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TRENDS IN SMART CLOTHING FOR THE ELDERLY

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The article is devoted to the problem of designing smart clothes that improves the quality of life of the elderly. Fabrics, patterns, smart warning devices and airbag functional devices for smart clothes for the elderly have been analyzed. The use of breathable hypoallergenic fabrics with an antibacterial effect is recommended. It is recommended to use the vest model for smart devices. Modern smart textiles allow you to monitor the position and functions of the body. In order to prevent injuries in case of a fall, an inflatable vest is recommended, which works on the principle of airbags.

Key words: *designing, elderly, smart clothes, inflatable vest, nano fabric*

INTRODUCTION

At present, with the rapid development of the economy, people's daily life is basically satisfied, and the designer's vision is gradually shifting from the material point of view to the higher-level psychological emotions of expanding people's spiritual enjoyment. The problem of aging has become the focus of public attention. An important issue is the design of clothing for the elderly that improves the quality of life. An article [1] is devoted to the problem of creating smart heated clothes for the elderly.

PURPOSE

The purpose of the article is to analyze fabrics, patterns, smart warning devices and airbag functional devices for smart clothes for the elderly.

RESULTS AND DISCUSSION

Take the health and safety needs of the elderly as an example. According to statistics, the most common accidental injuries among the elderly are falls, traffic accidents, etc., and accidental falls account for more than 40% of the injuries. The safety and health problems of the elderly have aroused the concern of people from all walks of life. As a special existence in the clothing system, the clothing for the elderly should focus on its functionality from the safety needs of the elderly, and should design fall-proof clothing.

The decline in the physical function of the elderly, in the fabric should be more comfortable and skin-friendly fabrics, mainly cotton and linen, followed by the elderly physiological metabolism is reduced, changing clothes is not as frequent as young people, so the elderly clothing fabric selection in health issues can not be ignored.



Nano copper fabric is an anti-bacterial and anti-odor fabric, can stop the growth of bacteria and fungi, can prevent allergies and asthma and other diseases of the elderly, but also to do free of washing, both labor-saving and clean and hygienic, so it is one of the most suitable clothing fabrics for the elderly.

In addition, graphene internal warming fiber and moisture-absorbing and quick-drying cotton knitted fabric are also suitable for the elderly clothing fabrics, of which graphene internal warming fiber is a composite fiber, which is compounded by biomass graphene and viscose fiber. Graphene has good thermal conductivity and antibacterial and antibacterial properties, but also has a low temperature far-infrared function, and the production process does not cause any environmental pollution, is an environmentally friendly antibacterial fiber [2].

Factors such as ease of wearing and ease of movement should be fully considered when choosing clothing for the elderly. The style should be simple and ventilated, with a loose silhouette for increased comfort, and a front closure for easy on and off. Scientists consider the vest as protective clothing. Not only is it easy to wear, put on and take off. The vest may have pockets for installing a removable airbag, as well as carrying small hygiene items, such as handkerchiefs or napkins.

At present, there are mainly three types of intelligent early warning devices: one is based on infrared and sound waves and other physical principles of monitoring, the second is to rely on camera equipment to obtain motion images of the elderly so as to monitor, and the third is wearable sensing technology, which is also the most widely used in the market, mainly based on MEMS inertial sensors to achieve an intelligent early warning. In the intelligent fall prevention vest can be embedded in MEMS inertial sensors, through the monitoring of human posture, the human fall trend is projected, so as to achieve the elderly fall before the early warning function [3].

In the current removable airbag type fall protection vest (fig. 1) is mostly used for professional athletes' race suits, if the airbag device is used for the elderly who are in urgent need of protection, it can increase its value even more.



Fig. 1. Airbag type fall protection vest



For intelligent anti-fall vest, an airbag can be embedded in the waist as well as a small gas tank, in the moment before the detection of human fall, the airbag quickly react automatically filled with nitrogen, which can effectively avoid the elderly fall on the head, cervical vertebrae, as well as thoracic and lumbar vertebrae and hip injuries, more buffering the impact of the collision, in order to reduce the second injury to the internal organs of the elderly fall [4].

CONCLUSIONS

Smart clothes can improve the quality of life of older people. To do this, use breathable hypoallergenic fabrics with an antibacterial effect. It is recommended to use the vest model for smart devices. Modern smart textiles allow you to monitor the position and functions of the body. In order to prevent injuries in case of a fall, an inflatable vest is recommended, which works on the principle of airbags.

Further research should address the living environment, comfort and social environment of the elderly, the physiology and psychology of the elderly, and the possibility of improving their quality of life through smart clothing.

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ЄЖОВА О., ПАШКЕВИЧ К., ІН ЧЕНЬ ТЕНДЕНЦІЇ РОЗУМНОГО ОДЯГУ ДЛЯ ЛЮДЕЙ ПОХИЛОГО ВІКУ

Робота присвячена проблемі дизайн-проектування розумного одягу, що покращує якість життя людей похилого віку. Проаналізовано тканини, моделі, розумні моніторингові пристрої та функціональні подушки безпеки для розумного одягу для людей похилого віку. Рекомендовані дихаючі гіпоалергенні тканини з антибактеріальним ефектом. Для розумних пристроїв рекомендовано використовувати модель жилета. Виявлено, що сучасний розумний текстиль дозволяє стежити за положенням і функціями тіла. Для запобігання травм при падінні рекомендований надувний жилет, який діє за принципом подушок безпеки.

Ключові слова: дизайн-проектування, люди похилого віку, розумний одяг, надувний жилет, нанотканина