is placed 87th for refugee intake per capita.[7] We are placed far behind Australia who take five times more refugees per capita, despite their increasingly closed border tactics.[7] We can do better NZ!

Globally there are 133,641 places offered annually to people seeking asylum.[7] That sounds like a lot right? But let us put it in perspective. If we take into account the current number of refugees (19.5 million) and the current rates of new displacements, a person in a refugee camp who applies for asylum can expect to wait their entire life for placement in a host country.

So we offer places in refugee camps, where physical and sexual violence are commonplace. Where we leave men, women and children unsafe. Where they cannot work or expect to be able to educate their children legally. We tell these people to be patient, that many countries are taking refugees and you will be offered a place in time. Yet the statistics tell us they are much more likely to die before being offered a placement.

Despite all I have described so far, there is a glimmer of hope for some of those displaced. There is the option to pay a trafficker; to get on an old and rundown boat, overcrowded to a point where it is only just afloat. It is a boat that will head to the shores of the most desirable countries. It might not make it. But to stay is hopeless. If it was you, and it was your family living in these conditions what would you do? Would you take the chance, however risky, to find asylum? These are the 'Boat People' that end up on the shores of Europe or Australia. The European Union (EU) does not turn boats back. This policy is a relic of World War II where to turn back a boat of Jewish

people meant almost certain death.[10] Unfortunately, Australia takes a different stance (more on that later) despite being a signatory to the 1951 Refugee Convention which offers protection for refugees.[11]

Wait! Why don't we just take more refugees?

One of the major arguments against increasing the quota is that we do not have the resources to support more people. In NZ we already have a housing crisis in many of the main centers.[12] We have long waiting lists for surgery and increasing inequality widening the disparities in healthcare access.[13,14] If we are failing our own citizens how can we bring more to this country? But if we are falling back on the 'we cannot afford it' argument then how is it possible that 86% of the world's refugees are hosted by developing countries?[8] Where is our sense of moral responsibility? Many New Zealanders do not realize that life in this country brings safety displaced people can only dream of; a new reality that children of refugee camps cannot even imagine.

You mentioned Australia? What's happening in Australia?

Australia has recently hit the media for their horrific treatment of refugees in detention centers.[15,16] Their response? Peter Dutton, Australian Minister for Immigration, told media the leaked Nauru files (which details routine physical, sexual and psychological abuse of people detained at the Nauru center) were untrue.[15] There are also gagging orders, in the form of the Border Force Act 2015 on those working in the camps, preventing them from speaking out about what those in their care suffers at the hands of the Australian government.[17]

Some brave individuals such as Professor David Isaacs and Alanna Maycock have made public their experiences.[16,18] They do this to ensure the public is aware of the atrocities that are being committed by workers on the Australian payroll. They risk prosecution because they know the public will be outraged. And they should be. Yet we stand by as children commit suicide because they can see no future. When men are setting themselves on fire because they have literally become forgotten people. The response? The country's top politicians write it all off as collateral damage and tell people not to get 'misty-eyed' about it.[19] How is this in any way ok and what can we do about it? We need to keep speaking out. And we need to continue to support the heroes that do.

Top human rights lawyers David Manne and Julian Burnside have offered Pro Bono defense of individuals brought to court in breach of the Border Force Act.[18] They know the Australian Government will hesitate to prosecute because to do so would result in public testimony. Respected individuals who have sworn an oath to the service of humanity could stand in the witness box and report on all the abuses in these detention centers. They know the world will be ashamed that a developed country, in the 21st century, can treat human beings so poorly.

This sounds terrible. What can I do to help?

If you are still reading hopefully that means you are feeling indignant about our treatment of people coming to us for protection. The next stage is to harness this anger and do something about it. Doctors have a strong voice with lawmakers and with the community, change can happen when we unite.

- Find out what activities or protests are happening in your area and get involved (contacting MSGA can be an excellent way to do this).
- Write to your local Members of Parliament (MP) in support of an increased refugee quota.
- Speak about the refugee crisis with your friends, family and community. Many people do not understand the issues and this is an area where you can have a significant impact.
- Volunteer with the Red Cross or other organisations involved in the resettlement of refugees. Understanding the healthcare system in NZ (accessing care and funding for care) can be difficult for refugees.

What about in the clinical setting?

Health professionals and their students will inevitably find themselves working with refugees in some capacity throughout their careers. There are a number of ways we can prepare ourselves for working with resettled people.

I would highly encourage reading the Refugee Healthcare Handbook for Health Professionals, published by the Ministry of Health.[20] This book is incredibly useful and its content extends from the issues which lead to people seeking asylum to all the healthcare issues specific to one's country of origin. However, the current edition of the handbook does not cover the Syrian conflict so it is worth reading up on this separately, especially as a number of our new refugees will be arriving from Syria. The funding pathways and exactly what is funding for each class of refugees is explained in detail, as well as the healthcare process (including vaccination catch ups) that they go through on their way to their new homes.

Most countries will reject refugee applications if there is evidence that the new citizens will increase burden on the healthcare system. New Zealand is unique in that they prioritise refugees that have current health issues.[20] This means family doctors will need to be clear in their communication to ensure patients are compliant with medications and treatments which may not have been available to them previously.

The Red Cross New Zealand is highly involved in resettlement of refugees and can assist in many ways. This includes organising transport to and from healthcare visits, providing translation services and assisting patients in picking up prescriptions.[21]

When speaking with refugees or any new immigrant from an area of conflict, it is important to ensure that they are comfortable disclosing health information. Often the previous healthcare assessments they had were related to their application for asylum. Therefore, at the start of the appointment it should be made clear that this consultation is completely separate to their application, and reassure them that the information will be held in confidence and anything discussed will in no way impact their refugee status.

Funding for the appointment should also be addressed early on. Is this or any subsequent treatment likely to be covered by the healthcare system or will the patient have to fund them? More information on what is covered is available in the Refugee Healthcare Handbook and online.

Can I ask about their past?

Often refugees have a history of psychological trauma of interest to the healthcare professional. This raises a couple of points. One, is the information actually relevant to the presenting complaint or not? And two, is this the ideal context for discussion of this history? The patient file from the refugee processing center will usually have information stating previous exposure to trauma including torture, sexual assault or psychological injury. Knowing this background may be important but knowing the exact details often will not necessarily add extra value. Keep in mind that asking the patient to relive their trauma may cause undue stress. Although screening for Post-Traumatic Stress Disorder (especially in children) should be undertaken, a psychologist may be the best candidate for this as they also have the tools for intervention.[22] Waiting for the psychology consultation also reduces the number of retellings the patient has to go through. This is particularly important if one's cultural background may deem talking about past trauma not acceptable.[23]

Although this report has only skimmed the surface of the issues, there is a wealth of information available online. Hopefully you agree by now that it is worthwhile improving your understanding of the refugee journey. The websites for Amnesty International and the United Nations High Commission for Refugees are excellent places to start. Share your thoughts with those around you. Become an advocate for refugees and displaced people because no one deserves the treatment that they are routinely suffering.

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Collateral damage of an intelligent mind

Jake Benson
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Jake is a 21 year old, third-year medical student at the University of Auckland, embarking on his first year as a clinical student at Waikato Hospital in 2017. He endeavours to approach this next stage with an open-mind as he continues to explore the range of medical disciplines. When he is not studying, you will find him procrastinating by re-watching House episodes, while avidly fighting to justify that their medical-relevance qualifies them as a learning resource.

This poem was inspired during our weekly small-group activities as part of the University of Auckland MBChB curriculum, where we were introduced to the concept of Mindfulness and tasked with reflecting on our own well-being in a 'SAFE-DRS Journal'. Our first entry to the journal was related to Changing Self-Awareness and Behaviour, our second about Health Behaviour Change and our final entry focused on Stress and Mind-Body Connection.

Starting with a stimulus,
my stress response begins,
strength oozing on the outside,
fragility within.

A once free flowing mind,
threatened by fixation,
anything irrelevant,
forced on vacation.

Palms begin to sweat,
heart begins to race,
my state is free to see,
with this crimson glowing face.

Sun rays diffuse,
and are then made small,
problem remains,
settling long-haul.

Behaviours change,
take a turn for the worse,
diet and exercise,
in the back of a hearse.

I know that I'm vulnerable,
thoughts run rancid,
small lump on my skin,
and I'm dying of cancer.

I am slowly evolving,
mechanisms to cope,
jotting obsessive thoughts,
gives me some hope.

When down on paper,
irrationality exposed,
I see for myself,
molehills misdiagnosed.

My minds got me far,
I never want to be wordless,
so for that I'll keep working,
on scratching the surface.

Emancipating my mind,
a transient state of Zen,
waiting for a thought virus,
to inoculate again.

IMreasoning podcast

Dr Art Nahill and Dr Nic Szecket

James Chancellor
6th Year Medical Student
School of Medicine
University of Auckland

James is interested in malignant haematology and medically unexplained physical symptoms. He enjoys hiking, especially with diverse company.

The IMreasoning podcast (IM standing for internal medicine) is the most insightful, emotionally-stirring and entertaining podcast that I have listened to (and I have dabbled in an eclectic array of podcasts). Dr Art Nahill and Dr Nic Szecket release a monthly IMreasoning podcast episode that will keep you captivated throughout, and finish with you wanting more. The case examples in their podcasts are comparable to a real life episode of House; only these physicians understand the virtue of modesty and have a much more rational approach to patient management.

The hosts of this audible sustenance, Dr Art Nahill and Dr Nic Szecket, are two General Physicians based at Auckland City Hospital. Both Art and Nic trained in North America, completing medical school at the University of Massachusetts Medical School and McMaster University in Hamilton, Ontario respectively. Art completed his internal medicine training at the Harvard-affiliated Mount Auburn Hospital and Nic at the Toronto General and Mount Sinai Hospitals. They now both work at Auckland City Hospital and have a passion and a talent for clinical teaching at all levels of medical training.

Their discussions mainly focus on the clinical reasoning behind the everyday decisions made by hospital doctors. They compare the difference between fast, type one or intuitive reasoning, and slower, type two or analytic reasoning and the importance of both of these cognitive processing strategies in medical interpretation and decision-making. They emphasise the importance of the differential diagnosis as being central to accurate, and therefore appropriate patient care.

Although doctors like to think they are neutral, rational beings, Dr Nahill and Dr Szecket reveal that in fact all have 'cognitive dispositions to respond' or potential biases that they fall prey to when confronted with an illness script. Being aware of these potential biases in everyday practice may help doctors to avoid diagnostic errors that sometimes follow.

While being incredibly astute physicians, Dr Nahill and Dr Szecket aren't afraid of expressing their vulnerability by admitting their mistakes, and doing cognitive autopsies or critical reflections on patient cases in which the outcomes have been suboptimal, negatively impacting both patient and doctor. In contrast to these confessions they also have a segment called 'Stump the Chumps' in which they attempt to solve a diagnostically challenging case presented to them by a medical registrar. However, they have neither been stumped nor have they exhibited any signs or symptoms of being 'Chumps.'

Lately, they have challenged the entire fabric of Western medical practice and admit to the embarrassing limitations of doctors' clinical reasoning. They emphasise the need for medicine to shift from the traditional and out-dated approach to diagnosis and management to one that incorporates artificial intelligence or the collective brainpower of multiple doctors through the use of evidence-based, computer-calculated, problem-knowledge couplers or a collaborative physician database (e.g. The Human Diagnostic Project). They aren't proposing that doctors will become obsolete but rather that they work with computer systems and 'big data' to optimise patient diagnosis and tailor specific and appropriate care.

Overall IMreasoning is a thought-provoking, entertaining and educational podcast that I highly recommend to any medical student or practising doctor. Furthermore, their intro music is so groovy you can't help rocking out whenever it plays.

Behind the Knife: The Surgery Podcast

Kevin Kniery, Jason Bingham, John McClellan, Scott Steele

Cameron Wells
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Cam is a medical student at Waikato Hospital, who enjoys surgery, research, and attempting to find the best coffee in the city. He will be taking a break from his medical studies in 2017 to pursue a BMedSc(Hons) degree.

Behind the Knife is a podcast which aims to provide an in-depth and "behind the scenes" look at a broad range of surgical topics, dissecting the interesting, controversial and humanistic sides of surgery. Kevin Kniery, Jason Bingham, John McClellan, and Scott Steele host a myriad of high-profile guests, ranging from giants of surgery to up-and-coming surgeons at the cutting-edge of their craft. Episodes are published weekly, ranging in duration from half an hour to an hour, usually taking the form of an interview discussion with one or more guests.

The podcasts strike a great balance between clinical, academic, and other aspects of surgery. I was amazed by the wide range of specialties, covering Trauma, Fetal, Military, and Global Surgery and topics from "Failing Forward: A Poor Career Decision and How I Recovered" to "Stuff Surgery Interns Should Know" to "#ILookLikeASurgeon: Thoughts on diversity in medicine". A particular highlight for me was an interview with Melina Kibbe (Editor-in-Chief of JAMA Surgery), titled "The Art of Publishing", discussing surgical research and how to write a manuscript for an academic journal.

The podcast features some of the top surgeons in the world, including Kenneth Mattox, inventor of the Mattox manoeuvre, and Steven Wexner of the Wexner Incontinence Score. There is certainly no shortage of role models, with Justin Dimick (Past President of the Association for Academic Surgery) being particularly inspirational with his presentation titled "The Rookie Advantage", examining the potential embodied in young surgical researchers and their contributions to academic surgery.

One of my favourite parts in each episode was the "Final 5" questions. In this section, the guests reveal a few interesting things about themselves, including their favourite operating room music, hidden talents, and their most memorable trip or vacation. The Final 5 provided an alternate perspective on the lives of many of the distinguished guests, who are so well known for their surgical achievements, but are also incredibly well-rounded people.

A possible downside is that Behind the Knife's primary audience is surgical residents and attendings. Because of this, medical students may find that some of the discussions are beyond the level usually expected of them. While this may be a deterrent for some students, it also provides an opportunity for those who are motivated to augment their surgical knowledge and skills.

In general, medical students often neglect podcasts as a learning tool for medical students, but in my experience they can be extremely valuable. Behind the Knife is free, and easily accessible on a smartphone, meaning episodes can be listened to whenever is convenient. It was great being able to listen to episodes during my morning or evening commute, in between lectures or tutorials, or just to fill in short gaps during my day at the hospital. Being a visual-kinaesthetic learner, I found I often needed to take notes to retain information, though podcasts would be ideal for those with an auditory-predominant learning style. Finally, while podcasts such as Behind the Knife shouldn't be the only resource medical students use to study, they are certainly a helpful adjunct for those wanting to extend their learning beyond that of the regular curriculum.

Would I recommend this podcast to other medical students? It depends on your background surgical knowledge. Preclinical students or those students in need of a surgery primer should listen to a podcast aimed specifically at students (such as Surgery 101). Behind the Knife is a great option for those motivated students aiming to pursue a surgical career and supplement their learning.

In conclusion, Behind the Knife will be remaining on the short list of podcasts I subscribe to, and I look forward to listening in on their future episodes. I also hope to see more of our New Zealand surgeons featured in episodes at some stage in the future.

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