

HEALTH PROMOTION

Physical activity: is it time for emergency department nurses to step up?

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Martin Duignan

Registered advanced nurse practitioner, emergency department, Our Lady's Hospital, Navan, Ireland

Olivia Duignan

Staff nurse, surgical 1, Cavan General Hospital, County Cavan, Ireland

Correspondence

martin.duignan@hse.ie

 @martinduignan

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Abstract

Physical inactivity seems to be reaching pandemic proportions. People are becoming more obese and less physically active at an alarming rate, and physical inactivity is a significant societal and personal burden in terms of economic and health costs. Nurses are ideally placed to motivate patients and promote physical activity. This article examines the benefits of physical activity, and explores emergency nurses' role in promoting regular exercise. It also outlines physical activity recommendations and suggests a starting point for promoting healthy exercise to patients who attend emergency departments.

Keywords

emergency nurse, health promotion, motivational interviewing, obesity, physical inactivity

Introduction

Physical inactivity is the fourth leading cause of death worldwide (Kohl et al 2012), and has been described as a global pandemic (Andersen et al 2016). In response to such concern, the World Health Organization (WHO) (2010) recommendations on physical activity for health (Box 1) have been widely adopted by various stakeholders, such as government and sporting organisations.

Most people fail to meet the recommended amount of physical activity (Morgan et al 2008, Massoudi et al 2010, Reis et al 2016). Alongside decreasing physical activity is an increasing incidence of non-communicable diseases, such as obesity, diabetes, heart diseases and stroke (WHO 2009). It is against this background that nurses can be prominent in improving public health, and delivering outstanding clinical care.

Emergency department nurses

As organisations move from a curative model of healthcare to one that focuses on prevention and well-being (Kan and Parry 2004), nurses, comprising the largest healthcare professional group, are ideally positioned to promote exercise and physical activity for the prevention and treatment of non-communicable diseases. Emergency department (ED) nurses in particular are well placed to spearhead health promotion activities, as they can be viewed as 'boundary workers' (Allen 2008) whose work is located

among patients. Practising at a gatekeeper to healthcare affords nurses the opportunity to deliver health promotion (Chambers and Thompson 2009) and, as such, every clinical encounter with patients should be interpreted as an opportunity for health promotion and preventive care (Blair 2009), not only with regard to presenting complaints, but also for overall health and well-being (Lowe 2015).

To create a culture that promotes physical activity, and to prevent and treat non-communicable diseases such as obesity, diabetes and hypertension, diabetes nurses must enhance their role as prescribers of health education advice. This in turn requires an examination of the professional and organisational barriers, such as medicalisation, associated with ED care.

ED nurses are burdened with the competing responsibilities of seeing and treating patients, and managing them, in terms of organisational structures and resources (Hillman 2014). This exposes nurses to what Peter and Liaschenko (2004) describe as the 'perils of proximity', in which nurses have sustained proximity to patients but feel they cannot provide adequate care because of inadequate resources and poor working environments.

Challenges specific to ED nursing include ever-increasing workloads and department overcrowding (Doetzel et al 2016, Varndell et al 2016), which result in distress and suboptimal patient outcomes as nurses attempt to care for patients in constrained

environments. In these circumstances, ED nurses often prioritise clinical over health-promotion activities (Shoqirat 2014) and health promotion consequently becomes marginal (Tones et al 2001).

Mortality rates are associated with time spent involved in sedentary behaviours, level of physical activity and cardiorespiratory fitness (Bouchard et al 2015), and as many of almost 10% of all deaths worldwide can be attributed to physical inactivity (Lee et al 2012). Further, there is an incontrovertible link between physical activity and health; it has been established that sedentary and unfit people have increased incidences of chronic diseases and die younger (Blair 2009), while observational studies illustrate that people who are active and fit live longer, healthier lives (Sallis 2011, Karvinen et al 2015).

Additionally, inactive people spend 38% more days in hospital (Jones et al 2013) compared with physically active people because of the increased disease burden associated with inactivity. The financial cost to the NHS of physical inactivity is estimated at £8.2 billion a year (Department of Health 2004).

Benefits of regular exercise

Long-term, regular exercise confers a range of health benefits, and exercise participation improves risk classification for all causes of death (Löllgen et al 2009, Myers et al 2015). It is beyond the scope of this article to describe all the health benefits of regular exercise, but the relationship between exercise and some health problems are outlined below.

Despite the long-standing association between physical activity and reduced risk of cardiovascular disease (Morris et al 1953, Maddison et al 2016), it remains the main cause of death in the UK. Physical activity can decrease blood pressure (Cornelissen and

Smart 2013), and moderate-intensity exercise can improve endothelial-dependent vascular function (Goto et al 2003, Gielen et al 2010).

Regular moderate-intensity exercise also decreases the adhesive and aggregative properties of platelets (El-Sayed et al 2004), and increases levels of high-density lipoprotein (Kodama et al 2007), thus improving cardiovascular functioning and lowering the risk of heart disease (Kyu et al 2016).

Physical inactivity accounts for almost 4% of dementia worldwide (Sallis et al 2016), so it is encouraging that physical activity has been found to offer cognitive protection, help maintain neurovascular integrity, and slow the onset of frailty during the ageing process (Laitman and John 2015, Viña et al 2016).

More than 40% of cancers are linked to lifestyle factors (Cancer Research UK 2014), and between 9% and 19% are attributable to physical inactivity (Friedenreich et al 2010). Approximately one third of cancers are preventable (World Cancer Research Fund International (WCRFI) and American Institute for Cancer Research (AICR) 2007), and it is estimated that around 3,400 people a year in the UK could avoid a cancer diagnosis by being physically active at recommended levels (Parkin et al 2011).

The WCRFI and AICR (2007) conclude that regular physical activity results in an 18% risk reduction for colon cancer, while Moore et al (2016), in a study of 1.44 million participants, found that leisure-time physical activity was associated with decreased risk of developing many cancer types, independent of body size or smoking history.

Obese and overweight people are prevalent in Ireland and many other countries. More than 25% of Irish adults, 8.6% of Irish six-to-nine-year-old boys and 6.9% of Irish six-to-nine-year-old-girls are obese (Wijnhoven et al 2014).

BOX 1. Physical activity recommendations

Children and young people (aged 2-18)

- » All children and young people should be active, at a moderate to vigorous level, for at least 60 minutes a day. Include muscle strengthening, flexibility and bone strengthening exercises three times a week.

Adults (aged 18-64)

- » At least 30 minutes a day of moderate activity five days a week (or 150 minutes a week).

Older people (aged 65 and above)

- » At least 30 minutes a day of moderate activity five days a week (or 150 minutes a week). Focus on aerobic activity, muscle strengthening and balance.

Adults with disabilities

- » Be as active as the disability allows. Aim to meet the adult recommendations of at least 30 minutes a day of moderate activity on five days a week (or 150 minutes a week).

(World Health Organization 2010)

Obesity is associated with reduced lifespan and a range of health complaints (Klein et al 2004), but regular physical activity can mitigate against its harmful effects, and prevent further weight gain (Donnelly et al 2009). Research also shows that maintaining high levels of activity is associated with reduced weight gain in men and women over a 20-year period (Hankinson et al 2010).

There is a strong inverse relationship between regular exercise and the risk of developing type 2 diabetes (Gill and Cooper 2008, Demakakos et al 2010). This is important because the lifetime risk of developing diabetes may be close to 1:2 in high-risk populations (Narayan et al 2003). Regular exercise, of varying types, can help prevent gestational diabetes, prediabetes, and type 2 diabetes (Colberg et al 2010) while, in type 1 diabetes, it can reduce insulin requirements (Kennedy et al 2013), although nurses should be aware that fear of hypoglycaemia often stops people with the condition from adopting a more active lifestyle (Brazeau et al 2008).

A meta-analysis of 305 randomised controlled trials, with a total of nearly 340,000 participants, found no statistical difference between exercise and drug interventions in the secondary prevention of coronary heart disease, rehabilitation after stroke, treatment of heart failure and prevention of diabetes (Naci and Ioannidis 2013).

Regular exercise can also improve mental health, as it has an anti-depressant effect (Rethorst et al 2009, Hamer 2012), and there is an association between sedentary behaviour and the risk of developing depression (Zhai et al 2015). A study of almost 1,500 children aged between four and 12 years found that those with a combination of low levels of physical activity and more than three hours a day in front of a screen had the greatest mental health problems (Hamer et al 2009).

Exercise prescription can have positive effects in the treatment of a range of mental health problems, including postnatal depression (Daley et al 2012), reducing signs and symptoms of anxiety (Herring et al 2010) and decreasing feelings of fatigue and increasing energy (Puetz et al 2006). Exercise can also be used as an adjunctive treatment to negate the side effects of pharmacological treatments, such as weight gain associated with anti-psychotic medications.

Where to start

There has been an explosion recently in the publication of national physical activity

strategies, from government and other relevant stakeholders, whose aim is to increase and encourage activity to improve population health (Healthy Ireland 2016, Royal College of Physicians in Ireland 2016, Sport England 2016, American College of Sports Medicine 2017). Clinicians are also challenged to inform patients proactively about the benefits of physical activity, and advise them on increasing their levels of physical activity (Royal College of Physicians in Ireland 2016).

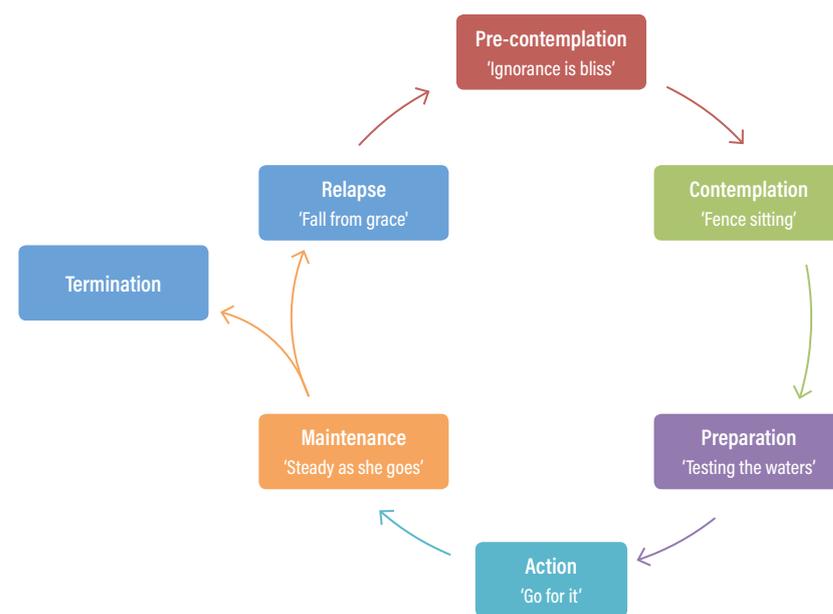
Creating societal change in physical activity levels requires the involvement and coordination of multiple stakeholders, including community designers, healthcare workers, government organisations, media outlets, volunteer and non-profit groups, but there are many initiatives that ED nurses can implement.

Almost half of nurses are unaware of the physical activity guidelines, while one third do not see physical activity counselling as part of their role (Macmillan Cancer Support 2011). Therefore, there is an urgent need to equip nurses with the skills to prescribe exercise. Including exercise history as a fifth vital sign (Sallis 2011), and knowing about physical activity guidelines, will enable nurses to take a central role in encouraging positive behavioural changes in patients, and to play a role in addressing the global pandemic of obesity.

An awareness of the trans-theoretical model suggested by Prochaska et al (1992) (Figure 1) could enable ED nurses to assess patients'

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Figure 1. Trans-theoretical model of the stages of change



readiness to change, and help them progress to the subsequent stages. It may be especially opportune in EDs for nurses to intervene at the 'pre-contemplation' stage, to raise patients' awareness of the risks associated with their physical activity behaviours.

Motivational interviewing, and 'change talk' strategies, can be used during consultations with patients, particularly when they are less ready to alter their physical activity behaviours. Motivational interviewing, a 'collaborative conversation style for strengthening a person's own motivation and commitment to change' (Miller and Rollnick 2013), is effective in promoting change, but nurses require training to become competent in its use. The principles of motivational interviewing are illustrated below, by the acronym RULE:

» R: Resist the righting reflex. Nurses should avoid the inclination to put right patients'

behaviour, even when it will benefit their health.

» U: Understand and explore patients' motivations.

» L: Listen with empathy.

» E: Empower patients, encouraging hope and optimism.

Additional tools for nurses include the COM-B model, the behaviour change wheel and the behaviour change technique taxonomy (Michie et al 2011, 2013). These resources can help nurses to understand the forces that shape the behaviours people want to change, consider the full range of available interventions, select the appropriate intervention to modify the forces for the behaviour in context, and evaluate the success of the intervention.

It is beyond the scope of this article to explore these models in depth, but they have

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been used successfully to achieve behaviour change across a range of health interventions (Olander et al 2013, Webb et al 2016).

Brief counselling

Using the interventions and tools mentioned above, it is possible, in a five-minute counselling interaction with patients, to:

- » Assess readiness to change exercise habits.
- » Explore what patients might want to do to be more active, and identify barriers.
- » Explain how exercise can affect the specific disease or illness the patient has or is at risk of developing.
- » Explore how patients can incorporate exercise into their lives.

Conclusion

The promotion of evidence-based public health interventions, such as the physical activity

guidelines, can deliver tangible, improved health outcomes for patients.

It is hoped that this paper will stimulate debate among ED nurses about their role in this area. Evidence of the benefits of, and improved outcomes from, regular physical activity is unequivocal and physical inactivity is recognised as the major public health problem of our time.

The evolving nature of nursing practice affords opportunities for nurses to be creative and innovative in adopting leadership roles in prescribing exercise. Such preventative intervention can improve health outcomes and reduce the financial burden of disease. However, it requires that nurses in leadership roles examine the barriers preventing nurses from taking on this role and promoting health-enhancing activities as part of their core nursing activities.

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