

Hitting the right note: foot self-care communication in the context of personalised medicine

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Key words

- Diabetic foot
- Personalised medicine
- Patient communication

Article points

1. Personalised medicine seeks to provide the right care for the right patient at the right time
2. Many communication approaches have been utilised in diabetes communications to try and increase patient prioritisation regarding self-care
3. The utilisation of fear and shame as a messaging tool is common but has numerous adverse consequences and may ultimately be ineffective
4. Understanding approach/avoidance motivation may help clinicians to better appraise what motivates individuals towards self-care practices.

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Foot disease in diabetes remains a serious problem on both the individual and societal level. Many strategies are focused on improving this particular health problem with particular attention paid to patient education strategies. More recent studies have highlighted that patient education, while important, does not function in isolation to significantly improve the situation of foot disease in diabetes as it does not consistently translate into sustained self-care behaviours for patients. With this understanding, more attention has been placed on wider aspects of patient communication to see if the delivery of the messaging to patients — as well as the content — may help unlock why increased information provision does not necessarily result in improved patient self-care behaviours. Fear and shame have often been used as a means to drive home messaging around the risks to feet in diabetes but these communication tools often prove ineffective and have known adverse consequences. Renewed attention around personalised medicines allows for a shift in focus towards understanding what problems individuals face specifically and what motivates them. Bringing these together could allow for highly effective, tailored patient messaging to help patients initiate and sustain good foot self-care behaviours.

There are currently over 3.9 million people diagnosed with diabetes in the UK and an estimated 900,000+ further cases currently undiagnosed (Diabetes UK, 2020). Ulceration and amputation are relatively common complications of diabetes and result in a significant personal and financial burden (Kerr et al, 2019). The National Institute for Clinical Excellence [NICE] (2019) estimated that one in three patients with diabetes will develop vascular impairment to the feet and more than one in 10 will develop diabetic foot ulceration (DFU). Bus et al (2019) point out that the lifetime incidence rate of a diabetes-related foot ulcer is between 19%–34% with a yearly incidence rate of 2%.

Kerr (2017) estimated that more than 64,000 people in the UK have a foot ulcer at any given time. There are over 7,000 diabetes-related lower-

limb amputations performed every year in England resulting from ulceration (equating to roughly 19 per day) and that the cost of DFUs and amputation to the NHS is £1 for every £150 that it spends — a total of approximately £780m per year (Diabetes UK, 2016). As of 2014–15, Diabetic foot disease cost the NHS £1bn (National Diabetes Foot Care Audit, 2019). Overall, the burden of diabetic foot disease is ranked in the top-10 of all medical conditions (Lazzarini et al, 2018) and some people fear loss of a limb more than death (Wukich et al, 2018).

Thus, prevention of foot ulcers and amputations is crucial to reduce the enormous healthcare, patient and societal burden (van Netten et al, 2020), however, diabetic foot disease attracts less public concern, research effort and political and clinical attention than other conditions that have similar impacts upon quality of life and survival (Kerr et

al, 2019). This has contributed to clinicians having inexact and often frustrating approaches to helping people with diabetes prevent the development of foot ulcers as a systematic review by Hoogeveen et al (2015) outlined.

Fan et al (2014) posited that inadequate knowledge and poor foot self-care behaviour may contribute to DFU development and Bus et al (2019) published guidelines for The International Working Group on the Diabetic Foot (IWGDF) citing good foot self-care behaviours as a key approach to prevention of foot ulcers in individuals with diabetes. While these approaches are widely agreed as being of importance, van Netten et al (2020) argued that the future for DFU prevention requires a paradigm shift from stratified healthcare towards personalised medicine and that a 'one-size-fits-all' approach runs the risk of failing for many patients. In this article, the role of effective, personalised patient communication will be explored within the context of wider, personalised approaches to the prevention of DFUs.

Personalised medicine

Personalised medicine is focused on providing the right treatment to the right patient at the right time (Venne et al, 2020). It is argued that the real potential utility of personalised medicine to help tackle diabetic foot disease is that while it is still necessary for the cornerstones of DFU prevention (education; self-management; good footwear and the treatment of risk factors) to play a collective role — different strategies within each tenet could be available for different patients and this, in turn, can reduce the overall self-care burden for people with diabetes as they will only need to focus on the care targeted to their situation (van Netten et al, 2020).

This could provide a possible solution to the suggested problem that the foot in diabetes is often de-prioritised by patients relative to more pressing concerns about other aspects of day-to-day management of their diabetes despite the risk that severe foot problems in diabetes may cause (Lamchahab et al, 2011; McInnes et al, 2011; Guell and Unwin, 2015). Thus, if specific actions are required of specific persons with specific risk factors, it may help focus the mind of the individual on fewer core prevention strategies

rather than potentially overwhelming them with a great many.

While this may help to provide the right treatment at the right time for the right patients, from the perspective of healthcare professionals whose professional focus is on the foot in diabetes and preventing DFUs, there remains the existential question of how best to focus the patients' attentions on their foot health and to make that one of their priorities too. This has long been considered crucial to ensure that appropriate self-care behaviours are undertaken and adhered to (Mullan et al, 2020; Skidmore et al, 2021).

Adherence

Jaam et al (2018) sought to produce a conceptual framework model to describe adherence to self-care practices in diabetes — namely medication adherence — and found a network of complex, interacting factors lay behind patient decisions around self-care behaviours. One particular find of this study was that stigma and vicarious experiences induced a sense of fear in people with diabetes that was subsequently associated with adherence to medication.

In essence, these societal-related factors were associated with fear and shame which both contributed to individuals modifying their behaviour. Despite this being a model more closely focused on medication adherence, the potential applicability of these findings to other facets of self-care — such as foot self-care behaviours — is plausible given that patient fears about lower-extremity amputation is among the chief worries of people with diabetes (Kuniss et al, 2019).

Therefore, a logical extension of this point is that if medication adherence can be increased through strong societal factors, such as shaming and fear (through personal and vicarious experiences), then there may be a route to improving foot self-care behaviours via these means too. Indeed, it has often been seen through both individual and society-wide health promotion messaging and education, that highlighting the starkest outcomes to induce fear responses in individuals has been tried as a means of generating behaviour change in people — including within the context of diabetes (Scabbert et al, 2013; Ruiter et al, 2014; Brookes and Harvey, 2015). However, is this the optimal approach to

patient communication as a means to improve self-care behaviours?

Self-determination theory

Self-determination theory (SDT) is one key framework to help understand both the initiation and sustainability of health behaviour change (Ryan and Deci, 2017). SDT provides a framework for intervention development by setting out the necessary mechanisms that underpin changes in long-term health behaviour. These are: basic psychological needs; autonomy support and motivational regulations (Gillison et al, 2019). SDT posits that health behaviours are driven by different motivations that vary along a spectrum of autonomy (Ryan and Deci, 2017). 'Intrinsic motivation' is the most autonomous form of motivation which is defined as acting for the inherent enjoyment of the activity involved. However, even when the health behaviour is not enjoyable, one may still be autonomously motivated and when they are this is termed 'integrated regulation' (acting in line with one's own goals and values) and 'identified regulation' (acting to obtain personally valued outcomes) (Gillison et al, 2019).

These autonomous forms of motivation appear much more likely to invoke and sustain behaviour change than when behaviour is driven by external forces (such as avoiding guilt or shame; in response to reward and/or punishment through external regulation) (Ng et al, 2012). Engaging in behaviours for more autonomous reasons results in more adaptive health outcomes, including more positive wellbeing, and better behavioural adoption and maintenance (Ryan and Deci, 2017). More autonomous motivation is facilitated through the satisfaction of three basic psychological needs; autonomy (feeling that one is empowered and has choice), competence (feeling that one can be effective and capable), and relatedness (feeling close to, and valued by others) (Ryan and Deci, 2017; Gillison et al, 2019).

Thus, viewed through the lens of SDT, utilising fear and stigma as a means of shaping patient behaviours might serve to provide some short-term change to behaviours but may be far less sustainable in the longer term.

Consequences of fear

Aside from the direct question about how effective

stark health messaging may be at inducing and sustaining behaviour change, is what possible negative and unintended consequences come from utilising fear as a health messaging tactic? 'Fear appeal' is a long-established phenomenon in health communication and is defined as a persuasive communication that attempts to arouse fear in order to promote precautionary motivation and self-protective action (Rogers and Deckner, 1975). Ruiter et al (2014) reviewed the evidence on fear appeal and concluded that it is often a poor choice of health messaging tactic because of the limited and sometimes counterproductive effects of fear arousal and the extensive knowledge base that exists around more effective methods of behaviour change.

This appears to be in contrast with general beliefs regarding threatening information but studies do suggest that fear arousal may result in defensive reactions, such as risk denial; biased information processing and, ultimately, allocating less attention to the health promotion messages that are often used as the 'solution' to the problem that has been presented to the patient (Van't Riet and Ruiter, 2013).

While in some instances a fear appeal may lead to a person to take protective, risk-reducing action where the risk to the individual has been appropriately contextualised and the way to avoid that risk (the 'solution') is seen as both achievable and desirable, there is a significant risk that unintended consequences may ensue instead. If an individual's coping appraisal points towards a belief that the situation is so alarming and inevitable that no action is realistically available that may avert the posited disaster, then in the absence of danger being able to be averted, another way must be found by the individual to control the fear emotion that has been provoked, namely, derogating or denying the threat message altogether (Ruiter et al, 2014).

This can have the real effect of the individual understanding the risk that has been presented to them but denying it and, potentially, engaging in riskier behaviours if those behaviours are comforting (i.e. comfort-eating, consuming alcohol and smoking). There is also the material risk that in reaching a stage of denial despite being well-informed, that the trust between patient and practitioner can be harmed (Van't Riet and Ruiter, 2013). Alas, it would seem that the appraisal of fear

appeal indicates that the potential harms of this approach likely outweigh any possible gains.

Stigma

Alongside fear, stigma was also cited in the study by Jaam et al (2018) as a factor that may drive adherence to certain self-care behaviours. Public stigma and self-stigma are two distinct but intertwined phenomena. Public stigma refers to negative reactions of the general public towards a group based on stereotypical attributes distinguishing that group. Self-stigma, by contrast, refers to the internalisation of society's negative perceptions towards an illness by someone who has that particular illness (Kato et al, 2017). One way it is hypothesised that stigma may yield a more conscientious attitude towards self-care behaviours is that in responding to threats to his/her social identity, a person who feels stigmatised about their particular health issue may seek out ways to escape this negative experience and, thus, become motivated to behave in ways that would facilitate that (Major and O'Brien, 2005).

However, real-world evidence to support the notion that individuals who feel stigmatised about their health condition are more motivated to undertake and sustain optimal self-care behaviours is weak. Moreover, there are adverse consequences of diabetes-related stigma. Schabert et al (2013) conclude that the psychological impact of living with a stigmatised condition may be a barrier to optimal self-care by way of increasing the likelihood of concealment by the individual of the extent of their health condition and a reluctance to share their worries and concerns with friends and loved ones.

Perhaps even more concerning, Puhl and Huer (2010) outlined that many patients with diabetes feel that medical professionals hold stigmatising attitudes towards them — particularly if obesity is a co-existing factor, potentially impacting upon the trust that people with diabetes may have towards their healthcare professionals. Indeed, the findings of Schabert et al (2013) further point out that many people with diabetes feel that they carry a feeling of blame for their diabetes as a general public perception is that it is an avoidable health problem that emerged owing to a lack of dietary control and, by extension, that they are somehow

less worthy of help than other more 'legitimate' medical conditions.

When this is considered against the underpinning point about negative psychological and societal-related factors being likely to result in feelings of despondency and denial about whatever is beneath these negative experiences — it appears that stigmatisation, like fear, is a suboptimal approach or outcome in the context of seeking to create healthy, sustainable behaviour change.

Approach/avoidance motivation

This appraisal of stark health messaging and utilisation of fear and stigmatisation as a communication strategy does lead to the inevitable question regarding what is a more legitimate approach. To return to the undercurrent regarding personalised medicine, the short answer is that there is not a universal approach to this but there are frameworks that help to provide strategies that build upon understanding what may or may not motivate individuals in the direction of particular health behaviours.

One such framework that has wide support and a strong evidence base is that of approach/avoidance motivation. In essence, this encapsulates a broad point that health communications can be framed in terms of the benefits of engaging in a particular behaviour (gain-framed) or the costs of failing to engage in the behaviour (loss-framed) (Sherman et al, 2006). In this framework, the approach to messaging will be determined by understanding if the individual is more risk-seeking (i.e. motivated by potential gains) or risk-averse (i.e. motivated by avoiding potential losses). In such a scenario, the former may respond more favourably to messaging that seeks to focus on the sense of what the individual could achieve by engaging with the requisite behaviour and shared goal-setting in this way, while the latter may be more motivated by outlining the potential dire consequences that may be avoided through particular approaches (Sherman et al, 2006).

Van Netten et al (2020) point out that NOT getting a foot ulcer is ultimately a loss-avoidance goal and that may, in turn, be a less effective communication strategy for many patients with diabetes who are perhaps more gain-framed in terms of their motivation. Indeed, as Van Netten et

al (2020) go on to recommend, in some instances a re-framing of the message towards 'ulcer healing' and focusing on what activities that may facilitate for the individual could be more effectively motivating. Seeking the right approach will require listening and intuition skills, and the healthcare professional needs to remain cognisant of SDT so as to avoid external, coercive incentivisation and/or approaches which are perceived with an undertone of punishment as these often prove counter-effective in the longer term (Ng et al, 2012; Deci and Ryan, 2017). Sherman et al (2006) concluded that both an individual difference factor (approach/avoidance motivation) and a situational factor (message framing) that interact within the context of a particular health message may well enhance self-efficacy, intentions and behaviour change.

Conclusion

Care and consideration always needs to be the cornerstone of effective patient communication and this involves the healthcare professional taking the time to understand the patient, their personality and situation, as well as to appreciate the impacts (both desired and undesired) of the words that are used in consultations with patients.

Utilising frameworks such as approach/avoidance motivation may make this task easier for health professionals and appears compatible with more recent paradigm shifts towards concordant health consultations and the development of therapeutic alliances with patients (Van Ommen et al, 2020). Thus, despite an often-natural tendency towards assuming that non-ideal self-care behaviours are the result of ignorance and/or intransigence, it appears wise to steer away from stark health messaging that seeks to utilise fear and/or stigmatisation to induce a move towards more optimal health behaviours. Within the wider context of personalised medicine, targeted and effective patient communication is crucial. One such approach that demonstrates both a theoretical plausibility towards personalised medicine with a focus on enhancing intrinsic motivation towards self-care as well as real world results pointing towards its efficacy is that of motivational interviewing (Gabbay et al, 2011; Salimi et al, 2016; Binning et al, 2019; Hill, 2019). Indeed, this has become an area of clinical focus and development for health professionals working

with people with diabetes (Kaczmarek et al, 2021). Continued research in this area is required (Binning et al, 2019). ■

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