

ETHICAL IMPLICATIONS OF DESIGN PRACTICES. THE CASE OF INDUSTRIALLY MANUFACTURED PATIENT CLOTHING IN FINLAND.

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In the following paper, we describe the actors and practices influencing design of patient clothing in Finland. We also discuss the ethical dimensions and issues that can be identified in this process and in decisions concerning patient clothing. In our data, designing patient clothing is represented as a highly complex net of conflicting needs. According to our findings ethical issues in patient design were associated with ethical principles of efficiency, beneficence, privacy and autonomy.

(This is a draft version of the paper.)

INTRODUCTION

When doing fashion design in the industrial context the designer has to take into account the design process and actors involved in it, the process of industrial manufacture, the viewpoint of sales and marketing, buyers, the context of use, and the physical and psycho-social needs of clients and users (Iltanen 2007). These aspects equally apply to designing patient clothing used in care environments. However, there are features in designing patient clothing that are special compared to other areas of fashion design or industrial design in general.

In countries such as Finland, clothes for patients and clients are provided by acute care hospitals and residential care institutions—services that are mainly financed by public authorities. This originates back in the 19th century when there was a need to improve hygiene in hospitals and to provide adequate clothes for poor patients. The current system of designing, using and maintaining patient clothing began developing during the 1960s and 1970s, and has remained rather static since.

By patient clothing, we refer to a variety of products provided by the care institutions, worn by the patients close to the body, and made of textile material or the like (i.e. leather and non-woven materials). The types of products we include as patient clothing are garments, footwear, “supportive devices” to support the position of the body and to prevent accidents, and “protective devices” to protect the user or his/her environment from soiling. In this article, footwear is not discussed.

Patient clothing is an overlooked topic among clothing and fashion studies, design studies, as well as studies of the care environment. There are some projects and studies on patient clothing and/or clothing for people with special needs (i.e. Benktzon, Edgren, Böhme, & Sääf, 2003; Karkulahti, Iltanen, Kokkola, Östergård, & Hallman, 1999; Nevala, Holopainen, Kinnunen, & Hänninen, 2003; Sperling & Karlsson, 1989). These studies are mainly fairly small-scale research and development projects. We have not found studies discussing the whole process of designing,

manufacturing, buying, using and maintaining patient clothing. The studies often focus on one aspect of a garment such as development of material technology or pattern making. They usually discuss the needs of a very specific user group or an individual user, and seldom in an industrial context. The scope of previous studies has usually been on the possibilities for development rather than studying existing practices.

AIMS

In the research project “Close to the body”, our aim is to study the present-day reality of industrially manufactured patient clothing. In the previous phases of this research project, we have studied the patient clothing found in brochures published in the internet, and discussed possible factors behind the design of patient clothing (Iltanen & Topo 2005; 2006). In the following paper, we focus on the practices influencing design of patient clothing in Finland as it is described by the professionals involved in the process.

To address these issues we ask: Who are the actors influencing the decisions made during the design process? How do the experts involved in the design process describe the practices of designing, selling, buying, using and maintaining patient clothing? What are their roles in the process? What ethical dimensions and issues can be identified in this process and in decisions concerning patient clothing?

Even if our study focuses on a single country and a rather limited design area, it can be assumed that there are similarities with other western countries using patient clothing, other fields of industrial design and design of clothing for purposes of institutions rather than individual consumers. We will discuss our findings in a framework of actor network theory which has been developed to analyze social shaping of innovations and technologies (Law & Hassard 1999).

MATERIAL AND METHODS

This article is based on interviews of designers (n=8), experts on industrial laundry (n=2) and an expert on buying patient clothes for a care institution (n=1).

The interviews with designers were conducted in two parts. In the first interview, we asked the designer to choose a garment of a set of clothing among their work to represent their work. We asked them to choose a

particular type of patient clothing due to our research interests. The set of samples includes seven garments of sets of clothing: pajamas, a dressing gown, a sweat suit, a dress, safety pants, hygiene overalls and a safety vest. If there were several possibilities to choose from, the designers were advised to choose the garment that they think represents good design in the context of care environments. In the second interview, designers assessed each others' samples. The experts on buying and laundry assessed the designers' samples as well.

The data was analyzed by using Atlas.ti -program and by thematic analysis. The analyzed data was interpreted against the results of studies discussing industrial design, practices of care, and ethics of design and care.

The pictures shown here have been published in the on-line catalogues marketing patient clothing.

FINDINGS

Design and development. Designing patient clothing begins with acknowledging the need for development. The need may be pointed out by other experts working within the system of buying, maintenance or care work. The next step is to gather information of the various needs involved in using and maintaining the garment. Usually at this stage the designers visit care institutions and ask the nurses about the needs of the patients'. Sometimes also patients themselves are interviewed, but this occurs more seldom. The needs that have to be met in design of patient clothing are contradictory, and the designers describe the process as being a set of compromises.

In the interviews the experts described designing patient clothing as multiprofessional group work. Earlier we have found that designing is carried out by teams in most cases (Iltanen & Topo 2005a; 2006). Only two of the designers interviewed for this study had a degree in design or alike. Others were experts in marketing, manufacture or care work. The interviewed experts claimed that “ordinary” designers are unable to do this work due to special knowledge required. In Finland, there is no training for designing patient clothes, despite some small and occasional projects as part of the education of fashion designers.

In mainstream fashion design, there may be eight or even more collections per year, but the collections of patient clothing change very slowly. When looking at the catalogues of patient clothing it seems that there is no or

very little variation according to season, and most of the products may have been the same for years (Iltonen & Topo 2006). According to the experts interviewed for the study, designing only one garment may take a couple of months or even years. The reason for this is the iterative nature of the process. The garments are tested in real life situations in care environments and industrial laundry, and feed back is gathered after every phase. Typical examples of this are a hygiene overall and hip protectors (see further in the article).

The longest period of design seems to be the process of standardizing patient clothing. Some of the patient clothing used today was designed and standardized in the early 1970s, and some of these products were renewed in the early 1990s (SFS, 1997). Among the interviewed people, there were two persons that had taken part in the development process of the standardized patient clothes. They told that the reason for standardizing was to make it more cost-efficient for the industry to manufacture, easier for the care institutions to buy good quality clothes. The main target was to design patient clothing that can be washed in the high temperatures of industrial laundry and processed easily through the system of maintenance.

The most common standardized patient clothes are pajamas and dressing gowns (see Pictures 1 and 2). The standard defines the materials, sizes, colors used for coding the size (i.e. pink for S), the number and quality of buttons etc. These garments have remained almost the same since they were first developed in the 1970's. The manufacturers may use their own prints in the dressing gowns and make minor alterations to the technical details however.



Picture 1. Pajamas.



Picture 2. Dressing gown.

Industrial manufacture. The industrial manufacturing process is more or less the same in patient clothing as in other areas. There are some factories that produce raw materials for patient clothing and dye them, but usually the manufacturers are dependent on external materials. The biggest manufacturers have externalized also cutting and sewing, but most of the work is still done in rather small factories in Finland. Compared to other fields of fashion, this is exceptional.

In patient clothing the need for individual adjustments according to the various needs of end-users may be greater. Currently the process of industrial manufacture does not provide possibilities for this since mass-customization is not used in these factories. Only some of the smallest manufacturers are able to make individual adjustments in the garments.

The technology available at factories has a major impact on the decisions that may be done when designing.

Sales, marketing and buying. The same experts taking part in the design process are involved in sales and marketing of patient clothing. The client is usually the care institution, or nowadays more and more often the industrial laundry. The patient clothes are therefore owned by the care institution, or rented from the laundry. The person making the decision to buy may be a professional buyer in the care institution or laundry, the nurse. Sometimes also family caregivers buy clothes for their relatives living in long-term institutional care. Although garments are sometimes bought by the personal money of the end-users, they very seldom make these decisions for themselves.

For care institutions, purchasing or renting patient

clothing is an item of expenditure. Larger amounts of patient clothing are usually purchased after a process of competitive bidding. Compared to other expenses of care institutions the costs of patient clothing are minimal, but when the budget is tight, these expenses are also minimized. There is a constant effort to lower the costs of health care, and this creates pressure to purchase and maintain patient clothing as cheaply as possible.

This has an effect on designing, since all the small details may make the price of the end-product higher or lower. The experts of patient clothing are extremely well aware of all the consequences of choosing materials and dyes, and cutting the fabric and sewing the garment most efficiently. For example, materials used in patient clothing seem to be very basic polyester-cotton mixtures. New materials may tolerate the industrial laundry system well and benefit the user but these are claimed to be too expensive to be used in patient clothing. The aim of saving money can be seen especially in standardized garments. Their manufacture is extremely rationalized, and the costs of the industrial processes are reduced.

The experts point out that both the price of the garment and the total price including the cost of maintenance and the period of use should be taken into account when buying patient clothes. Many of the experts also make it clear that losses have a great impact on the costs – patient clothes are stolen by the patients in an extent that has an effect on the budget.

The amount of people in need of long-term care is expected to rise rapidly, due to the growing number of the oldest old in many industrialized countries. It is likely that this will increase the costs of patient clothing.

Institutional care environment. The experts interviewed for this study point out that there are differences among the care institutions in regard to the design of patient clothing. In acute care, patient clothing may be used only for a short time, perhaps only a few hours or days. The experts claim that the patients in acute care are focused on their pain or discomfort, and thus only the functional features of clothing are meaningful in this context. Some of the interviewed also make a normative point: in acute care, patients should not care for their appearances since hospital is a place for getting well in the medical sense. The context of acute care is also discussed in the

context of maternity hospitals. According to the experts, the positive context of giving birth or the negative context of worrying for the health of the child usually takes all the energy and clothes are not important for these women.

The experts see the situation in long-term care as different. For the old people in long-term care, the care institution is often the last home and the clothing provided by the care institution may be their only wardrobe. Also people with cognitive developmental disorders or mental illnesses may be in need of patient clothing for months, even years. The experts describe the residents in long-term care as often very frail and their cognitive, mental, physical and social functioning as low. They claim that the care environment has potential to improve or in the worst case to hinder the well-being of the patient (see also van den Berg, 2005).

Care staff. According to the experts, providing physical care such as dressing and undressing is physically straining work. Nevala et al. (2003) found that by redesigning the garments the physical workload and strain could be significantly reduced and work ergonomics improved.

In the interviews, emotional aspects of the care work were also pointed out. Choosing the clothes for the patient, and dressing and undressing him/her is part of the interaction at work of the care staff. Some of these situations may be positive for the care staff and providing a therapeutic aspect for the patient. However, the experts interviewed also made comments about the care staffs' superior power relation to the patients. Within the very tight schedules of care work, providing medical care as easily as possible becomes a priority, and psycho-social needs of patients may become less important for the care staff.

One example of these aspects is illustrated in the design process of a product called hygiene overalls (see picture 3). The hygiene overalls are used by people with incontinence and difficulties to orientate to time and place. These people have to use adult diapers, but do not wish to do so and have a tendency to take off their clothes in inappropriate situations. This garment started to develop simultaneously in the early 1990s in several places. In our data we have many stories of the process, and they all have in common that the catalyst for product development was the care staff. In one story, the laundry got by accident an early version of hygiene overalls, made of old sheets by care staff. In another story, the

manufacturer was asked to begin to design a particular garment for this need.



Picture 3. Hygiene overalls.

There are some well-established procedures in care that affect designing patient clothing. One of these practices is tying patients and preventing them from moving. This is an established part of Finnish care culture and common in other countries too (Kirkevold, 2005; Pekkarinen et al. 2006). One example is the safety vest, used to tie a person in a chair or a geriatric chair (see picture 4).

In the data, the experts discussed this practice with very contradictory feelings. They understood that there are aggressive patients who need to be prevented from hurting others or themselves, and frail people in need of support to be able to stay seated in an up-right position. The experts claimed that the best way to deal with the situation would be to increase the amount of care staff to take care of the vulnerable patients. But this is not possible in the current care system suffering from cuts in amount of personnel, the experts claimed. Hence, there are only two options: to use medical sedatives or physical restrictive devices. Sedatives were argued to have negative side effects. On the other hand, restrictive devices were seen to hinder people from acting and deciding. The experts also stated that restrictive devices make the care work easier and the care cheaper for the hospital (compare Wang & Moyle, 2005).

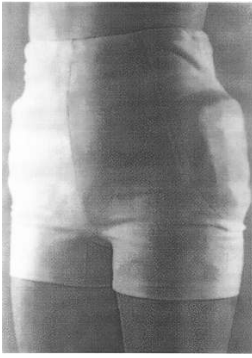


Picture 4. Safety vest.

Patient as the user. In the data, the most popular subject of discussion were the patients' needs. The experts claimed that the patients' needs should be the priority when designing patient clothing.

Rauhala (2007) has found that even if the designers are not in direct contact with end-users, they have clear images of their needs. The experts describe the patients living in long-term care as usually very old. In acute care, the majority of patients are older than 60 years, but there are also younger patients, including children. According to the experts, the patterns of patient clothing differ greatly from patterns used in manufacture of mainstream clothing. The reason for this is the old age and often the sitting position of users. The basis for pattern making should be the E-patterns that have been developed for people over 65 years. Some of the experts claim that the weight of the users has become heavier recently, increasing the need for larger patient clothing.

The experts describe the users of patient clothing as having problems with health and often with physical and cognitive functioning. A typical example of a product that has been developed to meet medically defined needs are the hip protectors (see picture 5). In our data, the hip protectors were designed by a medical doctor, and the design process emerged from the doctor's personal, professional experiences and interests.



Picture 5. Hip protectors.

Problems with cognitive abilities are referred to in the context of dementia. This issue was discussed earlier in the article in connection to hygiene overalls and safety vest.

According to the experts interviewed in the study, psycho-social needs of users are important, and they can be met by the design of patient clothing. The experts claim that an aesthetically pleasing care environment – including the patient clothing – may help in recovering from illnesses. For patients in long-term care, maintaining the self-image by being able to express social roles such as age and gender is represented as very important. An example of this is the dress presented in picture 6. It is talked about as a "granny dress", a piece of clothing that is considered to be typical for the older generation of women. (For discussion of constructing social age in clothing see Iltanen 2007). This dress is moderated to meet the needs of a frail patient. It is open at the back to facilitate dressing and undressing, and make visits to the toilet easier.

Although the product development process is quite slow, changing habitual norms are taken in account in clothes used in long-term care. One of these changes that is discussed a lot in the data is the old womens' gradual shift from dresses to pants. The experts say that in the late 1990s' dresses were mainly bought for old women living in long-term care, but nowadays sweat suits with pants are used more and more often by older women too. (See picture 7.)

It is often pointed out in the data, that the target group for patient clothes is broader than in any other field of clothing design. The experts claim that it is very challenging to design literally to "all ages and abilities".



Picture 6. Dress for a wheel-chair user.



Picture 7. Sweat suit.

The experts sometimes get very strong critique of the aesthetics of their design from the viewpoint of users. Rauhala (2007) has stated that the critical comments about the aesthetics of medical devices made by the end-users indicate that the end user is not recognised as a person with expressive needs. Since in long-term care the patients are often unable to speak for themselves, the role of relatives is emphasized. Experts claim that it is often the relatives, shocked by the poor condition by their loved one, who complain about the aesthetics of patient clothes and also about the use of restrictive devices.

According to our data, the physical needs are met more often than psycho-social needs in design of patient clothing. Rauhala (2007) argues that if there is no direct contact between the designers and end-users, the physical features and needs of the users are emphasized. In practice, the needs of the care and laundry system, as well as need to lower the costs in the care system are often prioritized over the needs of the patient. The experts find this situation ethically problematic, but often do not see a way out – it is the institution that buys the products and thus pays their salaries.

Maintenance. Patient clothing is mainly maintained in the large units of industrial laundries, owned and run by either the public or private sector. The process of maintenance begins at the care institution by storing the dirty laundry by care staff. It is transported to the industrial laundry, and sorted out by the laundry staff. In the industrial laundry, high temperatures are used in washing (70-85° for 10 minutes) to disinfect the clothes. The temperatures for tunnel drying are high to speed up the process for economical reasons (temperature of clothes is 100–110°, temperature of air 160°). The mixture of polyester and cotton is durable, easy to wash, and needs no ironing. The color coding—different colors for different sizes—of standardized clothing makes it easier to sort and store the garments.

In addition, care staff may also maintain garments through washing and drying them in lower temperatures (60°), using small washing machines at the care unit. This system is criticized by the interviewed experts. The care staff is not seen as experts of laundry work, and this may raise problems. The clothes may not be properly cleaned or hygienic, or the clothes may be destroyed by unskilled work. It is also seen as problematic to use the very limited time of the care staff for doing laundry and not care work.

After the laundry the clothes are folded by a machine or by laundry staff, and transported back to the care institution. Patient clothes are stored at the ward in room reserved for them. Depending on the practices of a particular care unit, patients themselves or nurses choose the clothes for the individual patients.

DISCUSSION

In our data, designing patient clothing is represented as a highly complex net of conflicting needs. Based on our findings we were able to identify at least eight actors which all are somehow associated with each other and thus, form a web of actors. In figure 1, we describe the network of actors shaping the design of the patient clothing.

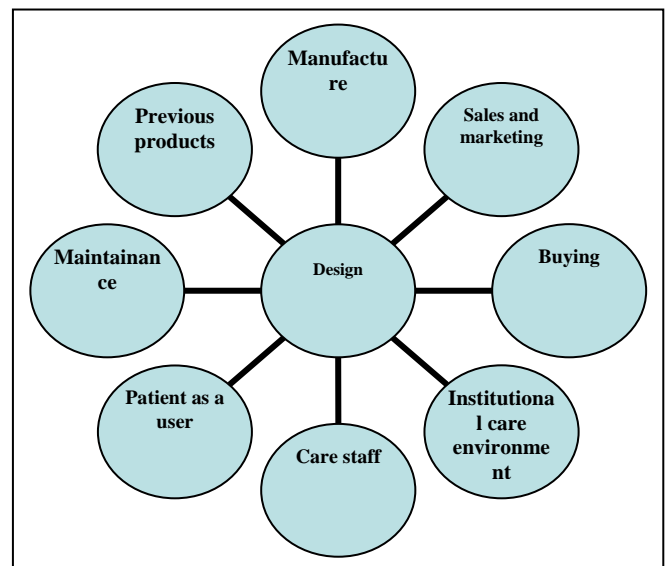


Figure 1. Network of actors shaping the design of the patient clothing.

The system of providing and maintaining clothing for the patients is initiated by the institutions. The care institutions, their practices, values and cultures have a major impact on the designing of patient clothing. The main aim of innovating patient clothes was to improve the level of hygiene and cure of the patients. The existing items of patient clothing shape designing the future products (see Latour 1988). They shape our thinking about what is possible, what solutions are accepted and what is expected for the patient clothing. In the field of patient clothes the role of the previous products can be even more profound than in mainstream fashion design because the cycle of changes is slower.

According to our findings ethical issues in patient design were associated with ethical principles: efficiency, beneficence, privacy and autonomy. Efficiency has been claimed to be a central principle in care institutions (i.e. Laine, Finne-Soveri, Björkgren, Linna, Noro, Häkkinen, 2005). Efficiency was underlined by experts interviewed in this study: they were aware about the tight budget of the care institutions and the expenses caused by maintenance of the clothes. In addition they put attention to the heavy workload of the care staff and the fact that the patient-staff ratio was often low. The principle of efficiency was applied in design for example by choosing materials that tolerate the industrial laundry, and details that facilitate care work. All decisions were guided by the aim to manufacture patient clothing as cheaply as possible.

The principle of beneficence was also applied in design. Solutions of design aimed at making the care work more ergonomic and taking into account the functional and social needs of patients.

Principles of privacy and autonomy are very complex when a person needs care. To be able to help the patient, the need for privacy often has to be neglected. In the system of patient clothing the premise is ignoring privacy. The same clothes, whether they are underwear, pajamas, dressing gowns, dresses or sweat suits are shared by tens or even hundreds of patients. This was taken for granted in the interviews and not discussed by the experts. The issue of autonomy was discussed more, mainly in the context of using restrictive device. The current system was reasoned as being the best choice of a variety of poor solutions.

The experts involved in the design process of patient clothes feel that they do their best in a difficult situation of conflicting needs and a complex system of values. They needed to compromise between efficiency of the system and beneficence of the patients. They describe their work as being "between a rock and a hard place", and face ethical dilemmas when having to prioritize the needs of the institution instead of the end-user.

We hope that the analyses of this complexity help to understand the limitations of the future design of patient clothing. In order to promote larger changes towards patient orientated clothing design, values and culture in care institutions need to be changed.

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