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Exercise physiologists: essential players in interdisciplinary teams for noncommunicable chronic disease management

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Abstract: Noncommunicable diseases (NCDs), such as obesity and type 2 diabetes mellitus, are a growing public health challenge in Australia, accounting for a significant and increasing cost to the health care system. Management of these chronic conditions is aided by interprofessional practice, but models of care require updating to incorporate the latest evidence-based practice. Increasing research evidence reports the benefits of physical activity and exercise on health status and the risk of inactivity to chronic disease development, yet physical activity advice is often the least comprehensive component of care. An essential but as yet underutilized player in NCD prevention and management is the “accredited exercise physiologist,” a specialist in the delivery of clinical exercise prescriptions for the prevention or management of chronic and complex conditions. In this article, the existing role of accredited exercise physiologists in interprofessional practice is examined, and an extension of their role proposed in primary health care settings.

Keywords: interdisciplinary team, obesity, type 2 diabetes mellitus, exercise physiology, accredited exercise physiologist

Introduction

Noncommunicable chronic disease (NCD) is a global health crisis, with physical inactivity a leading behavioral risk factor common to obesity, type 2 diabetes mellitus, cardiovascular disease, and metabolic syndrome.¹⁻⁴ Obesity has reached epidemic levels in Australia, with approximately 60% of the adult population overweight or obese.⁵ Management of NCD is a growing public health challenge, with Australian primary health care systems designed to deliver acute, symptom-driven care, while chronic disease management is arguably more resource intensive. Australian primary health care involves four main types of services and providers: 1) general practice, 2) community health services, 3) private allied health providers, and 4) indigenous community-controlled health services. General practice is the predominant provider of primary health care, with general practitioners essentially the gatekeepers to a range of other health services. However, an effective framework for lifestyle modification and collaborative interdisciplinary care in primary health settings for chronic disease management is lacking.^{6,7}

For example, a significant practice gap exists in the delivery, maintenance, and follow-up of patients for whom lifestyle modification has been prescribed.⁸ General practitioners may provide excellent advice on physical activity and dietary changes, but are less likely to provide tailored exercise or ongoing support given a lack of time, understanding of the physiological and metabolic responses to exercise, or

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understanding of patients' readiness to change behaviors.⁹ Lifestyle intervention is underemphasized in the undergraduate training of general practitioners and other health professionals, as are interprofessional practice and collaboration.^{9,10} Increasingly, the demands placed on physicians' time and a lack of training in the area may limit their ability to effectively counsel patients on the benefits of exercise and comprehensive lifestyle risk-factor modification.^{3,6}

The burgeoning evidence base for both the benefits of physical activity for health and physical inactivity as a risk factor for NCDs^{11–13} underpins support for the revision of NCD models of care. Clinical programs should have a greater emphasis on lifestyle modification incorporating “Exercise is Medicine” principles,¹⁴ as physical activity and exercise have traditionally been coupled with other public health agendas and often not fully recognized as a stand-alone, public health priority.² The introduction of “accredited exercise physiologists” (AEPs) – specialists in exercise interventions and physical activity education – into primary health care settings has the potential to greatly enhance existing health care delivery. This can be achieved through interprofessional practice, referring to a clinician whose role is exclusively in physical activity and exercise prescription to ensure tailored and appropriate advice, and creating a focus on behavior change as the core component of all clinical programs for both the prevention and management of NCD.¹⁵

The value of the interdisciplinary team

Numerous benefits of interdisciplinary teams in primary health care settings have been cited, including increased learning and development of health care professions, better utilization of resources and improved cost-effectiveness, and improved self-management and health outcomes for patients.^{10,16} Interdisciplinary team care, which advocates lifestyle modification for chronic disease and supports high levels of self-efficacy and self-management in patient cohorts, has been associated with higher levels of treatment compliance and improved health outcomes.^{7,17,18}

To a certain extent, interdisciplinary teams are a result of increasing levels of specialization, although while individuals of the team may be specialists, the overall knowledge is broader and interprofessional collaboration is stronger.¹⁶ Care provided by interdisciplinary teams is becoming increasingly complex and often challenging, necessarily requiring the application of a specialized body of knowledge.⁸ Unfortunately, physical activity and exercise advice provided in standard care practice is often the least

comprehensive component of care. Currently, no single clinician is dedicated to providing exercise, physical activity, and health education,⁸ and recommendations made to patients are based on the *National Physical Activity Guidelines for Australians*,¹⁹ which outline the minimum levels of physical activity required to gain a health benefit. Provision of these guidelines needs to be expanded to provide more comprehensive, tailored recommendations to individuals who may be suffering from complex conditions and/or injuries to support behavior change.¹⁵

Although evidence for effective interventions is lacking in the literature, lifestyle modification programs, with individualized counseling and exercise prescription, have been successful in South Africa, Canada, and the UK.^{9,18,20} Small-scale exercise referral schemes have also been successful in both the UK for sedentary individuals with chronic conditions²⁰ and in Australia with the Healthy Eating Activity and Lifestyle (HEAL™) program.²¹ Participants in the HEAL program have successfully achieved weight reduction, improvements in blood pressure and physical fitness parameters, and importantly, have maintained behavior change as measured by a 5-month post-program follow-up.²¹

Exercise physiologists (AEPs)

AEPs are allied health professionals who specialize in the prescription of clinical exercise interventions for patients at high risk of developing, or with existing, chronic and complex medical conditions and/or injuries.²² This emerging exercise physiology discipline has adopted the global initiative “Exercise is Medicine,” founded by the American College of Sports Medicine, and endorsed by professional bodies and practicing clinicians across many countries including Australia, South Africa, Canada, the USA, Germany, New Zealand, and the UK.^{22,23} The aims of AEP interventions are to prevent or manage chronic disease or injury, and assist in restoring optimal physical function, health, and wellness.²² The scope of responsibilities for the AEP includes diagnostic and functional testing, exercise prescription, exercise supervision, patient counseling, education, and outcomes analysis. In addition, AEPs may address barriers to maintaining exercise compliance, including psychosocial factors, family or job responsibilities, orthopedic or musculoskeletal limitations, or other deterrents to regular exercise.³

Exercise physiologists are currently widely employed in cardiac rehabilitation programs, but increasing opportunities exist in chronic disease management, including weight management, osteoporosis, pre-diabetes and type 2 diabetes mellitus management, and cancer rehabilitation.⁸

Cardiac rehabilitation programs designed and facilitated by exercise physiologists have been highly successful in changing exercise and physical activity behaviors; preventing or delaying subsequent cardiac arrest; improving exercise tolerance, muscle atrophy, and circulation; improving quality of life; and significantly reducing risk factors for comorbidities in this patient population.^{3,12} This established model of care is transferrable to other areas of rehabilitative health and is hypothesized to produce the same health benefits.

The Exercise is Medicine initiative aims to raise the profile of exercise physiology and incorporate physical activity and exercise as standard components of a disease prevention and treatment paradigm in Australia, improving community health and reducing long-term health care costs.²³ More information about AEPs and Exercise is Medicine can be found at <http://exercisemedicine.org.au/> and <http://www.essa.org.au> (accessed November 27, 2013).

Conclusion

Extensive evidence exists with respect to growing levels of obesity and associated NCDs such as heart disease and diabetes and the positive effect of physical activity on the prevention and management of these conditions.^{15,24,25} Equally, significant evidence is emerging with respect to the value of an interprofessional approach in the prevention and management of NCDs.¹⁰ A small but growing body of evidence also exists indicating the positive impact of the addition of AEPs to interprofessional practice, which supports exercise physiology as an invaluable but currently underutilized discipline and essential resource in interventions designed to combat all chronic and noncommunicable diseases, not restricted to coronary heart disease.^{3,8,26} Opportunity also exists for further research in this area of NCD prevention and management and Exercise is Medicine. The potential for exercise physiology to add measurable value in interventions designed to combat chronic and noncommunicable diseases is significant, and opportunities exist for AEPs to contribute to current chronic disease management in Australian primary health care settings.

Disclosure

The authors declare no conflicts of interest in this work.

References

1. Lee IM, Shiroma EJ, Lobelo F, Puska P, Blair SN, Katzmarzyk PT; Lancet Physical Activity Series Working Group. Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. *Lancet*. 2012;380(9838):219–229.
2. Kohl HW 3rd, Craig CL, Lambert EV, et al; Lancet Physical Activity Series Working Group. The pandemic of physical inactivity: global action for public health. *Lancet*. 2012;380(9838):294–305.

3. Franklin B, Fern A, Fowler A, Spring T, Dejong A. Exercise physiologist's role in clinical practice. *Br J Sports Med*. 2009;43(2):93–98.
4. Booth FW, Roberts CK, Laye MJ. Lack of exercise is a major cause of chronic diseases. *Compr Physiol*. 2012;2(2):1143–1211.
5. Australian Bureau of Statistics. Australian Health Survey: First Results, 2011–12. Canberra: Australian Government; 2012. Available from http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/4364.0.55.001Main%20Features12011-12?_opendocument&tabname=Summary&prodno=4364.0.55.001&issue=2011-12&num=&view=. Accessed November 12, 2013.
5. ABS. Australian health survey: first results, 2011–2012. In: ABo, editor. *Statistics*. Canberra; 2012.
6. Egger GJ, Binns AF, Rossner SR. The emergence of “lifestyle medicine” as a structured approach for management of chronic disease. *Med J Aust*. 2009;190(3):143–145.
7. Wagner EH, Austin BT, Davis C, Hindmarsh M, Schaefer J, Bonomi A. Improving chronic illness care: translating evidence into action. *Health Aff (Millwood)*. 2001;20(6):64–78.
8. Matheson GO, Klügl M, Dvorak J, et al. Responsibility of sport and exercise medicine in preventing and managing chronic disease: applying our knowledge and skill is overdue. *Br J Sports Med*. 2011;45(16):1272–1282.
9. Derman EW, Patel DN, Nossel CJ, Schweltnus MP. Healthy lifestyle interventions in general practice: Part 1: An introduction to lifestyle and diseases of lifestyle. *S Afr Fam Pract*. 2008;50(4):6–12.
10. Davies GP, Perkins D, McDonald J, Williams A. Integrated primary health care in Australia. *Int J Integr Care*. 2009;9:e95.
11. Dixon JB. The effect of obesity on health outcomes. *Mol Cell Endocrinol*. 2010;316(2):104–108.
12. Giannuzzi P, Mezzani A, Saner H, et al; Working Group on Cardiac Rehabilitation and Exercise Physiology. European Society of Cardiology. Physical activity for primary and secondary prevention. Position paper of the Working Group on Cardiac Rehabilitation and Exercise Physiology of the European Society of Cardiology. *Eur J Cardiovasc Prev Rehabil*. 2003;10(5):319–327.
13. Katzmarzyk P, Lear SA. Physical activity for obese individuals: a systematic review of effects on chronic disease risk factors. *Obes Rev*. 2012;13(2):95–105.
14. Sallis RE. Exercise is medicine and physicians need to prescribe it! *Br J Sports Med*. 2009;43(1):3–4.
15. Matheson GO, Klügl M, Engebretsen L, et al. Prevention and management of non-communicable disease: the IOC consensus statement, Lausanne 2013. *Br J Sports Med*. 2013;47(16):1003–1011.
16. Cashman SB, Reidy P, Cody K, Lemay CA. Developing and measuring progress toward collaborative, integrated, interdisciplinary health care teams. *J Interprof Care*. 2004;18(2):183–196.
17. Jordan JE, Briggs AM, Brand CA, Osborne RH. Enhancing patient engagement in chronic disease self-management support initiatives in Australia: the need for an integrated approach. *Med J Aust*. 2008;189(Suppl 10):S9–S13.
18. Fortier MS, Hogg W, O'Sullivan TL, et al. Impact of integrating a physical activity counsellor into the primary health care team: physical activity and health outcomes of the Physical Activity Counselling randomized controlled trial. *Appl Physiol Nutr Metab*. 2011;36(4):503–514.
19. Department of Health and Aged Care. *National Physical Activity Guidelines for Adults*. Canberra: Australian Government; 1999.
20. Williams NH. “The wise, for cure, on exercise depend”: physical activity interventions in primary care in Wales. *Br J Sports Med*. 2009;43(2):106–108.
21. Hetherington, S, Borodzicz, J. HEAL™: *Helping participants achieve significant health improvements*. Sydney, South Western Sydney Medicare Local Ltd (SWSML) & Exercise and Sport Science Australia; 2013. Available from: http://www.essa.org.au/wp/wp-content/uploads/HEAL_research_article_June_2013.pdf. Accessed January 15, 2014.
22. Exercise and Sports Science Australia (ESSA). *AEP Scope of Practice*. Brisbane: ESSA; 2010. Available from: <http://www.essa.org.au/wp/wp-content/uploads/AEP-Scope-of-Practice-v2-14.03.2011.pdf>. Accessed November 27, 2013.

23. American College of Sports Medicine (ACSM), ESSA. *Exercise is Medicine® Australia Strategic Plan 2011–2013*. ACSM, ESSA; 2011. Available from: <http://exerciseismedicine.org.au/wp-content/uploads/2011/10/Exercise-Is-Medicine-Aus-Strategic-Plan.pdf>. Accessed November 27, 2013.
24. Warburton DE, Nicol CW, Bredin SS. Health benefits of physical activity: the evidence. *CMAJ*. 2006;174(6):801–809.
25. Miles L. Physical activity and health. *Nutr Bull*. 2007;32(4):314–363.
26. Ehrman JK, Gordon PM, Visich PS, Keteyian SJ. *Clinical Exercise Physiology*. Champaign, IL: Human Kinetics; 2003.

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