Keywords Risk factors/Health promotion/Behaviour change models

This article has been double-blind peer reviewed

In this article...

- Why primary stroke prevention is crucial
- Theoretical models of behavioural change
- Practical ways of undertaking theory-based health promotion

Stroke 5: health promotion for primary stroke prevention

Key points

The burden linked to avoidable stroke is rising so better primary prevention is needed

There little practical guidance for nurses on primary stroke prevention

Various theoretical models describe how behavioural change works

Nurses can use theoretical concepts to guide their health promotion interventions

Patients need positive encouragement, tailored advice, achievable goals and signposting to local resources

Author Nova Corcoran is senior lecturer in public health, University of South Wales; Lynn McCullagh is lecturer in adult nursing and midwifery, London South Bank University.

Abstract It has been 10 years since the Department of Health set out a plan to improve all aspects of stroke prevention and management, yet the number of strokes is still rising every year. This suggests that we need to improve primary stroke prevention, an area in which nurses have an important part to play. Key to this is helping people to adopt healthier lifestyles – stopping smoking, taking enough exercise, eating healthily, drinking alcohol in moderation and maintaining a normal body mass index. Various theoretical models describe how behavioural change can be achieved and what stands in its way. Nurses can cherry-pick useful concepts from these models for their health promotion interventions. This article – the last in our five-part series on stroke – highlights practical ways of helping people change their behaviours to reduce their risk of stroke.

Citation Corcoran N, McCullagh L (2018) Stroke 5: health promotion for primary stroke prevention. *Nursing Times* [online]; 115: 3, 53-56.

Nurses play an important role in primary stroke prevention but practical guidance in that area is often limited (Jones and Jones, 2017). This article provides practical suggestions grounded in theoretical health promotion models that nurses can use to reduce people's risk of primary stroke.

The Care Quality Commission (2011) recommends that providers of stroke services work together to ensure patients who have had a stroke and their carers have the information they need to manage the long-term effects of the condition and are supported to understand that information. We believe the same should apply to people at high risk of stroke, who need to receive information and support from health professionals working in primary prevention.

Currently, there is little guidance designed to help nurses reduce their patients' primary stroke risk. To address this lack of guidance and increase nurses' health promotion knowledge, this article describes five theory-based, practical ways to help patients make lifestyle changes.

Burden of avoidable illness

Stroke is second only to ischaemic heart disease as the leading cause of death worldwide, and this has not changed since 2000. Together, the two conditions account for 15 million deaths annually (Bit.ly/WHO-Top10Death) and their incidence increases every year. In 2010, there were 17 million first-time strokes worldwide (Feigin et al, 2013). In the UK, there are approximately 152,000 strokes every year and about a third of people experiencing a first stroke go one to have another. Moreover, stroke remains one of the largest causes of disability in the UK (Stroke Association, 2016).

It would appear that the predicted "sharply rising burden of avoidable illness" has come to pass (Wanless, 2002). Despite the promise of a "radical upgrade

in prevention and public health" made in recent policy documents (Public Health England, 2016; NHS England, 2014), the incidence of stroke has continued to increase (NHS England, 2014).

It is now over 10 years since the 2007 national stroke strategy (DH, 2007) set out a plan to improve all aspects of stroke prevention and management, yet the number of strokes still rises year on year, suggesting that health professionals and service providers need to get much better at prevention.

Risk factors

The risk of stroke doubles every decade after the age of 55, both for men and women (Stroke Association, 2016). Other non-modifiable risk factors are socioeconomic status, a family history of stroke, and ethnicity (Miller, 2007). These factors cannot be changed but they help to determine which groups may be at higher risk.

Across the UK, there are marked differences in incidence according to poverty and ethnicity. Wolfe et al (2005) and Markus (2007) showed that there is a 2.2% higher prevalence of stroke among the black community compared with the white population. This suggests that prevention should be much more targeted at these at-risk population groups.

Major risk factors for stroke are outlined in Box 1.

Box 1. Risk factors for stroke

The 10 major risk factors associated with 90% of ischaemic strokes are:

- Hypertension
- Smoking
- High waist-to-hip ratio
- Poor diet
- Poor physical activity
- Diabetes mellitus
- Increased alcohol intake
- Psychosocial stress
- Depression
- Atrial fibrillation

Risk factors for haemorrhagic strokes are:

- Hypertension
- Smoking
- High waist-to-hip ratio
- Poor diet
- Increased alcohol intake (O'Donnell et al, 2010).

Less well documented risk factors for all strokes (including transient ischaemic attacks) include sleep apnoea, drug misuse, hormone replacement therapy, hyperhomocysteinaemia and metabolic syndrome (Miller, 2007; Bath and Gray, 2005).

Primary prevention

There are two approaches to primary stroke prevention:

- Encouraging at-risk people to take preventive medication (that is, lipid-lowering, anticoagulant and antihypertensive drugs);
- Supporting them to undertake lifestyle changes.

In their retrospective analysis of nearly 30,000 UK medical records, Turner et al (2016) found that only half of all stroke patients who had been eligible for preventive medication received such treatment before they had their first stroke. Extrapolating from this data allows us to conclude that 12,000 first-time strokes could be prevented in the UK every year through the optimal use of preventive medication (Turner et al, 2016). One approach to primary stroke prevention is, therefore, to proactively approach eligible patients and offer them preventive medication.

The other approach is to help people adopt healthier lifestyles. Chiuve et al (2008) found that not smoking, exercising daily, eating a healthy diet, drinking alcohol in moderation and keeping a normal body mass index all reduce the risk of stroke. More recent research suggests that the risk of stroke decreases as the number of healthy behaviours adopted increases (Larsson et al, 2015).

These two approaches can be used separately or in combination. However, it must be noted that stroke involves multifactorial mechanisms, so primary prevention needs to be tailored to the individual.

Role of nurses

Nurses are in an excellent position to deliver primary health promotion, and the white paper *Equity and Excellence: Liberating the NHS* (DH, 2010) highlights their roles as providers of health information and supporters of lifestyle changes. Nurses in almost all roles can do something to reduce people's risk of stroke and, given the detrimental effects of stroke, even preventing stroke is valuable.

The question of which nurses should provide the bulk of stroke prevention has been explored by different authors. Bergman (2011) argued that most practice nurses are involved in health promotion and undertake most risk assessments for stroke, but recommended that general practice adopts a more structured approach to the use of clinical guidelines. Bergman also commented that nurse practitioners have a crucial role in patient education that can prevent recurrent strokes.

Community nurses are well-placed to raise awareness of risk factors for stroke, give lifestyle advice, support people to give up smoking, and promote healthy eating and regular exercise (Clare, 2017). Health visitors for older people used to have a leading role in health promotion and education (Luker, 1987), however this is no longer the case due to the change of the care structure and funding of services in England. In some areas, such as Croydon and North and West Reading, frail older people receive stroke prevention from services (by nurses and other health professionals) created to support them and prevent them from being admitted to hospital (Santimano, 2016).

Paramedics and the voluntary sector have also been cited as providers of health promotion, with examples such as the rolling out of technology to improve the detection of atrial fibrillation in Enfield and West Hampshire, and the use of telehealth to support blood pressure management in Stoke-on-Trent and Bradford (NHS England, 2014).

However, stroke prevention initiatives and tailored lifestyle interventions are not offered systematically across the UK. Furthermore, there is limited guidance for nurses on practical ways to deliver stroke prevention that are not overly time-consuming or too difficult to implement.

Theoretical models

Modifiable risk factors for stroke include physical inactivity, high salt intake, high alcohol consumption, cigarette smoking and being overweight (Meschia et al, 2014). These are all topics that nurses might be expected to discuss with patients. Simply telling patients that they are at risk is not enough to persuade them to change their lifestyles – they need encouragement and support. This is where theoretical health promotion models can be helpful.

There are numerous theoretical models that nurses can use to plan and deliver health promotion interventions. The most commonly used in health promotion are:

- The theory of planned behaviour (Ajzen, 1991);
- The health belief model (Rosenstock, 1974);
- The transtheoretical model – sometimes known as the 'stages of change' model (Prochaska and Diclemente, 1983);
- The social cognitive theory (Bandura, 1989).

These models have been explained in a user-friendly manner by authors such as Upton and Thirlaway (2014) and Corcoran (2013). Most have been used in stroke prevention; for example, Sullivan et al (2009) used the health belief model to link health beliefs, knowledge and behaviours, and concluded that beliefs are important factors influencing weight loss and physical activity.

These various theories are basically frameworks highlighting different factors that influence behavioural change. What they have in common is that they all aim to predict what it is that makes people change their behaviours – or not. They give us indications of what people might think about when they contemplate behavioural change; for example, some might consider the 'benefits and barriers' of change (health belief model). There may be people who are important to them and will influence their ability to change (concept of 'subjective norms' in the theory of planned behaviour); some patients might not have the confidence or belief in themselves to change (concept of 'self-efficacy' in social cognitive theory).

While it is important for nurses to be familiar with these theories, they can work with them without having to use them in their entirety. In the real world of busy nursing roles, this might be a more practical way to undertake health promotion. Parker et al (2004) suggested that including a whole theoretical model in a behavioural change intervention may be unrealistic and that it may be better to focus on certain 'leverage points' – for example, 'subjective norms' – instead.

Health promotion in practice

The following sections outline five practical ways that use 'leverage points' from the above models to promote healthy lifestyle changes and reduce individuals' risk of stroke.

Promoting the benefits of change

Nurses are in a perfect position not only to recommend change, but also to explain why change is important. Some patients may find it difficult to quantify or see meaning in health benefits that may appear intangible and far away in the future. While the intangible benefits may not be visualised by patients, there are tangible benefits to using a number of theoretical models. Tangible and meaningful benefits for patients may be saving money, losing weight or feeling a sense of achievement.

Nurses can help patients identify barriers to change, such as in smoking cessation

There are numerous resources (Box 2) that can be used to highlight the benefits of change to patients, such as:

- The NHS Smokefree app, a four-week daily app that keeps track of how much money a person is saving by not smoking;
- The Drinkaware drink tracker and tools, and the One You Drinks Tracker app, which can be used to track intake of calories and units of alcohol.

Identifying barriers to change

Many theoretical models acknowledge barriers that can hinder behaviour change. Nurses can help identify these barriers by asking patients what they think will stop them from changing and how they plan to overcome these hurdles.

In the case of smoking cessation, barriers could be cravings, habit and the loss of a coping strategy. If patients have a plan about how to deal with barriers, relapse is less likely; for example, if they have identified cravings as a barrier, they could go on nicotine replacement therapy. Some barriers are more difficult to overcome than others; for example, limited physical ability may restrict opportunities for involvement with community groups and activities (Morris et al, 2017). Nurses need to consider the individual, think about what that person wants to achieve, and suggest realistic ways these goals can be reached.

Box 2. Online resources

- The Stroke Association: www.stroke.org.uk
- Health Unlocked: www.healthunlocked.com
- Change4life: www.change4life.co.uk
- Change4life food facts: Bit.ly/4LifeFood
- NHS smokefree: www.nhs.uk/smokefree
- Drinkaware drink tracker and tools: www.drinkaware.co.uk
- One You Drinks Tracker: Bit.ly/NHSDrinkTracker
- NHS and British Dietetic Association: 12-week weight loss plan: Bit.ly/NHSWeightLoss
- NHS 'Couch to 5K' plan: Bit.ly/Couch5K

Being positive

A key concept in social cognitive theory is 'self-efficacy', or 'behavioural control', which refers to individuals' perception of their own ability to achieve something. Patients with low self-efficacy are less likely to change and more likely to avoid things they find challenging. It is important to be positive and tell people they can achieve their goals. Another strategy is to suggest that they set themselves small, achievable goals; for example, those who are considering smoking cessation could take up vaping or nicotine patches, which would reduce the level of nicotine in smoking – rather than abruptly stopping smoking.

There are good ideas for nutrition 'smart swaps' on the Change4life website. There are also a number of smartphone apps and websites that break change into small and manageable parts; for example, the NHS and the British Dietetic Association have developed a 12-week weight loss plan, and the NHS has designed the 'Couch to 5K' plan, a nine-week plan to increase fitness by getting absolute beginners to take up running.

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Considering the wider environment

Most criticisms of behaviour change interventions are linked to the fact that the individual's environment is often ignored (Corcoran, 2013). The environment can be a major barrier to behaviour change; for example, embarrassment about one's looks or concerns about safety can discourage people from exercising outdoors, while an unwelcoming gym can discourage them from exercising indoors. Encouraging people to exercise more should include signposting them to friendly, safe and accessible exercise spaces in their local area.

Nurses therefore need to familiarise themselves with their catchment area and find out what assets already exist locally. Are there easy-to-access physical activity groups? Does the local leisure centre or community hub run low-cost exercise classes? There may also be local services designed to reduce stroke risk; for example, the local GP surgery might let patients do their own blood pressure checks, or the local pharmacist might be particularly good at helping people understand their medication. Some areas have 'stroke navigators', who have been found to have a positive effect on medication management and adherence to lifestyle changes (Eudy et al, 2014).

Tailoring information to the person

Most theoretical models highlight that there are variables, such as existing knowledge or patient characteristics (age, gender, ethnicity), that influence behaviour change (Corcoran, 2013). When nurses provide information to patients, it is important that they consider how it will be understood; sometimes information will need to be adapted to make sure the recipient understands it (Moorley et al, 2016).

Each individual has different characteristics, risks and needs. Not all information leaflets are easy to read and some are unsuitable for specific patient groups. Not all patients have English as their first language. Some may be anxious about how to change or unsure about what to change. Patients will be at different stages of change and have different levels of support needs. Nurses can help by asking questions such as: have you tried to change before? What is stopping you from changing? This will allow them to tailor their information, guidance and support to the individual.

Conclusion

Supporting people to reduce their risk of stroke is an essential role of nurses. Some of you may feel that patients do not always listen to your advice, or that they do not really want to change, but think of it this way: if you manage to prevent even one person from having a stroke, this will make a huge difference to the lives of that one person and their family.

This article has described five theory-based, practical methods that you can use to help your patients reduce their risk of stroke – as well as risks linked with other long-term conditions such as heart disease and diabetes. Theory-based practical health promotion is within the capacity of all nurses. You do not need to be an expert in theoretical models – just think small changes; set your patients short-term and achievable goals; investigate the assets of the local area; and tailor your advice to the individual. **NT**

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