



Baring all: The impact of the hospital gown on patient well-being

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Objectives. The importance of personalized and dignified care is increasingly being recognized in health care policy and practice. Despite the known impact of clothing on social identity and self-expression, the impact of hospital clothing on patient well-being has been widely overlooked. Patients are often required to wear hospital clothing, commonly a backless gown, during medical procedures and surgeries. The impact of wearing patient clothing on well-being, during this time of vulnerability, was explored.

Design. A sequential multi-method approach consisting of two studies.

Methods. Two studies were carried out to consider the impact of the hospital gown on well-being among adults with and without chronic health conditions. The first study consisted of conducting in-depth, semi-structured interviews ($n = 10$) with adults living with a lifelong chronic health condition (congenital heart disease). The second study was a cross-sectional online survey exploring adults' views ($n = 928$) and experiences of wearing the hospital gown.

Results. Qualitative analysis identified the following master themes: (1) symbolic embodiment of the 'sick' role, (2) relinquishing control to medical professionals, and (3) emotional and physical vulnerability. Quantitative analysis of the online survey data indicated that adults often reported wearing the hospital gown despite a lack of medical necessity. Its design was considered to be not fit for purpose and lacking in dignity.

Conclusions. The implications of these findings for health policy and practice are discussed, emphasizing the importance of challenging cultural norms in health care since dehumanizing aspects of care, as symbolically represented by the hospital gown, may adversely impact on patient well-being.

Statement of contribution

What is already known

- Getting dressed is a form of self-expression, which contributes to the construction of social identity, yet few studies have explored the impact of wearing hospital clothing on patient well-being.

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- The few studies on hospital clothing that exist suggest it is predominantly associated with feeling depersonalized, stigmatized, and devitalized, being in the 'patient role', low status, and a lack of control and privacy.
- However, previous studies include a variety of hospital clothing including pyjamas (Edvardsson, 2009) and dressing gowns (Topo & Iltanen-Tähkävuori, 2010), whereas in the United Kingdom, a 'one-size-fits-all' backless gown, held together with ties at the back, is most commonly used.

What this study adds

- This study furthers understanding about the lived experience of wearing hospital clothing for people living with a chronic health condition (congenital heart disease) and without.
- Wearing hospital clothing (most commonly the hospital gown) was associated with symbolic embodiment of the 'sick' role, relinquishing control to medical professionals, and emotional and physical vulnerability for people living with a chronic health condition.
- Findings from a wider sample, drawn from the general population, suggest that the hospital gown is often being used despite a lack of medical necessity often leaving patients feeling exposed, self-conscious, vulnerable, uncomfortable, cold, embarrassed, and disempowered. These findings are exacerbated for people living with a long-term health condition and women.
- Together, these studies suggest that the current design of the hospital gown is not fit for purpose and impacts negatively on patient well-being.

Contemporary medical practice encompasses a person-centred approach with dignity and privacy being fundamental cornerstones of patient care (Fix *et al.*, 2018). Yet, these tenets are potentially challenged when patients are required to remove their own clothes and wear hospital clothing for medical procedures and treatments. The impact of wearing hospital clothing has received little attention in contemporary psychological research, despite studies reporting that getting dressed is a form of self-expression (Suha & Sharif, 2018). Whilst clothing can empower the wearer (Guy & Banim, 2000), it can also induce psychological distress, feelings of disempowerment, and lowered self-esteem (Martins *et al.*, 2007). Beyond the evident protective element of clothing, it operates as a cultural communicator in everyday life by expressing social status, gender, occupation, religion, personality, and individuality contributing to the construction of social identity (Creekmore, 1974; McNeill, 2018).

Despite this, few studies have considered the impact of hospital clothing on psychological health and well-being. Of the few studies that exist, one conducted across 5 teaching hospitals in Canada asked physicians to consider whether they would agree to their patient wearing lower-body garments if requested. They found that of 127 patients included in the study, only 14 were wearing lower-body garments despite the fact that 57 patients were deemed eligible to do so (McDonald *et al.*, 2014). A small grounded-theory study based on individual interview evidence from patients based in Sweden (Edvardsson, 2009) suggested that whilst hospital clothing may represent, for some, being cared for, it is predominantly found to be depersonalizing, stigmatizing, and devitalizing. Topo and Iltanen-Tähkävuori's (2010) qualitative study, which considered hospital clothing from a patient and carer's perspective, in both hospital and residential settings, found that it was associated with being in the 'patient role', low status, and a lack of control and privacy. Carers also reportedly noticed that patients took more responsibility for their own care when they reverted to wearing their own clothing. In these studies, hospital clothing was described as resembling pyjamas (Edvardsson, 2009) and a variety of clothing including dressing gowns were considered (Topo & Iltanen-Tähkävuori, 2010). In the United

Kingdom, a 'one-size-fits-all' backless gown, held together with ties at the back, is commonly used to provide access to medical professionals for examination and medical investigations whilst assisting infection control and protecting everyday clothing from soiling with bodily fluids (Jenkinson *et al.*, 2006). The employment of such a revealing garment, worn without underwear, may compromise modesty and invoke embarrassment, particularly for women (Meerabeau, 1999; Walburg, *et al.*, 2013).

Given the apparent limited studies conducted to date, the current research sought to consider the impact of hospital clothing on patient health and well-being among adults with and without chronic health conditions, using a sequential multi-method approach (Cameron, 2009). It involved qualitative (Study 1) and quantitative (Study 2) components that were relatively complete on their own, yet when used together formed essential components of the research project (Morgan, 2007, 2014). Thus, each study was planned and conducted to answer particular subquestions, and the results of the research triangulated (see Figure 1) to form a comprehensive whole (Flick, 2018).

The first study sought to gain an in-depth understanding of the perspectives and experiences of wearing hospital clothing among adults living with a lifelong medical condition (Study 1). The impact of wearing hospital clothing is of particular relevance to people living with a long-term medical condition that requires lifelong medical intervention. As such, the research team decided to focus on adults living with congenital heart disease (CHD). CHD is the most common congenital anomaly describing a range of cardiac conditions, which vary widely in complexity, affecting 1 in every 125 live births (Chen *et al.*, 2018). Medical and surgical advances have improved survival rates for this population into adulthood by 75% since the 1940s (Ooues *et al.*, 2018), resulting in a growing population of adults with CHD (Greutmann *et al.*, 2015). It was hypothesized that such adults would have wide-ranging lived experiences of wearing hospital clothing since throughout the life course, they may require medical procedures that often involve the wearing of hospital clothing. Such medical procedures are often experienced as painful and frightening and cause feelings of helplessness and a sense of life threat (Meentken *et al.*, 2017). Understanding the impact of wearing hospital clothing at such times of severe stress and vulnerability has yet to be explored.

Given that the majority of adults may have had to wear the hospital gown at some point in their life trajectory, it was considered important to gain a more general understanding of adults' views and experiences of wearing this form of hospital clothing (Study 2); a cross-sectional online survey was used to collate these data. The research team were interested in understanding whether the difficulties described by people wearing the gown were more prevalent among adults with long-term health conditions. Further, from Study 1 it was evident that wearing the hospital gown was associated with feelings of vulnerability and exposure, particularly for women, who commented on being unable to wear a bra. As such, gender differences were explored to ascertain whether women were more likely to report feeling vulnerable and exposed wearing the hospital gown than men. Ethical approval was sought and granted by two University Ethics Committees prior to commencing with both studies.

STUDY I

Aims

This study aimed to explore personal accounts of wearing the hospital gown provided by adults with CHD (Phase 1); this study sought to inform the next stage of the research process (Phase 2).

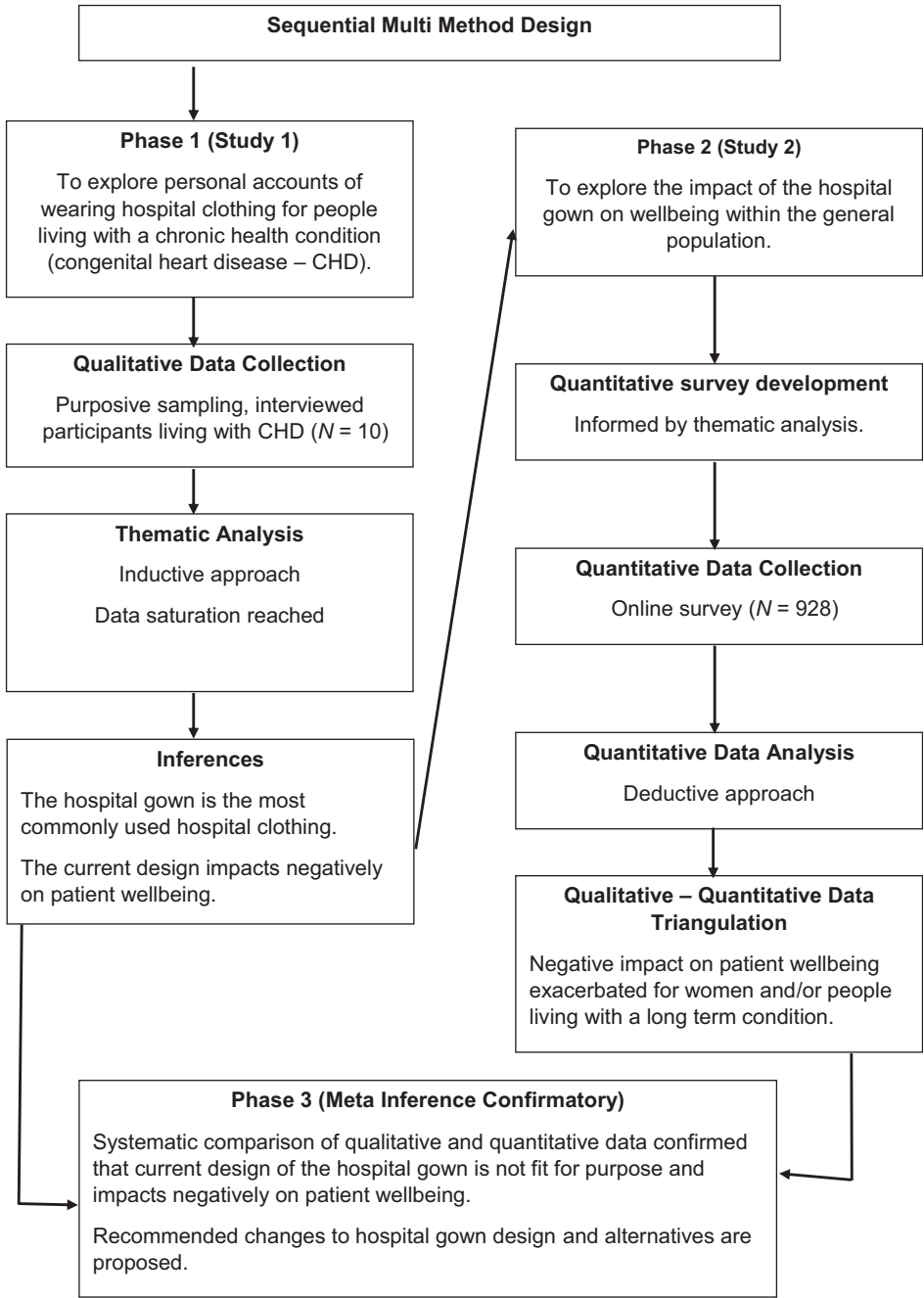


Figure 1. Sequential Multi-Method Design employed.

Methods

Participants

A purposive sample of participants ($n = 10$) was obtained whereby the data collection process was monitored according to both theoretical and pragmatic grounds (Morgan,

2007). As is recommended for interview research that has an ideographic aim (Malterud *et al.*, 2016), this sample size was considered sufficiently small for individual participants to have a locatable voice within the study, allowing for an intensive analysis of each case to be conducted.

Participants were considered eligible for the study if they: were aged 18 or over; had a congenital heart condition; had lived experience of wearing the hospital gown; and were able to provide informed consent to their participation in the study. Adults with CHD who were considered to be mentally and/or physically unwell during the conduct of the study were excluded. The mean age of the participants was 39 ($SD = 10$) within a range of 19–52 years. There was a gender split of six females: four males. All participants' ethnic origin was within the United Kingdom. Information concerning the participants' demographic background is detailed in Table 1.

Recruitment

Participants were recruited through a charitable body for adults living with CHD within the United Kingdom. Adverts for the study were posted on the charity's newsletter, social media platforms, and website. Those who responded to study advertisements contacted the chief investigator through their university contact details to convey their interest in the study. Potential participants were offered the opportunity to ask questions about the study. Following initial screening by the chief investigators to ensure participants met the criteria for taking part in the study, and with permission from participants, their contact

Table 1. Details of participants in Study 1

Name	Age	Gender	CHD diagnosis	No. of hospitalizations	No. of gown	Last hospitalization
Camilla	47	F	Tetralogy of Fallot	5	5	2011
Rebecca	42	F	AVSD, mitral valve regurgitation	4	4	2010
Stephanie	19	F	Dysplastic aorta	6	5	2018
Helen	52	F	Marfan syndrome, aortic valve, mitral valve, aortic root, atrial fibrillation.	15	210	2017
Kevin	39	M	Transposition of the great arteries	10	20	2018
Callum	49	M	Aortic stenosis, mitral valve regurgitation, endocarditis	9	~20	–
Jenny	47	F	ASD, AVSD, mitral valve repair, aortic stenosis	~15	~180	2015
Nicola	33	F	Shone's syndrome	~40	~90	2019
Billy	29	M	Transposition of the great arteries	6	8	2019
Jack	38	M	Transposition of the great arteries, tricuspid valve, VSDs, ASD, pulmonary stenosis, modified Fontan	18	11	2015

details were forwarded on to one of the research team members. A research team member then contacted the participant by phone to discuss the study and their participation. Participant information sheets were then sent electronically to each participant, who were given a period of a week to read information and to ask any questions, to ensure informed consent. Each participant was then contacted again to ask whether they still wanted to take part in the study. Participants were then sent a consent form to complete, and a suitable time and date to conduct the interview was arranged. Having received the signed consent form from the participants, the interview was conducted.

Research process

Study 1 used an inductive qualitative design with semi-structured individual interviews in accordance with a pragmatist methodology. The interview schedule consisted of 14 open-ended questions, which were developed by the research team in order to address the specific aims of the current study. The questions developed were informed by previous research (Edvardsson, 2009; Topo & Iltanen-Tähkävuori, 2010) and piloted before agreement of the final interview schedule. It included questions that aimed to explore participant's experiences of patient wear, for example, 'How does patient wear impact on your wellbeing?'; 'How does patient wear impact on your body-image?'; 'How does patient wear relate to your identity?'; 'How do you feel when you are wearing patient wear?'; 'How do you feel others react to you when in patient wear?'; and 'How do you think patient wear could be improved?'

Interviews ranged from 39 min to 1 hr and 6 min (mean of 55 min). Interviews were conducted face-to-face ($n = 6$) or via video call ($n = 4$), according to participant's preference and availability. Prior to commencing interviews, the audio equipment was tested to ensure both interviewee and interviewer voices were audible. Upon conclusion of the interviews, the audio equipment was switched off and participants received written debriefs.

Audio-recorded interviews were individually transcribed in full verbatim. The primary interest was in the content of the interviews; therefore, it was sufficient to transcribe what was being said (the words), although selective transcription notation was found to be useful. That is, on occasions where reference to non-linguistic features of speech was considered to be of significance in the interpretation of what was being said by the participants, notations were made during the transcription process. This allowed the inclusion of non-verbal communication and behaviour of the participants during the course of the interviews that may have been relevant in the wider analysis of the research findings.

The qualitative data stemming from the transcripts were managed with the software program NVivo (Richards, 1999), which facilitates the storage, analysis, and retrieval of textual information. Each data file originating from individual interviews with participants was imported into NVivo and coded with a brief descriptor of the information contained in each file. Having a set of ten interview transcripts, data saturation occurred after nine analysed transcripts; the final transcript was used to substantiate the themes outlined (Guest *et al.*, 2006).

Analysis

Quality criteria were used for the reporting of the qualitative data (Shaw *et al.*, 2019) to improve the trustworthiness and credibility of the data collection and analytical process

(Nowell *et al.*, 2017). First, purposive sampling was utilized to ensure that the participants who were recruited met the inclusion/exclusion criteria in accordance with the research question to be explored (Tracy, 2010). In order to increase the transparency of the methods used, detailed information concerning the analytical process is outlined. The data were analysed in accordance with a theoretical thematic analysis (Braun & Clarke, 2006; Braun and Clarke, 2012) in order to address the exploratory nature of the study. This approach is a useful method for identifying, analysing, and reporting patterns within data through the use of an in-depth description of themes. First, this involved becoming closely familiar with the data by reading and re-reading the interview transcripts. Following this close reading, initial codes were generated through focusing on what the participants were saying in relation to their experiences of patient wear and the impact on health and well-being. This consisted of identifying meaningful extracts and codes accordingly. In accordance with the specific aims of the research question, the data were analysed with this in mind. Each segment of the data that were relevant to, or captured something meaningful about participants' personal understandings and subjective experiences of patient wear and the impact on their health and well-being was coded. The codes were developed and modified throughout the coding process. At the end of this step, the codes were organized into preliminary themes that seemed to say something specific about the research question. The data associated with each preliminary theme were read and re-read and considered as to whether it really did support it. The themes were then examined in order to ascertain whether they worked in the context of the entire data set. The themes were then refined; all the data relevant to each theme were extracted, and a process of defining and naming the master themes commenced. Themes are key characters in the story being told about the data (Clarke & Braun, 2018). Each master theme and associated subtheme was actively created by the lead researchers. Each theme unites data that, at first sight, might appear disparate, capturing implicit meaning beneath the data surface (Braun *et al.*, 2014). The final strategy adopted was through a process of triangulation, whereby preliminary themes developed by the lead researchers were cross-checked by the co-researchers who had expertise in qualitative research in applied health psychology. Themes were discussed among researchers until a consensus had been met on the definitions of each theme. Reflexivity throughout the research process was adopted through the lead researchers maintaining reflective journals (Braun & Clarke, 2019) and by the research team holding regular reflexive meetings to help manage pre-assumptions and identify blind spots in the interpretation of the themes (MacIntyre *et al.*, 2019). Quotes from the transcripts that captured discrete aspects of each theme were identified. This procedure resulted in three master themes and associated subthemes that addressed the aims of the study and were present within all ten interviews; data saturation had been reached (Ando, *et al.*, 2014). A final thematic map (see Figure 2) was developed, which illustrates the relationships between themes.

Differences between the participants' accounts are highlighted. In illustrating the themes from the data, any names used in the interviews have been changed to pseudonyms. Words or phrases inserted to clarify meanings are enclosed in brackets.

Results

Qualitative analysis identified the following master themes and associated subthemes: (1) symbolic embodiment of the 'sick' role (loss of healthy identity), (2) relinquishing control to medical professionals (passive acceptance and disempowerment), and (3) emotional and physical vulnerability (cold, exposed, and not fit for purpose).

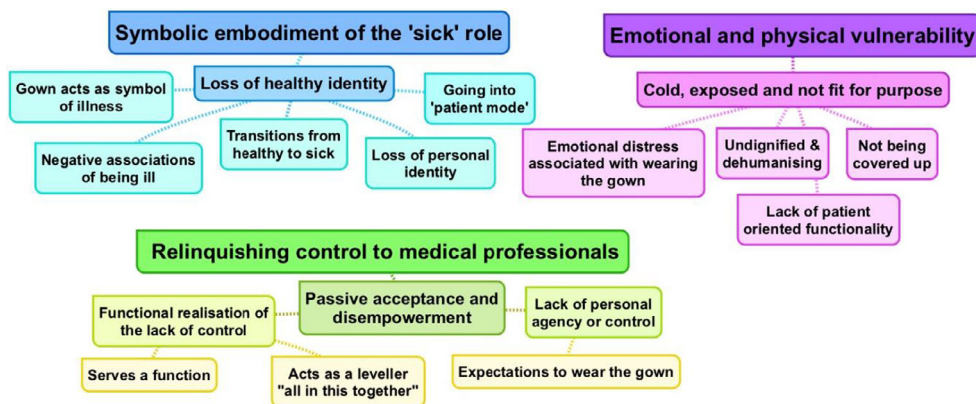


Figure 2. Schematic Diagram of Themes from Study 1.

Symbolic embodiment of the 'sick' role (loss of healthy identity)

Apparent in all of the participants' personal accounts of their experiences of wearing the hospital gown was the symbolic embodiment of the sick role. Being told to wear the gown whilst undergoing medical procedures and intervention(s) had an impact on how participants perceived themselves. The gown acted as a symbol of 'illness' (Rebecca) and 'a negative association of being severely unwell' (Billy), representing the seriousness of living with CHD. This point was captured in Stephanie's account:

If you put on a hospital gown it sets in that something is wrong. That makes things all the more real, at least in my experience. So I guess there would probably be an association between that feeling and the hospital gown.

Wearing the gown represented a shift in participants' psychological state, a transition from a 'healthy' to 'sick' identity, which had implications for how participants felt within themselves. During pacemaker checks and changes, the wearing of the hospital gown appeared to evoke their sense of being unwell, as Kevin articulated:

Psychologically, suddenly when you put it on you're now 'ill', so for a scan, I'm fine going in, nothing's wrong with me, they're just doing this to ensure everything's flowing the way it should, for the pacemaker change, and then when you put that gown on you suddenly feel a bit more vulnerable. I went in with just a pacemaker change so there was nothing wrong with me, I wasn't feeling unwell type thing, but again you put that on (the hospital gown) and you just zone out (pauses), there's a psychological element to it. I would say that when the gown comes out there is something somewhere that psychologically goes 'this is serious, I'm ill'.

The hospital gown, in itself, contained customary obligations and expectations based on the social and cultural norms associated with wearing it and 'being sick' (Helen). Significantly, participants referred to being in 'patient mode' (Billy), whereby the removal of their personal clothing and the use of the hospital gown 'stripped' (Jack) them of their personal identity. Their sense of having a 'healthy' identity was perceived to be lost and replaced with that of 'becoming this hospital patient' (Camilla). Loss of control of one's own personal identity permeated participants' responses, as they described the hospital gown as being 'almost prison-like' (Rebecca), 'a uniform' (Kevin), and symbolic of being 'in an institution' (Callum). A loss of personal choice and the experience of feeling

dehumanised whilst wearing the hospital gown were evident in Rebecca's reflections on interactions with health care professionals:

There's nothing individual about it. It's a little bit like you're just a patient, another number. They (healthcare professionals) don't even say like 'do you want to put this on?' 'Are you comfortable?' It's just like 'you know the drill'. That's what the last one said to me. It's like you've already dehumanised me before I've put the clothing on. You're like a piece of flesh, you're not a person. As soon as I get into my own clothes, I feel like my own persona again. So you definitely just feel like a (pauses) I don't know, like a piece of packaged meat. You know, in a conveyer belt of sickness.

The removal of personal items whilst wearing the hospital gown (e.g., undergarments, jewellery, and phone) was found to have further created a state of 'uncertainty' (Nicola), 'vulnerability' (Camilla), and 'discomfort' (Stephanie). The loss of 'healthy' self was captured by Helen's account of having to wear a hospital gown whilst waiting to undergo a medical procedure as an outpatient:

I mean, you don't feel like yourself in the sense that you're not wearing your own clothing. It's just strange, and actually I've been through (medical) procedures in recent years and it's like, you're not sitting with people who've got their clothes on, everyone's sitting in gowns but it's just sort of uncomfortable.

Relinquishing control to medical professionals (passive acceptance and disempowerment)

Participants described how they often relinquished control to medical professionals; this was reflected in their passive acceptance of having to wear the hospital gown as a part of an obligatory procedure to follow based on recurrent experiences, often from a young age. It was apparent that there was a lack of personal choice as to whether participants had to wear the gown; rather, 'There's the expectation that this isn't their top priority, so you just get what you're given and that's it' (Kevin). All of the participants recognized that there were times when wearing the gown, due to lack of appropriate alternatives to wearing it, was their only option. The lack of personal agency induced by having to wear the gown left participants feeling like they were unable to question its use, as captured in Camilla's account:

Well I mean it's (stuttering) there for a purpose and, you know, I didn't question why I should wear it.

Rather than challenge its necessity or seek possible alternatives to wearing the hospital gown, all of the participants made reference to their experiences of conforming to the expected protocols and procedures associated with wearing the gown. The need to invest trust in medical practitioners was evident in Jack's reflections on having to wear the gown whilst undergoing medical procedures since he was a child:

I think I'm (pauses) pretty controlled. I'd say it lowers you're mood, you know, the fact that you're gonna go somewhere and obviously to an operation and trusting a team of people who are going to look after you in a very vulnerable time, you know, obviously you think things have got to go right with the anaesthetic and the respiration and you trust that they can do that and normally I do because they're a team that have always done my operations since I was a child but I think it's just that it leads to feeling controlled. I think it's partly down to this sort of

insistence on wearing something (hospital gown) which is not something that you would choose to wear.

Feelings of disempowerment associated with wearing the hospital gown were evident in all of the participants' accounts. The notion that there was little personal agency or control relative to that of the medical practitioners permeated descriptions of their lived experiences, as Camilla recounted:

It's all part of the whole process of not being in control, not being able to wear your own clothes and not being able to do what you want to do and then you have to let the medical team sort of take control of everything. When you're wearing the gown, you've got to give them the time to do what they're doing, it's sort of almost like okay you've got the gown on now you're ready for me.

Emotional and physical vulnerability (cold, exposed, and not fit for purpose)

Emotional and physical vulnerability, associated with wearing the hospital gown, was a pervasive issue raised by all of the participants. They made reference to the challenges they had faced in living with CHD, including their experiences of having to undergo a multiplicity of medical procedures throughout their lives. Consequently, participants had extensive experience of having to wear the hospital gown. The perceived 'lack of choice' (Nicola) in terms of possible alternatives to the gown and the 'undignified' (Jenny) design of the gown further exacerbated this sense of vulnerability. All of the participants made reference to feelings of emotional distress associated with wearing the gown, such as 'fear' (Helen), 'anxiety' (Jack), 'worry' (Rebecca), 'guilt', (Stephanie), 'shame' (Kevin), 'stress' (Nicola), 'anger' (Callum), and 'low mood' (Rebecca). Wearing the gown was linked with situations (e.g., awaiting surgery, undergoing pacemaker change, post-operative procedures) that were often comprised of cognitive uncertainty and were experienced as being a disorientating period. A few of the participants associated the hospital gown with 'trauma' (Stephanie) and 'threat' (Jack) experienced within medical settings; Jenny identified the hospital gown as being a 'trigger' for traumatic memories:

It's like a part of it is like the trigger, it actually feels like a trigger. Soon as you put it (hospital gown) on. Soon as you're handed it you get the feelings like these fears and anxieties to the point that when you get to certain stages I have to shut down, you can't cope (pauses), I can't cope. I go and shut down cause it's the only way I can get myself through certain parts and then when you're hospitalised, you don't take in information. I think the clothing is a part of that, it's just (sighs) the clothing is a trigger.

Feelings of being 'cold' (Helen) and 'exposed' (Billy) whilst wearing the gown were evident in all of the participants' personal accounts. Perceived problems with gown sizing and fit created further issues in terms of participants feeling 'self-conscious' (Billy) and 'embarrassed' (Helen). Given the open-backed nature of the gown, participants sought to try and conceal themselves, as highlighted by Callum:

I don't really like displaying my (body) parts to everybody so with the gown you're quite often trying to turn your back on something, trying to cover yourself up or sit down with these gowns, there's basically nothing underneath so if you're sat down it can ride up your leg and people can walk past and see other things.

Further, female participants reported specific issues around their compromised modesty due to 'not wearing a bra. I'm kind of uncomfortable and in a vulnerable position' (Stephanie) and feeling self-conscious as 'your boobs are out and everything's out'! You're trying to covering it' (Jenny). Jenny further described her sense of feeling exposed when wearing the gown:

I'm not even a person anymore. So this can be really hard especially when they (exhales sharply) take your ECGs and they'll ask you to take your bra off and they go 'oh put your gown on back to front so it ties at the front'. You just feel exposed.

The apparent lack of 'patient-oriented' functionality of the gown resulted in participants feeling insecure and unsafe, which further heightened their sense of feeling both emotionally and physically vulnerable whilst wearing the gown. This point was captured by Camilla as she described how she felt wearing the gown inhibited proper concealment:

They have some strings to tie them and they never really feel secure, I know they probably are but you don't have the sense of 'this is going to stay on', as I say whenever you're having the scans, you know, they obviously have to get to you and have to open the gown but that at the same time when you put it on you don't feel like even to begin with that its particularly covering you.

Importance was placed on the need to feel 'protected' (Billy), 'covered up' (Stephanie), and 'safe' (Jack) and to maintain one's 'dignity' (Nicola) whilst undergoing medical procedures and interventions. All of the participants were of the opinion that the opened-back hospital gown was not fit for purpose and they made helpful suggestions as to how its design could be improved upon. This included having 'velcro' (Jack) fasteners at the front or side instead of straps at the back. They suggested having 'different sizes' (Kevin) to accommodate for different body shapes and sizes. Finally, participants placed emphasis on the need for patient choice and to have options in terms of wearing alternatives to the gown as being a means to patients regaining some control and dignity within medical settings.

Study 2

Aims

This study aimed to build on Study 1 by exploring the impact of the hospital gown on well-being within the general population (Phase 2). In addition, we were interested in exploring the differences in well-being between people living with a long-term health condition and those who are not and whether there were any gender differences.

Methods

The second study was a cross-sectional online survey that sought to explore adults' experiences and views of wearing the hospital gown. Apart from the demographic questions, research questions related to the nature of the participants' experiences (i.e., 'Do you think wearing a hospital gown made you feel any of the following? – select all relevant responses') and they were answered based on positive and negative adjectives (i.e., 'uncomfortable', 'clean', 'safe', 'cold', and 'exposed'). The survey also included

open-ended questions that allowed participants to add their own views. The survey was created for the needs of the current study, and the questions developed were informed by the themes that emerged from Study 1. This second strand sought to be confirmatory of the inferences made in Study 1 (Tashakkori & Teddlie, 2003) as data were triangulated (Flick, 2018).

The scale was posted online via the Qualtrics platform, and participants were recruited via social media and posters distributed around the university and online. Ninety-eight ($N = 908$; 97.8%) per cent of the participants had the experience of wearing a hospital gown showing appropriate representativeness of the sample regarding the research questions at hand.

Responses were analysed on a binomial way (yes, 1; no, 0), and effects were calculated through cross-tabulations and Pearson chi-square based on significance rates and in relation to the categories under examination. Statistical power exceeded .80 based on two independent study groups and binomial endpoints for the performed calculations (55% to 45% anticipated incidence, alpha .05, $N = 782$) (Kane, 2019). Hypotheses included a significantly greater impact of wearing the gown on well-being for people living with a long-term health condition than those who are not and/or female participants than for male participants.

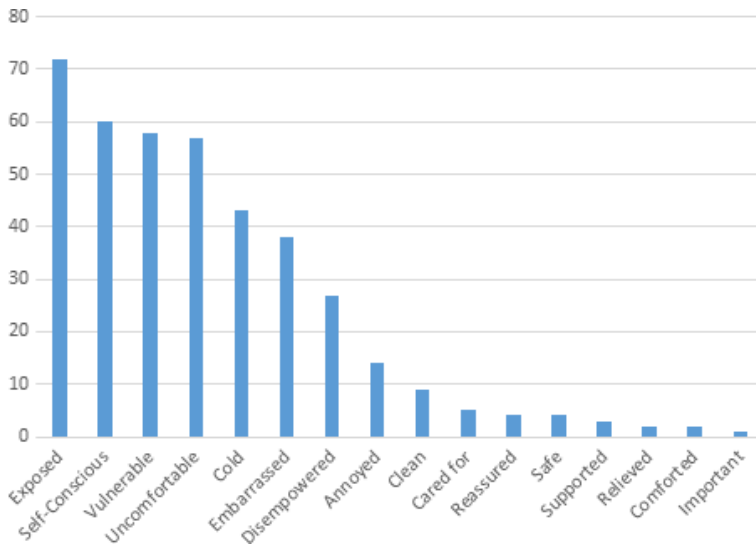
Results

Nine hundred and twenty-eight participants ($N = 928$, age range: 18–80 years; mean age: 43.62; SD : 12.48) completed the online survey. Participants were predominantly female (82%, $N = 760$), white, and living in the United Kingdom (86%, $N = 798$), with 46% ($N = 423$) identifying as having a long-term health condition. Table 2 provides further demographic information.

The general descriptive percentages of the second study are portrayed in Graph 1 and Figure 3 and largely confirm the findings of the qualitative study. Sixteen per cent of participants reported wearing the hospital gown despite feeling it was not medically necessary, whilst another 43% were uncertain if it was. Almost two thirds of participants (64%) reported struggling to put the gown on by themselves and 70% reported that it did not fit. About 41% of participants experienced 'double gowning' that is being offered a second gown to wear the other way around to protect their dignity; 58% reported it had or maybe had limited their activity; 75% felt it either did or maybe did influence how others saw them; and 70% felt it either did or maybe did influence how they saw themselves.

Table 2. Ethnic category of participants in Study 2

Ethnic category	Frequency (N)	Sample (%)
White British	820	88
White other	73	7
Prefer not to answer	14	1.5
Multiple ethnic group	11	1.1
Indian	4	0.4
Pakistani	2	0.2
Afro-Caribbean	1	0.1
Black African	1	0.1
Chinese	1	0.1
Other Asian	1	0.1



Graph 1. Percentage of participants responding on how wearing the hospital gown made them feel per option (928 participants).

About 72% (670) of the participants report feeling exposed, 60% (554) feeling self-conscious, 57% (530) feeling vulnerable, and 58% (542) feeling uncomfortable when wearing the hospital gown. Significant results were found for gender (female participants reported feeling more vulnerable, exposed, and self-conscious) and long-term physical health condition (participants having a long-term physical condition reported feeling uncomfortable, vulnerable, annoyed, exposed, cold, self-conscious, and disempowered). Females suffering from a long-term physical health condition reported feeling uncomfortable, vulnerable, annoyed, cold, self-conscious, and disempowered. Male participants suffering from a long-term physical condition reported feeling uncomfortable and cold. Table 3 includes the details of cross-tabulations and Pearson chi-square calculations based on significance rates and in relation to the categories under examination.

Integrative findings

The process of integrating the research findings involved systematically listing and comparing the qualitative and quantitative data (Phase 3) in order to explicitly detail what each component added to the research area (Boeije *et al.*, 2013; Bryman, 2006). Through the combined qualitative findings and quantitative results, additional insights emerged (Creswell & Plano Clark, 2011). Study 1 explored the impact of wearing the patient wear for people living with a long-term condition (CHD) and found that participants recounted their experiences of wearing the hospital gown. It was apparent, from the themes to have emerged, that the wearing of the gown was associated with a range of adverse emotions, sense of loss (of healthy identity and perceived control), disempowerment, vulnerability, and exposure. Essentially, the gown was reported to be not fit for purpose, lacking in dignity and functionality. The findings from Study 2 suggested that the self-reported distress evoked by the gown was exacerbated for people living with a long-term condition. It was clear that wearing the hospital gown adversely impacted on adults' well-being, particularly if they were living with a long-term health condition. It was also

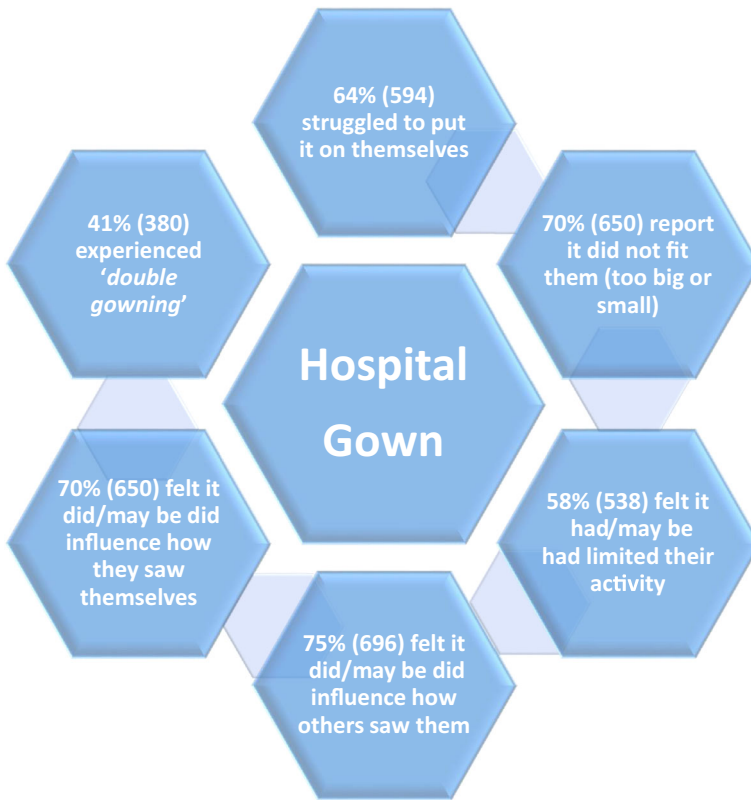


Figure 3. Responses to Study 2 for 928 participants.

apparent that female participants, perhaps due to their increased sense of exposure whilst wearing the gown, were significantly more likely to describe negative emotions associated with wearing the gown than male participants. Together, the findings from both studies generate important new insights about the cumulative impact of wearing the gown for people who are repeatedly exposed to wearing the gown as a result of living with a long-term condition. Further, issues around modesty may be exacerbated for women who are often unable to wear a bra when wearing the gown.

Discussion

The impact of hospital clothing on patient well-being was explored among adults both with and without chronic health conditions. Interview data were collected from members of the CHD population (Study 1), to explore individual lived experiences of patient clothing; the data generated revealed that participants largely drew upon their experiences of wearing the hospital gown. Findings from an online survey (Study 2) sought to enhance this understanding by including broader views from a much larger sample of people from the general population, although interestingly nearly half of these respondents self-identified as having a long-term condition.

Qualitative findings identified three master themes and associated subthemes: symbolic embodiment of the 'sick' role (loss of healthy identity), relinquishing control to medical professionals (passive acceptance and disempowerment), and emotional and

Table 3. Cross-tabulations and Pearson chi-square based on significance rates and in relation to the categories under examination. (The table includes only the significant results of the cross-tabulations for each examined category)

Overall N = 928				
Gender				
Females: N = 760 (82%)	Males: N = 168 (18%)	Chi-square	df	p Value
Vulnerable 468 (61)	72 (42)	$\chi^2 = 18.385$	3	.000
Exposed 564 (74)	103 (61)	$\chi^2 = 10.030$	3	0.018
Self-conscious 476 (62)	77 (45)	$\chi^2 = 18.388$	3	.000
Long-term physical health condition				
Yes: N = 423 (46%)	No: N = 505 (54%)	Chi-square	df	p Value
Uncomfortable				
264 (62)	261 (52)	$\chi^2 = 8.912$	1	.003
Vulnerable 274 (65)	269 (53)	$\chi^2 = 12.558$	1	.000
Annoyed 78 (18)	56 (11)	$\chi^2 = 10.067$	1	.002
Exposed 322 (76)	348 (68)	$\chi^2 = 5.965$	1	.015
Cold 216 (51)	186 (36)	$\chi^2 = 18.989$	1	.000
Self-conscious 280 (66)	274 (54)	$\chi^2 = 13.632$	1	.000
Disempowered 136 (32)	115 (22)	$\chi^2 = 10.262$	1	.001
Long-term physical health condition				
Gender Females: N = 760				
Yes: N = 346 (46%)	No: N = 414 (54%)	Chi-square	df	p Value
Uncomfortable				
215 (62)	225 (54)	$\chi^2 = 4.693$	1	.030
Vulnerable 238 (69)	230 (55)	$\chi^2 = 13.945$	1	.000
Annoyed 64 (18)	44 (14)	$\chi^2 = 9.573$	1	.002
Cold 180 (52)	159 (38)	$\chi^2 = 14.145$	1	.000
Self-conscious 239 (69)	237 (57)	$\chi^2 = 11.268$	1	.001
Disempowered 115 (33)	94 (22)	$\chi^2 = 10.485$	1	.001

Continued

Table 3. (Continued)

Long-term physical health condition				
Gender Males: N = 168				
Yes: N = 78 (46%)	No: N = 90 (54%)	Chi-square	Df	p Value
Uncomfortable				
48 (65)	37 (42)	$\chi^2 = 8.005$	1	.005
Cold				
34 (43)	26 (29)	$\chi^2 = 4.412$	1	.036

physical vulnerability (cold, exposed, and not fit for purpose). Findings from the quantitative study built on these findings suggesting that the hospital gown is often being used despite a lack of medical necessity with its design considered to be not fit for purpose. Further, it is lacking in dignity often leaving patients feeling exposed, self-conscious, vulnerable, uncomfortable, cold, embarrassed, and disempowered. Distress evoked by wearing the gown was found to be greater for females and people living with a long-term health condition.

Hospitalization is often seen as stressful and unsettling, and research indicates that social isolation, loss of autonomy and privacy, and feelings of vulnerability during hospitalization negatively impact on well-being and healthy coping abilities (Douglas & Douglas, 2004; Gammon, 1998; Heaslip & Board, 2012). Feeling as safe as possible, feeling empowered, and feeling in control are important neuropsychological protective factors in the face of threat against trauma-related disorders (Morton, 2015; 2018, 2020; Porges, 2011); conversely feeling objectified, powerless, and passive acceptance can contribute to their development (Brewin *et al.*, 2000; Hatcher *et al.*, 2009). As such, the combined findings from the current research suggest that limiting people's personal agency, perceived control, and choice through use of the hospital gown may add to the psychological burden of undergoing medical treatment particularly for those living with a long-term health condition, for example, the growing number of people who depend on lifelong medical interventions such as those with CHD, often from infancy throughout childhood, potentially impacting on the development of their sense of self, others, and the world. Adults with CHD are at significantly higher risk of depression, anxiety, and post-traumatic stress disorder than people in the general population (Deng *et al.*, 2016; Jackson *et al.*, 2018; Meentken *et al.*, 2017). Further, the extended exposure to stress from hospitalization has been suggested to cause a predisposition for future adverse medical events (Detsky & Krumholz, 2014). Reconsideration of hospital clothing could promote resilience and help to mitigate against some of these adverse psychological outcomes.

Standardized clothing and uniforms, such as prison clothing, are used by various institutions as a method of control (Foucault, 1963; Twigg, 2010) and punishment. It has been suggested that patient clothing provides a method for health care institutions to manage and control care (Topo & Ilanen-Tähkävuori, 2010). Interestingly, several participants in Study 1 commented on how wearing the hospital gown felt 'prison-like'. Conversely, uniforms and, for example, the white coat previously worn by health care professionals have also been found to enhance hierarchical power and status (Kwon & Johnson-Hillery, 1998). Creating this hierarchical power dynamic, between the clothed medical professional and the semi-stripped patient, has the potential to oppress patients. Oppression is shaming, a social emotion that is increasingly being linked to mental health problems such as anxiety, depression, and low self-esteem (Fennell, 1997; Gilbert, 2000),

whilst trauma is associated with pervasive feelings of shame (Levine, 2018). Further, integrated findings from Study 1 and Study 2 suggest that the hospital gown, worn without underwear, may compromise modesty and invoke shame particularly for women (Meerabeau, 1999; Walburg, *et al.*, 2013). In this way, employing the hospital gown may further contribute to psychological distress and negatively impact on health and well-being whilst being inconsistent with supporting patients' advocacy and self-management (Cole *et al.*, 2014).

Early rehabilitation treatment and recovery of the ambulatory function is essential for the best recovery of patients with a variety of conditions such as CHD (Ubeda Tikkanen *et al.*, 2018), stroke (Saunders *et al.*, 2016), kidney disease (Painter & Roshanravan, 2013), and orthopaedic care (Oldmeadow *et al.*, 2006). However, the combined findings from the current research suggest that the hospital gown, described as revealing and 'not fit for purpose', may contribute to limiting mobility adversely impacting on early rehabilitation.

Recommendations

Our findings suggest several areas for improvement in the design of the gown, including a tie at the side without open back, a design that is easier for people to put on by themselves, less revealing, more comfortable, a better fit, warmer, and able to accommodate medical equipment. Further, the use of the gown should be limited to medical necessity with patients changing back into normal clothing as soon as possible whilst avoiding having to wear it in public areas. Alternatives to the hospital gown are available. Cho (2006) tested reactions to alternative designs of hospital gowns with findings supporting a new and improved design. Improved designs have been proposed providing solutions not only for the user (i.e., easy to put on and adaptable to body size) but also for the hospital (i.e., low cost, secure to use) (Black & Torlei, 2013; Gordon & Guttmann, 2013). Indeed, a more suitable alternative to the current gown may not only be more dignified but also be cost-effective given the common practice of offering a second gown 'double gowning', reported in Study 2, as a poor solution to maintaining the patient's dignity. Yet, the acceptance of the backless hospital gown persists. Our study clearly supports both the need to challenge current practices and trial out new designs to improve psychological experiences during hospital care.

Limitations and further studies

Study 1 considered a specific population who have lived with a serious medical condition from birth (CHD) enduring lifelong medical interventions; therefore, the generalizability of these findings is arguably limited. However, the vast lived experience of these participants offers a unique insight into the issues faced by patients navigating the health care system. Whilst the comparability of face-to-face versus video interviews was not specifically explored within the scope of this study, as reported in earlier work (e.g., Weller, 2017), the researchers noted that participants who had engaged in face-to-face interviews appeared to be more open and they have found it easier to build rapport during the interview process.

Study 2 complements these findings from the general population, whilst the large sample of participants completing this survey demonstrates the public interest in addressing the issue of hospital clothing. It would be interesting to explore this further by considering the impact of hospital clothing on loved ones and caregivers in addition to the views of hospital staff.

A clear limitation of Study 2 was the fact that participants were mainly females (79%) of white ethnic origin, living in the United Kingdom. Unfortunately, it was not possible to control the age, gender, and ratios of our sample as recruitment was based on an online invitation. Future, studies could consider the impact on males and those from a more diverse ethnic origin. It would also be beneficial to develop a psychometrically sound measure of patient wear, to further build upon the current research and improve the generalizability of further work in this field.

Conclusions

The findings from the current research suggest that the opened-back hospital gown is not fit for purpose and should be redesigned to promote patient dignity, mobility, and well-being. Further, the use of hospital clothing should be limited to medical necessity with better consideration of the psychological impact of wearing this clothing on patient health and well-being. Inclusion of these recommendations in relevant health care policy and practice would benefit patients consistent with a person-centred approach, which prioritizes patient choice, dignity, and privacy. This work is part of a wider effort to promote psychologically informed medicine (PIM) (Morton, 2020) that emphasizes the importance of challenging cultural norms in health care since dehumanizing aspects of care, as symbolically represented by the hospital gown, may adversely impact on health and well-being, increase distress, and contribute to comorbid psychological disorders.

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Conflicts of interest

All authors declare no conflict of interest.

Author contributions

Liza Morton, PhD (Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Project administration; Supervision; Validation; Writing – original draft; Writing – review & editing) Nicola Cogan (Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Project administration; Supervision; Validation; Writing – original draft; Writing – review & editing) Susanna Kornfält (Data curation; Formal analysis; Writing – review & editing) Zoe Porter (Data curation; Formal analysis; Writing – review & editing) Emmanouil Georgiadis (Conceptualization; Data curation; Formal analysis; Investigation; Methodology; Writing – original draft; Writing – review & editing).

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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