

Nursing people with bariatric care needs: more questions than answers

KEY WORDS

- » Bariatric care needs
- » Body mass index
- » Obesity
- » Skin breakdown
- » Tissue viability

Recent increases in the population with a high body mass index (BMI) mean that individuals with bariatric care needs are an emerging population. Excess weight leads to internal physiological changes, combining with external factors such as difficulties with skin hygiene, equipment and positioning, heightening the risk of skin breakdown. Most commonly these are moisture lesions and pressure ulcers, often difficult to access within skin folds. A key challenge for clinicians is the lack of a robust evidence base to guide care once breakdown has occurred. This article gives an overview of the challenges professionals face when caring for this at-risk group, including practical suggestions for care-providers. The need for further research with this under-served population is highlighted.

Clinicians are increasingly caring for people referred to as “bariatric.” The word baros is Greek for weight or heavy, yet an agreed definition by weight or body mass index (BMI) (kg/m^2 : a person’s weight (kg) divided by their height (metres)) is much debated both in practice and in the literature, with various weight or BMI thresholds applied (Cowdell and Radley, 2014). Definitions which focus solely on a weight threshold fail to allow for the fact that people are affected differently by excess weight, dependent on body shape (Corbyn and Rush, 2010), which impacts on equipment needs (Swann, 2013) and daily functionality. Thus a given weight or BMI may not equate with care need. However evidence shows that as BMI rises, so does loss of function (Backholer et al, 2012) and weight-related comorbidities, leading to an increased need for care. The author writes as a clinician (District Nurse) who has been directly involved in providing care for individuals with BMI as high as 100 in the home environment.

PREVALENCE

Recent increases in the number of people with high BMI will lead to more people with bariatric care needs. Evidence from national health surveys show that the population in the UK with a BMI ≥ 40 is rapidly increasing. Prior to the 1990s numbers were so low as to prevent confident measurement (Grieve et al, 2013). Since 1995, prevalence in

Scotland has trebled for women aged 16–64 years (Scottish Government, 2018) whilst prevalence in men in England aged ≥ 16 years has risen eight-fold (NHS Digital, 2018). The rising trend for all adults in England across the last two decades is illustrated in *Figure 1*. Current analyses predict further rises in all UK countries, with rates as high as 20% in women aged 55–64 years in Wales and over 4 million people being affected in England by 2035 (Keaver et al, 2018). These figures demonstrate that although prevalence rates in single figures may appear relatively low when compared to overweight (BMI 25–29.9) and obesity Class I (BMI 30–34.9), which have rates of 36% and 25% respectively (NHS Digital, 2018), they represent significant numbers of people across the population. UK general practice data shows measurable levels of individuals with BMI >70 (Moussa et al, 2019a), with maximum load of scales making it difficult to obtain data on people with the highest weights. In summary, individuals with bariatric care needs represent an emerging population, previously unknown.

As with any new issue, challenges exist at multiple levels. This is particularly true for health and care services, charged with providing quality care to individuals at the point of need. It is well recognised that both comorbidities of obesity (Booth et al, 2014) and healthcare costs increase with higher BMI (Kent et al, 2017).

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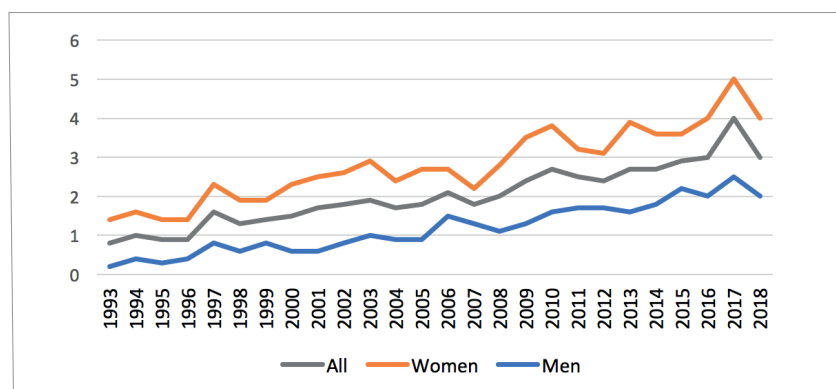


Figure 1. BMI ≥ 40 prevalence in England 1993–2018 (NHS Digital, 2018)

TERMINOLOGY

People living with a high BMI stand out visually, and are commonly subjected to stigmatisation over their size and weight by the media, within society and among health professionals (British Psychological Society, 2019). Acceptable terminology relating to excess weight varies between clinicians, academics and policy makers. Frequently used terms include “morbid”, “extreme” or “severe” obesity (Puhl et al, 2013), which are often used to refer specifically to people in the highest BMI category of BMI ≥ 40 as defined by the World Health Organization (2020) but can be seen as stigmatising. In line with guidance from the Association for Study of Obesity (2019), this article adopts person-first language describing a person as having bariatric care needs, rather than labelling them as “bariatric” which can happen in practice. Whilst this may feel cumbersome, it aims to avoid referring or labelling a person by their weight or size status, which many of us may find unappealing regardless of weight status. Professionals should seek to be non-judgemental of people with bariatric care needs, to establish a rapport built on trust and respect, aiming to co-produce solutions. Clinicians often report struggling to know how best to raise the issue of weight with individuals (Blackburn et al, 2015) reflecting a “social awkwardness” about body size (Hales et al, 2016). When working with individuals, it is good practice to ask what terms they are comfortable using about themselves and reflect these. A simple question such as “How do you feel about your weight?” can be used for individuals of any weight status, acting as an invitation for the individual to discuss their weight, to a degree and in a manner that they feel comfortable. What is crucial is that whoever asks such a question,

actively listens to the response, not being distracted or on the way out of the door as the person replies, as weight status can be a sensitive issue. It is increasingly recognised that adverse psychological experience plays a significant role in people’s attitude to food and weight, with a complex interplay of bio-psycho-social factors increasing the risk of developing obesity (British Psychological Society, 2019).

TISSUE VIABILITY CHALLENGES

Excess weight leads to specific physiological changes that impact skin integrity. These include:

- ▶▶ Reduced tissue perfusion: larger body size means increased burden for cardiac and respiratory systems delivering essential oxygen and nutrients to tissues. These systems are frequently already compromised by changes to micro and macro circulation (Yosipovitch et al, 2007), raised intra-abdominal pressure, and reduced lung function caused by hypoventilation and hypercapnea (Camden, 2009).
- ▶▶ A chronic inflammatory state: white adipose tissue is now known to actively contribute to a pro-inflammatory state at a systemic level (Ellulu et al, 2017). Together these changes weaken skin integrity by increasing risk of skin breakdown, alongside impairing healing.
- ▶▶ An increased risk of pressure ulcer: recent studies in hospitalised individuals with BMI ≥ 40 compared with those BMI ≤ 40 (Drake et al, 2010), or of a healthy weight (Hyun et al, 2014, Ness et al, 2018) found increased risk for those BMI ≥ 40 .

People with bariatric care needs can have very deep skin folds, particularly where excess adipose tissue is located in the lower abdomen (known as a panniculus), which can stretch down to the knees or further (Figure 2), making mobility and self-care difficult. Other areas prone to deep skin folds are groins, buttocks (Figure 3), under the breasts, backs of knees, ankles, elbows and neck. People with excess weight commonly experience temperature dysregulation (overheating), due to thick layers of subcutaneous fat. Consequently, sweat becomes trapped in between skin folds. This combination of friction between the skin surfaces, along with accumulated moisture, makes these folds very prone to intertrigo, which can then often lead to secondary bacterial or fungal infection of the affected area (Garcia, 2002). As the primary treatment for



Figure 2. In people with bariatric needs excess adipose tissue can be located in the lower abdomen (known as a panniculus), which can stretch down to the knees or further.



Figure 3. Deep skin folds make it very difficult to comprehensively visualise and access the skin at the base of the fold. The impact of shearing, pressure and difficulty cleaning the skin are visible to the left buttock.

intertrigo is good hygiene, this can be difficult for individuals to manage independently, as they may be unable to reach round or access the affected areas fully (Rose and Drake, 2008).

Excess weight, particularly in the abdominal area, contributes to raised intra-abdominal pressure, hampering lymphatic return leading to lymphoedema. The accumulation of protein-rich lymphatic fluid reduces tissue oxygenation, making an ideal environment for bacterial infections, often presenting as recurrent cellulitis (Garcia, 2002).

Repeated infections and having a BMI ≥ 50 are both factors which can lead to a downward spiral, where lymphoedema can become difficult to resolve, even affecting the lower abdomen (Rose and Drake, 2008). Venous insufficiency to the legs is also common, resulting in chronic ulceration.

INDIVIDUAL PATIENT CHALLENGES

Inability to selfcare

People living with high BMI can find themselves experiencing reduced ability to self-care (Hajek and Konig, 2017), due to large body habitus and body shape. This particularly impacts mobility (Forhan and Gill, 2013) and personal care (Felix, 2008), including toileting. The inability to perform skin care to skin folds, or properly attend to self-cleaning post toileting can easily lead to irritant dermatitis (Figure 3).

Poor visibility and access

Skin folds, particularly in the abdomen, can be very deep (Figure 2), making it very difficult to comprehensively visualise and access the skin at the base of the fold. This makes accurate diagnosis and treatment of skin integrity within these folds extremely challenging.

Poor nutrition

Individuals with high BMI can have significant nutritional deficits (Ness et al, 2018) particularly if eating mainly processed food, which can be of high energy density but low nutritional value. Poor nutritional intake of protein, vitamins and minerals significantly impacts skin integrity, acting as an independent risk factor for pressure ulceration, alongside BMI ≥ 40 (Ness et al, 2018).

OTHER COMORBIDITIES

Multiple comorbidities are associated with excess weight (Guh et al, 2009). Those that specifically impact skin integrity are cardiovascular disease (hypertension, coronary artery disease, pulmonary embolism, dyslipidemia), type 2 diabetes, respiratory disease (sleep apnoea, asthma, hypoventilation syndrome), and stress incontinence (Beitz, 2014). The risk of these consequences occurring is dose dependent, being influenced by both the amount of excess weight and the length of time since onset (Bray et al, 2018). In addition excess weight is associated with anxiety, depression and low self-esteem, with

risk of depression independently increasing linearly with increasing BMI, such that people with BMI >60 show a 98% increase in risk of depression compared with those BMI 30–35 (Moussa et al, 2019a).

PROFESSIONAL HEALTHCARE CHALLENGES

Lack of evidence base to guide healthcare professional

Undoubtedly, one of the biggest challenges in this area is the lack of a robust evidence base to guide professionals tasked with providing best-practice care. What literature exists, focuses on prevention of tissue breakdown, warning of the high risk of skin breakdown for those with BMI >40, with several comprehensive overviews of the various challenges documented in the international nursing literature (Rose and Drake, 2008; Rose et al, 2009; Hyun et al, 2014; Beitz, 2014; Tickle, 2015). However, there is virtually no research-based evidence to guide practitioners about what to do once breakdown has occurred. A 2014 literature review found no examples of randomised controlled trials to inform care (Cowdell and Radley, 2014). Instead the authors concluded that “care is largely based on custom and practice or clinical opinion.” The need for research to grow the evidence base is long overdue, particularly given the rise in prevalence of this population. Historically, widely used clinical tools, such as Waterlow and Braden pressure risk assessment and the Malnutrition Universal Screening Tool (MUST), have meant clinicians focusing on the underweight population (Ambrose et al, 2013). A lack of staff training about excess weight and interventions available, means most hospital inpatients with high BMI are not referred for dietetic review, representing a lost opportunity to intervene (Ambrose et al, 2013). Now that the population with BMI \geq 40 exceeds that with a BMI <18.5 (Hales et al, 2018), there is a clear need to improve the evidence base and provide training to staff on appropriate care of this population (Royal College of Physicians, 2013).

Aims of (skin) care:

Care needs to be person-centred, with goals jointly agreed. Given that excess weight usually occurs over a long period, individuals have often developed coping mechanisms or systems to enable self-care (Rush and Muir, 2014). Consideration of these and

how they may be optimised to retain functional independence and reduce need for caregiver's assistance, is a good starting point for discussion. If weight is not reduced, individuals are at high risk of a poor outcome, including death (Moussa et al, 2019b) so sensitive discussions around anticipatory care are relevant. Skin care should focus on skin fold management and reduction of pressure damage risk, whilst maintaining functionality. Undoubtedly, all this can be very challenging to achieve, particularly in the home environment, where space and access to suitable equipment may be limited. There is growing evidence that care of people with bariatric care needs impacts staff resources, needing assistance from more staff and taking longer to perform (Rose et al, 2007, Felix, 2008).

Given the issues with overheating, use of a fan, together with loose cotton or moisture wicking clothing can help to minimise excess sweating.

Products such as Octenisan wash mitts (Schülke) can be very useful for cleansing of hard-to-access skin folds. The mitt design allows the wearer to sweep in between deep skin folds, requiring no rinsing and has a broad antimicrobial and antifungal action. The mitt is white, allowing the user to note colour of any fluid trapped in the skin fold, which can be helpful if visualisation of deepest area of skin fold cannot be achieved. Mitts can also be applied cooled, if overheating is an issue. Alternatively skin folds can be cleansed with non-perfumed, non-alcohol-based cleansers. Drying of the skin fold is essential but can be difficult to achieve thoroughly, due to problems accessing deep folds.

Regular application of barrier creams or sprays can help protect skin from maceration by bodily fluids, combating irritant dermatitis, particularly problematic in between skin folds, the groin area, perineum and buttock cleft. Moisturisers may be needed where skin is dry and prone to cracking, such as lower limbs and feet. Very large amounts of topical treatments may be required, due to the extensive surface area needing covered. A practical point here is to ensure adequate supplies of creams/ dressings are available. Making prescribers (GPs/ Nurse) and suppliers (chemist) aware of the large amounts being used is helpful, so that repeat prescription requests can be appropriately tailored upwards, reducing the need for very frequent repeat ordering, saving everyone's time and effort.

DRESSINGS

The primary advice is to refer for specialised tissue viability assessment and input. Several challenges relating to dressings can occur:

- ▶▶ Dressing adherence: excessive sweating makes the skin moist, leading to poor adherence, resulting in difficulties with dressing retention.
- ▶▶ Over adherence in certain areas: if the person is sitting for long periods, dressings applied to the sacral area can over adhere, simply due to the amount of pressure applied to the area as a result of high body weight. This can result in skin stripping and trauma to the area upon dressing removal.
- ▶▶ Dressings rolling up: difficulties in mobility, can mean the individual pushing themselves across bed/ chair surface to achieve optimal positioning. This motion can produce a high degree of shearing forces to the skin, making it easy for the edges of dressings applied to sacral/ buttock areas to become unstuck and roll up. This can lead to further pain and trauma of an already fragile area.
- ▶▶ Large areas of skin breakdown: skin breakdown can occur over much bigger areas than normal, as in *Figure 2*, with resultant large amounts of exudate. This causes problems finding dressings of a suitable size to cover areas. Even where suitably sized dressings exist, the high volume of exudate means that they quickly become saturated and heavy, prone to falling off. Thus they can require frequent reapplication. In hospital this may be manageable, but challenging to manage in the community where there is not the staffing resource for sustained, multiple visits throughout the day and night. Repeated dressing changes are time consuming for individual and staff alike, plus costly in terms of number of dressings used.

Such is the lack of guidance available around dressing choice, clinicians can find themselves trialing multiple dressing regimens to try to find one that is most acceptable and satisfactory to all parties.

PRESSURE AREA CARE

As mentioned earlier, the evidence base relating to pressure ulcers overwhelmingly relates to increased risk being present for those of high body weight (Drake et al, 2010; Gardner, 2013; Hyun et al; 2014) and the need for attention to prevention (Rose et al, 2009). A large part of this is ensuring adequate pressure relief for individuals. This can be complex

as it involves several additional factors of importance for higher weight individuals. Firstly, any equipment used needs to have a safe working load that can accommodate the individuals, which may mean the equipment is larger and heavier than standard equipment. Such equipment then necessitates further assessment of the environment to ensure that consideration has been given to floor loading capacity, or door width to ensure equipment can pass through. In addition, individuals with high BMI frequently prefer to adopt a more upright position when lying in bed, to promote respiratory function, which can be severely hampered if lying flat due to the weight on their chest (Rush and Muir, 2014). The size of bed also requires careful consideration. Individuals need enough space to be able to turn, which may require extra width as BMI rises (Wiggerman et al, 2017). However, a wider bed can also functionally disable someone by stopping them being able to reach bed/ hand rails to enable self-turning, meaning that caregivers both have to assist more and have further to reach when performing care, putting them at increased risk of injury (Muir and Archer-Heese, 2009). Choosing a suitable mattress has similar issues around size and weight capacity, with the added consideration of whether to choose a static or dynamic (pumped air) mattress. A particular problem can occur when getting in or out, if the individual sits on the edge of the bed for any length of time, resulting in “bottoming out” of cells through deflation, increasing the risk of the individual slipping off the bed. The microclimate at the surface of the bed is also important, ideally it should have a moisture wicking surface, given the excessive sweating often experienced by individuals with higher weight. Whilst normally pressure damage occurs over bony prominences, for individuals of high weight, atypical pressure damage can occur within large skin folds, or elsewhere from too tight clothing or equipment.

MANUAL HANDLING

A significant challenge when caring for individuals with bariatric care needs is safe movement and handling that promotes good care, whilst minimising risk of injury to caregivers. A fundamental goal is to maintain the individual's functional mobility as much as possible. As the person's ability to move declines, so the dependence on others and the risk of tissue breakdown increases. The availability of

Box 1. Useful equipment

Panniculus/limb sling
Mirror
Torch/head torch
Long-sleeve gloves
Kneeling pads
Hair dryer

specialist equipment is variable, with awareness and training of caregivers often lacking (Rose et al, 2009). Equipment is required to have a safe working load that can accommodate the individual, ideally with some extra capacity to allow for further weight gain in the future. Other essential features are that equipment is the right fit for the individual in terms of body shape and size, and that the environment is adequate to use the equipment safely (Hignett et al, 2007). This last requirement may be achievable in dedicated “bariatric” facilities in hospitals and care homes, but is often a major issue when caring for people in their own homes (Hignett et al, 2007), where space is limited and wooden construction floors are unsuitable for high loads. In order to cope with decreased mobility, individuals often place everyday items near at hand around their bed or chair, leading to them being effectively “boxed in” and making it difficult for either equipment or caregivers to get close enough to them to perform optimal manual handling. The range of equipment available to assist people with bariatric care needs is growing, with some items becoming a standard part of core provision by statutory services. In addition to a mobility assessment, a risk assessment regarding mobility should be considered, particularly assessing risks of skin breakdown, potential for falls and method of evacuation in case of falls or emergency such as fire or flood. Frequently overlooked are risks to staff, such as the risk of being crushed if kneeling to perform care to legs whilst the individual is standing or elevating a heavy limb during dressing changes (Beitz, 2014). As *Figures 2 and 3* demonstrate, skin folds can be very deep, or clefts very tight, making it difficult to access or visualise skin to be able to perform care. The moving and handling of either a very large abdominal panniculus, or the elevation of a large, oedematous limb to enable skin care or dressing, are both good examples of potentially risky manoeuvres due to the size and weight of the affected area, and thus, effort required by the individual or caregivers. Ideally these manoeuvres should be mechanised, using lifting or panniculus slings to support the affected area. One problem with panniculus slings is that the skin in contact with the sling cannot be itself be accessed for cleansing, although designs that include removable flaps in this section to promote access are becoming available. Further development of suitable

equipment is required for these emerging situations. If mechanisation is not possible, alternatives include breaking down the manoeuvre into smaller steps, such as moving one side of the panniculus, then the centre, then the final side, or involving more staff to reduce load on individuals.

Box 1 lists smaller items of equipment that can assist caregiving. A stand-up mirror can be very effective for visualising backs of legs if the individual is sitting in a chair, or perineal/inner thigh area if person is standing. A (head) torch can promote examination of deep skin folds. Long-sleeve gloves are essential to be able to perform care to deep skin folds without contamination of caregivers’ forearms, thereby promoting infection control. A hairdryer (used on cool) or fan can promote thorough drying/ moisture control of skin (Pokorny et al, 2009). Provision of kneeling pads for staff enables lower level working, such as lower leg/ feet skin care.

Much of the research undertaken and guidance available relates to hospital or care home environments. Here the caregivers are relatively in control of the environment and although there remains much to be improved, increasingly provision is being made for people with bariatric care needs. In contrast, health and social care services for community-dwelling individuals in their own homes, have less direct control of the care environment, needing to negotiate standards and boundaries of care provision, with regard for both staff and the individual’s well-being. It cannot be assumed that individuals will share the same priorities as caregivers or understand the constraints on services, such as ensuring staff safety. Recommendations for frequent personal care, including changing position every 2 hours may be difficult for community services to achieve in a sustainable way, especially given the need for extra staff to facilitate safe care. Sensitive discussion and negotiation regarding expectations of staff is required.

BROADER CONSIDERATION BY MULTIDISCIPLINARY TEAM

Aside from tissue viability needs, are broader considerations of holistic individual well-being, requiring wider multidisciplinary team involvement and planning. Referral to Weight Management should be offered to the individual, although potential for sustained weight loss is limited (Bray

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- et al, 2018). Rehousing may need to be considered, with local authorities in the UK beginning to provide specialist housing for people with bariatric care needs (Aberdeen City Council, 2018). Individuals with bariatric care needs are at relatively high risk of cardiac or respiratory events, with increased susceptibility to sepsis or falls. Thus anticipatory plans need to be made for safe evacuation. This requires early involvement of ambulance services to assess and establish a plan. For the most complex cases, the involvement of fire and rescue services, or structural engineers to assess floor and stair loading may be required. Even in care institutions, evacuation plans need considered as normal plans may not suffice (Gray and Macdonald, 2016). Given the increased risk of a negative clinical event happening, anticipatory care planning is strongly advised, including discussion around resuscitation status and close communication with out-of-hours services.
- In view of the social isolation and poor mental health experienced by many with a high BMI, psychological assessment and subsequent provision of psychological support should be considered (British Psychological Society, 2019). This may involve planned intervention, but also signposting to out-of-hours helplines like the Samaritans and Headspace. Excellent sources of peer support can increasingly be found online, through organisations such as Obesity UK (<https://www.facebook.com/Obesityuk/>) or the Obesity Empowerment Network (<https://oen.org.uk>).

CONCLUSION

Despite the growing numbers of individuals with bariatric care needs and long-standing calls to fill the evidence gap in this area (Rose and Drake, 2008), more questions than answers remain regarding skincare for this at-risk population group. Whilst clinicians may have an increased awareness of risks to manage, once breakdown occurs there is little research-based evidence to guide practice. Individuals with bariatric care needs are an underserved population, who often have complex clinical presentations. More research is needed to provide guidance to clinicians and promote positive outcomes for affected individuals.

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