

1-1-2012

Functional Clothing for Natural Disaster Survivors

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FUNCTIONAL CLOTHING FOR NATURAL DISASTER SURVIVORS

by

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A major research paper
presented to Ryerson University
in partial fulfillment of the
requirements for the degree of
Master of Arts
in the Program of
Fashion

Toronto, Ontario, Canada, 2012

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AUTHOR'S DECLARATION

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Abstract

Natural disasters occur in increasing intensity and frequency. When disasters occur, several humanitarian agencies are mobilized to provide relief aid. Donated clothing is deployed as a response to donors' perceptions of need; however, these donations may be climatically and culturally unsuitable, creating a glut of clothing that not only undermines the domestic economy but also consumes scarce resources. This research investigates survivors' clothing needs during the relief phase of natural disasters in order to improve current aid protocol. The study is accomplished by needs analysis focus groups with survivors, including interviews with relief aid volunteers and aid administering agencies. Using these data, a prototype is designed using the Functional, Expressive and Aesthetic design framework as proposed by Lamb and Kallal (1992). It will provide groundwork for humanitarian agencies and future academic study in the field of functional apparel research for disaster situations.

Acknowledgements

Many people have contributed directly or indirectly to the completion of this Master's Research Project. First and foremost, my husband and children (my crew) have kept me afloat plying me with humour, eye-rolling lectures, and sometimes-dubious culinary talents. My parents' prayers have fortified me spiritually and my siblings have strengthened me with sound advice. I am forever indebted to my research advisor, Sandra Tullio-Pow, for being my compass when I embarked on this journey, unfailingly guiding me through troubled waters, and heartening me to be the captain of my ship. I would like to thank Dr. Lu Ann Lafrenz for being my second reader, and for her words of encouragement. I am humbled by the number of times my friend Sahar Atif has thrown me a lifeline when she would expedite tasks for me in a land (Pakistan) where time stands still. Munir Qureshi, my facilitator in Pakistan, efficiently orchestrated the focus group discussion and ensured all interview protocols were followed. I am extending my gratitude to all the participants in this study, and to YKK Canada and 3M Canada for sharing their product developments. Last but not the least, heartfelt appreciation to my father-in-law, whose sphere of influence enabled me to network in the humanitarian circles in Pakistan.

Dedication

I dedicate this work and all my future academic endeavors to my parents who bask in the smallest of my achievements.

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Chapter 1: Introduction

Each passing year is marked with at least one catastrophic natural disaster in some part of the world. Disasters may be defined as unforeseen destructive events of man-made or natural origins. Natural disasters occur when natural phenomenon adversely impacts human civilizations, thereby rendering the ensuing outcome a catastrophe. Clearly, these affect not only the environment but also displace and traumatize human life. While there have been fewer reported casualties from natural disasters between the years 1975 and 2010, the number of people affected and the occurrence of disasters have steadily increased (“Natural Disaster Trends,” 2009). In 2010, 288,604 people died or were reported missing in the top-10 natural disasters worldwide (International Disaster Database, 2010). National and international humanitarian agencies are mobilized whenever and wherever disaster occurs. Most aspects of emergency response planning have been enhanced over the years; however, there is a lack of progress in the supply deployment of clothing. There is a real need for clothing that is climatically appropriate, culturally sensitive, and economically viable (International Federation of Red Cross and Red Crescent Societies [IFRC & RCS], 2005; Jaquemet, 2005; Nathan, 2005; Scobie, 2007). This research proposes a participatory framework for the design and manufacture of clothing, to aid relief efforts during natural disasters. It will address the need for clothing as a critical aspect of relief aid.

Background

The three main phases of disaster response are: rescue, relief, and rehabilitation (Skeet, 1977). All three phases supply the basic necessities of life: food, clothing, and shelter. Some may question if current relief processes adequately meet the clothing requirements of the affected community. Initial aid efforts are shaped by media and by donors’ perceptions of need instead of

the expressed requirements of the survivors (Vaux, 2005). When a natural disaster event occurs, local and international organizations donate garments. These efforts, though well meaning, typically result in large volumes of clothing that may need to be cleaned or mended and sorted by size and gender. This process is time-intensive and consumes vital manpower resources (Skeet, 1977). In the case of used clothing, one must also consider the element of human dignity and hygiene.

Excess clothing arriving in Haiti after the 2010 earthquake found its way to roadside markets, thus damaging the country's already fragile garment manufacturing economy with low prices (McAlister & Pringle, 2011). Large quantities of inappropriate used clothing clogged up warehouses and roadsides across South Asia after the tsunami (IFRC & RCS, 2005). Redundant clothing causes a negative environmental impact by adding to the waste already created by the disaster.

In some instances clothing may be unsuitable for the climate and in other cases clothing may not be culturally appropriate, thus inhibiting vulnerable peoples' mobility and independence. After the tsunami in Indonesia, ill-suited clothing for a highly conservative Muslim population in Banda Aceh (Indonesia) congested airports (Jaquemet, 2005). Lack of proper garments, especially for women, may inhibit requests for help and thus impede rehabilitation for that individual. Along the coasts of Sri Lanka in the aftermath of the tsunami, women did not have adequate clothing to enable them to participate in community life (Nobel de Silva, 2005).

It is important that disaster relief is correctly targeted (IFRC & RCS, 2005). A comprehensive needs assessment would likely result in a more effective aid response (OneResponse, n.d.). Currently, humanitarian aid agencies like the IFRC & RCS as well as

USAID are encouraging financial donations to enable them to tailor the response to specific needs of the disaster event. This also allows the agencies to disburse cash or vouchers to the survivors in instances where they are able to purchase some of their requirements in nearby markets that have not been affected by the disaster (The Sphere Project, 2011). While many donors comprehend the practicality of cash donations, some are critical of the lack of transparency and financial disclosure of International charitable organizations. Legislation is being proposed mandating third-party financial audits for nonprofit organizations. These kinds of laws will serve to reinstate donor confidence (Mead, 2008). In the absence of such regulations, supporters will either continue to donate in kind or diminish their response altogether.

This study aimed to investigate clothing needs of survivors during the relief phase of natural disasters in order that current aid protocol might be improved. It will generate information based on the needs expressed by the affected people, relief workers, and aid administrators. Having gathered these data, clothing requirements of disaster survivors will be determined. Subsequently, a capsule collection for men, women, and children was designed and prototypes developed.

This research will give perspective to local not-for-profit organizations that are usually involved with acquiring clothing for disaster relief. This will also benefit government emergency preparedness programs and international aid agencies by providing them with a clothing component to add to the emergency supplies that are deployed during a disaster. Scholars in the field of disaster management may also stand to benefit from the data analysis.

Chapter 2: Literature Review

Current Protocols

Planning, response, and recovery are three phases of emergency management (Subramaniam, Ali, & Shamsudin, 2010). As part of disaster preparedness protocol, the entire response is painstakingly planned, past experiences scrutinized, and a *modus operandi* established. Many international humanitarian agencies have offices in several countries where they maintain a roster of volunteers and emergency supplies. Response entails two main phases, namely relief and rescue. Initially people are in danger, trapped within wreckage, and the priority is to rescue them. Primary responders—firemen, paramedics, and trained dogs—are deployed. The needs of the survivors at this stage are first aid, water, and blankets (Public Works and Government Services Canada [PWGSC], 2002). In terms of clothing, survivors have only the clothes on their backs and the blankets that have been distributed to them. Clothing can rarely be salvaged from homes. The relief response acknowledges the increasing needs by “positioning resources, such as emergency and rescue equipment and supplies, food, water, shelter, and medical provisions, and systems at the right time and place” (Subramaniam et al., 2010, p. 572). This phase utilizes the service of relief workers that are employed by humanitarian aid agencies. It is this period that is the focus of this study. Survivors are in need of clothing aid because what they have is torn and soiled and they need to be protected from the elements by appropriate apparel. The rehabilitation phase is the longest, as recovery depends on the country’s economic stability (Skeet, 1977). In this phase, with the involvement of government and non-government aid agencies, infrastructure is restored allowing homes and livelihoods to be rebuilt. Clothing is not a major concern at this point, as it may be purchased from the closest retailer.

In 2005, having assessed the capacities and strengths of the world's major humanitarian agencies, the Emergency Relief Coordinator (ERC), United Nations, piloted a cluster approach to standardize, optimize and coordinate emergency response of International agencies. The Inter-Agency Standing Committee (IASC) has identified clusters for 11 main areas of emergency response (OneResponse, n.d.). Clothing and apparel has not been acknowledged as one of them. The Sphere Project (2011), which is a collaborative initiative by several humanitarian agencies, created a handbook to document the universal minimum standards of humanitarian response in disaster situations. It identifies clothing as a non-food item, the minimum standard being "The disaster-affected population has sufficient clothing, blankets and bedding to ensure their personal comfort, dignity, health and well-being" (p. 271). Sufficient clothing is defined as two full sets per person that are gender, size, and culturally appropriate. Thermal properties and cultural considerations are stressed in this seminal text with emphasis on needs analysis of survivors *before* aid is disbursed. It also recommends that where possible, local skills and resources should be utilized to obtain non-food items while considering long-term negative impacts on the environment (The Sphere Project, 2011). Regretfully, the minimum standards outlined by the Sphere Project are rarely fully implemented. The provision of other non-food items—such as bedding and household items including food storage and preparation appliances, pots, plates and cutlery—should be informed by cultural practices. Bags and containers to transport belongings are also considered in this category. Individual and communal needs are taken into account (The Sphere Project, 2011).

Design Review

Clothing designed specifically for disaster relief purposes is scarce; therefore parallels may be drawn from life jackets and similar projects for refugees and the homeless. Ana Rewakowicz is a Polish/Canadian multidisciplinary artist who explores the issue of transience

and “nomadism” in relationship to physical space. She builds inflatable objects: inflatable clothes and inflatable architecture. She incorporates solar technology and materials like rubber latex, polyvinyl, metal foil, and fabrics in her work. Uniblow Outfits (2001) and SleepingDress (2004) are relevant projects of interest to this study. The first is a double-layered rubber latex overall suit; the wearer has to walk using foot-pump shoes to inflate it (Rewakowicz, 2007). The second is a sleeping bag/dress inhabitable by one or two people that performs as a kimono and is inflated into a cylindrical container using a small computer fan (Rewakowicz, 2011).

Lucy Orta is another eminent artist with a fashion background who is best known for her works “Refuge Wear” and “Nexus Architecture.” The image of the wearable bivouac, which is a temporary encampment that converts from tent to coat, is a visual found in many design publications. Her design concepts are thought provoking and dynamic as they dramatically morph from one functional object to another (Coppard et al., 2010).

More pertinent to this project is the “15 Below Project” by Canadian fashion designer Lida Baday. Commissioned by Taxi Communications, Lida Baday designed a coat for homeless people in Canada. The jacket featured cleverly engineered pockets, and the entire garment could be zipped and folded into a backpack to serve as a pillow. When stuffed with newspaper, found in abundance on the street, the wearer is able to withstand temperatures of -15°C and below (The 15 Below Project, n.d.). The intelligence of the design and the functionality of its aspect are both intended features of the creative module within this research.

A functional design process is based on the specific needs of the target consumer. Rosenblad-Wallin (1985) proposes a user-oriented product development model based on functional and symbolic needs to address design problems. Functional needs include climatic and environmental protection, thermal comfort, fit, friction, and tactility. Symbolic values are

associates with social identity, self-esteem, group membership, and modesty. In the initial relief phase of a disaster, clothing emphasis must focus on practical characteristics, “the more pronounced the functional demands of clothing, the less important the symbolic values” (Rosenblad-Wallin 1985, p. 282). Nonetheless, a recent study by Adam and Galinsky (2012) revealed that clothing has a systematic influence on the wearer’s consciousness through the co-occurrence of “symbolic meaning of clothing and the physical experience of wearing them” (p. 1). This means that survivors can derive comfort from cultural clothing and that “western” clothing may deprive them of their social identity (identity being “the self in context”). During the rehabilitation phase of a disaster, aesthetic qualities of clothing become more important, representative of stability, self-esteem, and individuality. Lamb and Kallal (1992) developed a consumer needs model that focuses on the functional, expressive, and aesthetic (FEA) features within a framework for design. It considers values like fit, comfort, and mobility as functional needs; status, roles, and self-esteem as expressive needs; and design elements and principles as aesthetic. The study emphasizes the development of a user profile based on the demographics and lifestyle to better understand the specific apparel use-situation during disaster relief. Some of the issues with traditional clothing aid are cultural, a key consideration for effective design solutions (Lamb & Kallal, 1992). The design process as identified by Lamb and Kallal begins with the identification of the design problem, through design development, namely preliminary ideas and concept refinement. Once designs have been perfected, prototypes are developed and evaluated according to the FEA model. The most appropriate style is then implemented. While the FEA model presents a practical paradigm, design must balance the requirements of the use situation, integrating general considerations such as economics, budgets, and politics (Rosenblad-Wallin, 1985).

Chapter 3: Methodology

A participatory design framework was used for this research study. This design process prioritizes the end user; participants have an active voice in defining the design problem and proposing solutions. Through involvement of the target consumer, it is ensured that product development is fully functional and suitable to the specific needs of the end user (Rosenblad-Wallin, 1985). Needs analyses were undertaken with disaster survivors, relief volunteers, and aid administrators in order to achieve this. The perceptions of the three groups about a given situation would enable the researcher to gather data holistically. The project followed two interconnected phases of advancement: needs analysis and design development.

Phase 1: Needs Analysis

The need to involve the affected people in disaster management research has been given voice from time to time in World Disaster Reports (IFRC & RCS, 2005; Vaux, 2005). The Sphere Project (2011) includes the following elements in the needs analysis:

- What type of clothing, blankets, and bedding are typically used by women, men, children and infants, pregnant and lactating women, and older people, and what are the particular social and cultural considerations?
- How many women and men of all ages, children, and infants have inadequate or insufficient clothing, blankets, or bedding to provide protection from the adverse effects of the climate and to maintain their health, dignity, and well being?
- What are the potential risks to the lives, health, and personal safety of the affected population through the need for adequate clothing, blankets, or bedding?
- What vector-control measures, particularly the provision of mosquito nets, are required to ensure the health and well being of households? (p. 282)

However in disaster relief situations, the perceptions of donors may be at complete variance to the needs of survivors and it is therefore vital that the input from the end users be the basis of garment creation. The needs-based development of a garment prototype will be supported by the participation of three important stakeholders: survivors, relief workers, and aid administrators. Participants were selected from Pakistan. There was an earthquake in Pakistan in 2005 in which over 5 million people were affected and more recently in 2010, floods affected more than 20 million lives in 2010 (International Disaster Database, 2012). A survey conducted by the Fritz Institute in 2006 of 621 households in earthquake struck regions in Pakistan found that 53% did not receive clothing aid 2 months after the event and that 64% were still in need of clothing aid 10 months after the event (Fritz Institute, 2006).

Survivor Focus Groups

In the relief phase of disaster management, the survivors are the end-users of clothing for relief aid. Women, men, and children are affected by disasters in different ways (Chughtai & Simpson, 2006). In order to accurately determine the differences in gender-related needs, a focus group discussion was conducted with a purposive sampling of three male and three female survivors of the 2005 earthquake in Pakistan. A facilitator recruited the respondents from Muzaffarabad, the capital of the Azad Jammu and Kashmir province of Pakistan. This city was severely affected being only 19 kilometers away from the epicenter of the earthquake and most of its residents are survivors. The facilitator posted a request for participants on the bulletin board of a popular grocery store with information about the study and his contact details in it. Interested participants contacted him and he subsequently screened the volunteers based on their availability and their ability to converse in Urdu or English. A suitable time and location to have the discussion was arranged. Written informed consent was obtained. The focus group discussion

was scheduled for 12 noon with an hour in the middle for lunch, which was provided to them. The principal researcher was able to participate using Internet software (Skype) that supported video calls. The discussion was generated using a topic guide of themes for discussion. These themes focused on three main areas: the needs of the survivors (men and women) after the earthquake, the clothing aid that was received in terms of distribution and appropriateness, and the survivors' ideas towards the optimal functional and aesthetic properties for a future design disaster relief prototype. Participants were asked to describe their average daily routines and functions when they were in the relief phase so that the use-situation for the prototype could be determined. In this manner, the data generated were indicative of the survivors' experiences and opinions that likely reflect those of the wider population. The benefit from interacting with this focus group was that problems were given context, ideas were crystallized, and needs of the end-users were distilled.

Relief Workers

Semi-structured interviews were conducted individually with two relief workers (male and female) who work with international humanitarian organizations, recruited via the LinkedIn social networking site. Both of the interviewees were involved with relief efforts in the aftermath of the earthquake. The interviews were conducted via a long distance telephone call and were recorded using a digital voice recorder. The schedule of topics discussed followed a loosely planned order so as to allow the relief workers to express themselves. The themes covered the same areas as with the focus group discussions: the needs of the survivors, the relief protocol, and ideas towards the FEA characteristics of the design prototype. To explore clothing aid-related experiences and perceptions, it was important to capture the workers' perspectives and opinions because they are the link between the survivors, who are the end-users, and the aid

administrators. They are the people who were physically present on the field and who personally disbursed aid. With this in mind, questions were asked regarding how to facilitate distribution of disaster relief apparel.

Aid Administrators

Qualitative telephone interviews were arranged with the Director of Operations and the Cluster Leader of two disaster relief agencies. The researcher had connected with these participants on a previous networking trip to Pakistan. These participants were involved with the procurement and logistics of non-food items of aid. To explore the perspectives of aid administrators, open-ended and flexible questions were asked to access the interviewees' views, interpretation of events, and opinions regarding non-food items aid. These three topical areas pointed to the key issues. Additional issues discussed included: rapid-assessments, clusters for non-food items, aid logistics, and the specific contents of disaster relief packages. To better comprehend the differences and similarities in the standpoints of government and International non-government organizations towards a common goal, it was preferred to have both perspectives.

Chapter 4: Data Analysis and Results

Data generated from interviews with aid administrators and relief workers as well as focus group discussions with survivors were analyzed in the following manner: indicators within the data (e.g., descriptions by the survivors, observations by the relief workers of actions and events) were coded into deductive and inductive categories and further into subcategories. Deductive coding incorporated data that were based on pre-existing concerns and observations. This included current relief aid protocols, further categorized into survival hampers, distribution systems, logistics, and speed of response. These themes were entered into a spreadsheet and analyzed.

Data initially coded as inductive were broken down into subcategories, such as *functional*, *expressive*, and *aesthetic*. The data in the subcategories were colour coded and entered into a Venn diagram (as shown in Figure 1). Each circle represented an interview group (survivors, relief workers, and aid administrators). This process allowed for concepts that were dictated by data, having been coded in this manner, to be interrelated and rigorously compared. It also facilitated the representation of conflicting strain of data. Prominent needs emerged in the overlapping areas of the Venn diagram. These needs, which form the basis of the design development, are represented in Table 1.

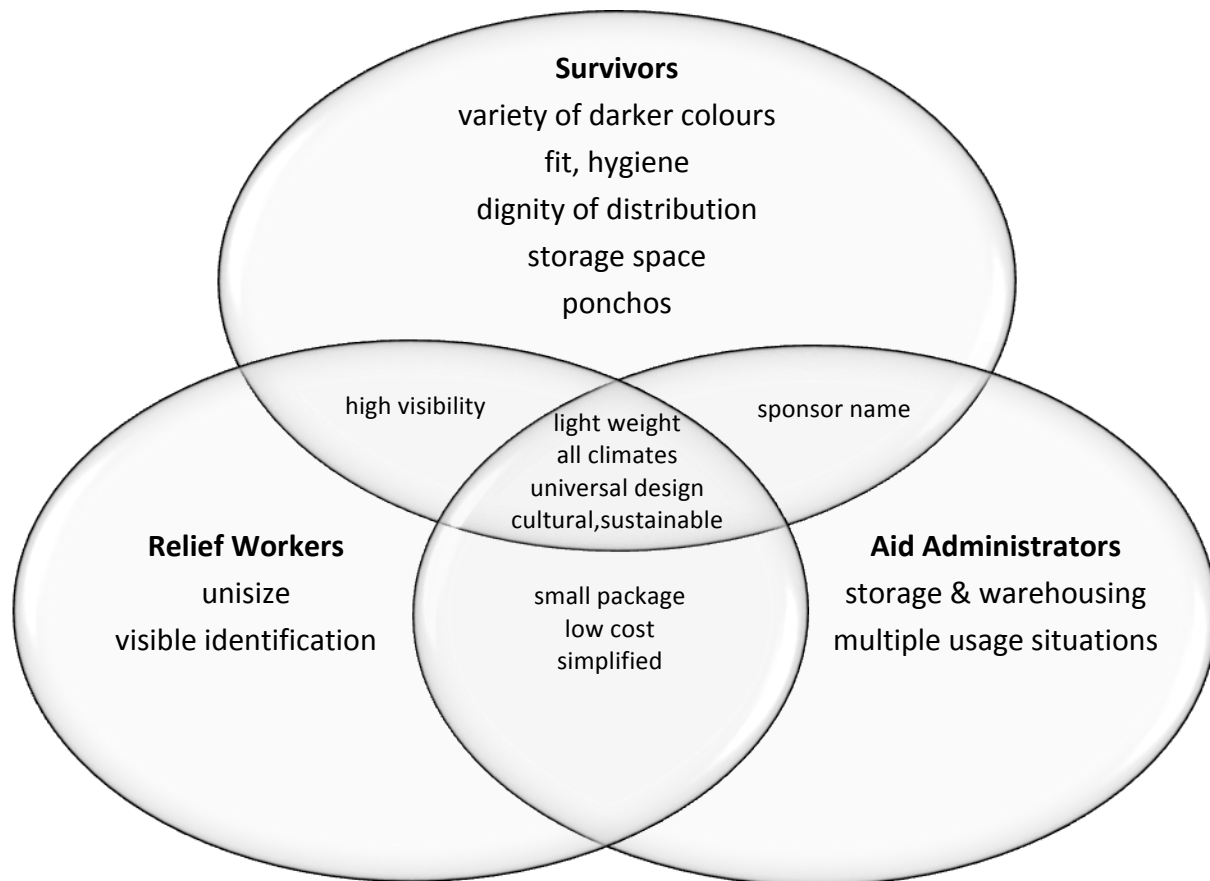


Figure 1. Inductive data.

Table 1

Inductive Data in FEA Model

Functional	Expressive	Aesthetic
Lightweight	Multi-cultural	Variety of colours
Small package	Hygienic	Poncho-like
Low cost	Distribution process	Shawl-like
Unisex	Sustainable	
High Visibility	Simplified functions	
Multi-seasonality		
Multiple usage		
Universal design		

Summary of the Natural Disaster

Pakistan was chosen as the research sample based on the following criteria: it is an underdeveloped country, the national dress is unlike homogenous western clothing, and there have been two large-scale natural disasters: an earthquake in 2005 and a flood in 2010.

Participants and statistical data from the earthquake were more accessible than the recent flood, for which relief is ongoing. A 7.6 magnitude earthquake occurred in the early morning hours on Saturday, October 8, 2005, causing extensive damage to 4,000 villages in the mountain regions of Northern Pakistan, killing 73,000 people and displacing at least 3.3 million people (Fritz Institute, 2006). Aftershocks, landslides, and the unexpected onset of precipitation and low temperatures followed the earthquake. Eighty percent of the city of Muzaffarabad was damaged (U.S. Geological Survey, 2010).

Sample Characteristics

Focus groups. Participants for focus group discussion and relief worker interviews were residents of Muzaffarabad and its surrounding areas. Focus group participants included three male and three female earthquake survivors. They are able-bodied individuals between the ages of 25 and 40. With the exception of two, most of them are presently married though at the time of the natural disaster, only one of them was married. All had an undergraduate degree and one was pursuing graduate studies. All are employed, with an annual income of \$4,000 to \$10,000, which is that of an average low- to middle-income household in Pakistan. There were two social workers, a teacher, a lawyer, an advocate, and a field operations manager for an International aid agency. The gender assortment and demographic range provided an assortment of opinions to determine the required features of clothing aid. While all had sustained minor injuries, four of the six participants received moderate injuries during the disaster.

Interviews with relief workers. The two participants, male and female, were between the ages of 25 and 35. One had a graduate degree, and the other is now a general physician. Both are employed by international aid agencies. In order to get a sense of the homogeneity of the relief response at that time, it is important to know how clothing aid protocol varied from urban centers to rural places. Therefore one relief worker was a survivor as well as a relief worker in a medical cluster in Muzaffarabad, Pakistan. This is an urban city and was a tourist destination before the earthquake. The relief camps were based in this city because wide-open spaces such as playgrounds and parks were available for helipads and storage. In contrast, the other relief worker who was interviewed was deployed in a rural area in the mountainous region where the fragile infrastructure had collapsed and there was considerable difficulty and time lags in relief response. Poverty levels were high in this region even before the earthquake so that after the event, the needs of these survivors were greater and more urgent. In any given natural disaster, there are always affected people who are confined in inaccessible places. The parameters for relief aid become different in these instances.

Interviews with aid administrators. Both participants were male, between 45 and 55 years of age, with household incomes of \$40,000 and above. Both were senior level managers; one interviewee was the director at a government disaster relief agency based in Muzaffarabad, and the other was the country manager of an international humanitarian agency. The latter is currently overseeing the flood relief operations and is residing in Hyderabad city, Sindh province, Pakistan. At the time of the earthquake, he was working from the head office of his agency in Islamabad, the capital city of Pakistan.

Emergent Themes

Emergency preparedness. Since the earthquake was the first great natural disaster in many years, there was insufficient staff and supplies in local non-government humanitarian agencies. Most of the volunteers recruited at that time had no previous training. This resulted in haphazard distribution of aid through in which some survivors received multiples of the same commodities while others received none. One of the participants noted, “A lot of civilians volunteered through agencies, but many more just arrived on the scene travelling on top of buses, loaded into trucks. ... They had no experience and we didn’t know what to do with them.”

Functional characteristics. All participants unanimously requested lightweight clothing. The survivors were concerned about the pressure clothing could exert on their injuries. Relief workers explained, “It took us 5 to 6 hours to climb the hills to get to the villages, to find out what they needed. Then we would travel over debris from landslides for many hours to get to camps and then bring the provisions back.” Both relief workers and aid administrators agreed that clothing packages should not only be light in weight but also occupy minimal space. Due to limited financial resources, and with several agencies vying for funding, aid administrators were concerned with clothing costs. Since most agencies did not carry clothing in their survival kits, a cost comparison was not possible. The IFRC & RCS do distribute clothing in Pakistan as part of their relief efforts but were unavailable to comment. The manufacturing and warehousing of the clothing were potential concerns. The survivors expressed a desire to have clothing that fit well, however the relief workers were more inclined towards a one-size-fits-all solution. All participants articulated the need for pockets. When the earthquake occurred, people left their homes wearing only the clothing they had on. As a survivor pointed out, “Nobody wanted to go back to their house [to get their belongings] because we were terrified of the aftershocks. We

spent the night out in the street.” If at all, the few possessions that they reclaimed from the rubble became important to them and pockets would have helped in transporting them. The relief workers felt that carrying their temporary personal identification in a lanyard or visible pocket would be useful. They reported that due to the rubble, loss of familiar landmarks, and altered terrain after a disaster, people were more prone to losing their way or falling in ditches and crevices. Higher visibility was a desirable aspect of apparel for survivors. All participants agreed that the clothing should be season appropriate, and protect them from heat, cold, wind, and water. A participant from the focus group expressed, “We needed warm clothes and shelter right away as it rained that first night [after the earthquake]. So many children died from pneumonia [because of the cold].” Aid administrators were of the opinion that the resulting design should be wearable by refugees as well since many agencies are involved in humanitarian efforts in war zones as well. They reiterated that many of the survivors were injured, sometimes physically incapacitated.

Expressive. All participants stressed that apparel be culturally appropriate. The clothing in Pakistan consists of an upper, knee-length loose tunic, and baggy trousers, usually made of the same fabric as the tunic. While men and women wear the same articles of clothing, the gender differences are visually apparent through prints, embroidery, and bright colours for women and solid somber colours for men. Arms and legs are modestly covered and both men and women wear shawls. The survivors and relief workers expressed indignation at “western” clothing that arrived as donations. The participants conceded that while the men would still consider wearing western style trousers in extreme circumstances, women would never be able to wear them. One of them expressed, “We lost everything in the disaster, we should not have to lose our identity too.”

Participants talked about self-image, that soiled clothing adversely affected their morale and about the ignominy of current clothing aid. A survivor expressed, “we reflected our surroundings—dirty, broken, and confused.” Survivors and relief workers explained that bales of donated clothing were dumped at various spots and people had to pick through them. In remote areas that were not accessible by road, helicopters dropped survival packages and parcels of clothing. While it may appear to be a practical solution, it was clear that receiving food and clothing in this way perturbed the survivors. Another troubling theme was the filtering of donated clothing from the western countries. It was alleged that flea market traders in the cities bought the better quality clothing to resell, and what remained was sent to the disaster zones.

Everyone spoke about the environmental risks that were posed by unwarranted clothing that made its way into rivers, got entangled with animals’ and children’s legs, or just spent years piled up on road sides.

Aesthetic. Survivors preferred darker colours to hide the dust and grime; however, relief workers were keen on having brighter colours to facilitate visibility and different colours for men and women so they could be identified if they were stranded in a ravine, or in the rubble. Survivors spoke about the multi-purpose benefits of shawls and indicated a strong preference for long woolen poncho-like garments (*phiren*) worn in that region. Aid administrators thought the names of the distributing humanitarian agency should be on garments. Relief workers and administrators stressed that the design should be intuitive and not complicated in the way it functions, as many people in rural areas would be unable to use it effectively.

Phase 2: Design Development

Design development for this study has followed the first six of the seven-step design process proposed by Koberg and Bagnall (1991) as: acceptance, analysis, definition, ideation,

solution, implementation, and evaluation. Since this research project engages with relief phase clothing of a disaster, superior quality is not a primary concern; keeping costs low was critical if the prototype was to be included in survival packs deployed by humanitarian agencies. In view of conflicting data, choices regarding the components of design and material selection were made. For instance, survivors were concerned about ill-fitted clothing; however, relief workers had a strong preference for one-size-fits-all solutions in order to facilitate distribution. Similarly, survivors were interested in darker colours to hide the dust and grime while relief workers thought brighter colours would provide improved visibility. One-size clothing and brighter colours were selected based on cost and safety criteria.

Silhouette. The prototype silhouette was directed by the principles of universal design. The term was coined by Ronald L. Mace to explain “the concept of designing all products and the built environment to be aesthetic and usable to the greatest extent possible by everyone, regardless of their age, ability, or status in life” (Center for Universal Design, 2010, para 2.). In the aftermath of a disaster, survivor groups will include injured people as well as expectant women and those of an older demographic. It is essential that everyone is able to wear the garment with ease and that it not aggravate existing injuries. The idea for a poncho-like silhouette was suggested by one of the participants who expressed that an indigenous woolen poncho-like long tunic was preferred. Another participant discussed the shawl as an ultimate multi-purpose garment. Upon consideration of these data, the shape of the prototype was designed to combine both the hooded poncho and the shawl. On an average 5'6"-tall person, the length of the prototype is below the knees. It is an outer garment that is appropriate to many cultural sensibilities. The sides of the poncho unzip completely to convert into a flat (shawl-like) sheet that may then be used to spread on the floor, to cover people or things and to wrap

children, providing warmth, shelter, and protection. Above all, the design and its components are simple and intuitive, keeping in mind that disaster sometimes affects rural populations that may not be exposed to complicated design features and would not know how to use them.

Textile. The textile requirements for the project were relatively more demanding. The textile had to be resilient to all kinds of weather conditions. The desired qualities were:

- Water repellant/proof
- Wind proof
- Breathable
- Lightweight
- Dirt proof and stain resistant
- Sustainable
- Low cost

The fabric chosen based on the primary criteria of low cost, water and wind resistance, and breathability is “Dintex” by Ding Zing. It is a waterproof and breathable film that is also ecologically conscious. It is not stain resistant and at 320gsm, it is not as lightweight as desired (Ding Zing, n.d.). In order to keep the clothing package lightweight, compact, and low cost, Nylon Ripstop has been used to make the pockets and the ancillary accessories. Ripstop is a textile that incorporates larger yarns placed within the weave in a grid-like pattern, which improves strength and prevents punctures from tearing. It is conventionally used to make tents and hiking apparel. It is strong and waterproof. The YKK Aquaseal Vislon zippers used on the garment will prevent water seepage through the trim.

Safety features. In most natural disaster events, the geographical topography of the area changes to a large extent. This and other factors may disorient people who have to navigate the

terrain. Survivors may get lost, or fall into debris or ditches. For improved safety, light reflective trim from 3M was incorporated in the design. In keeping with mainstream safety garments, a horizontal and two vertical strips are positioned in the front of the garment and an “X” on the back (see Illustrations 2 & 3). In this approach, the position of the reflective trim will indicate the front or back of a person who is not otherwise visible in the dark. Additional safety features integrated in the prototype include a small LED flashlight and a whistle. Transparent plastic pockets that provide identification storage in a visible place have also been incorporated onto the garment.

Functional features. Survivors usually carry all their belongings with them until they are assigned temporary shelter. Since the poncho is a loose garment, a detachable belt was incorporated to secure the waist and provide a means to balance loads and allow for ease of movement without the excess fabric getting in the way (see Illustration 2). A large pouch pocket that integrates several patch pockets can be attached to the belt. There are light load-bearing D-rings strategically placed on the front upper poncho as well as the pouch pocket. Two cargo pockets can be attached to the D-rings on the garment or the pouch to provide extra storage. To keep the design multi-functional, the pockets may be worn with the poncho or without. The survival poncho will be packaged in a small backpack (see Illustration 1). The cargo pockets may also be appended to the backpack. The bag is an important feature as it could also be used to carry things but most importantly because it addresses the “dignity of distribution” process that resonates so deeply with the survivors. The name and logo of the sponsoring agency may be screen printed on the garment as well as the tote bag. This enables the agency to market itself for fundraising. See Illustration 1,2 &3 for technical sketches of prototype.

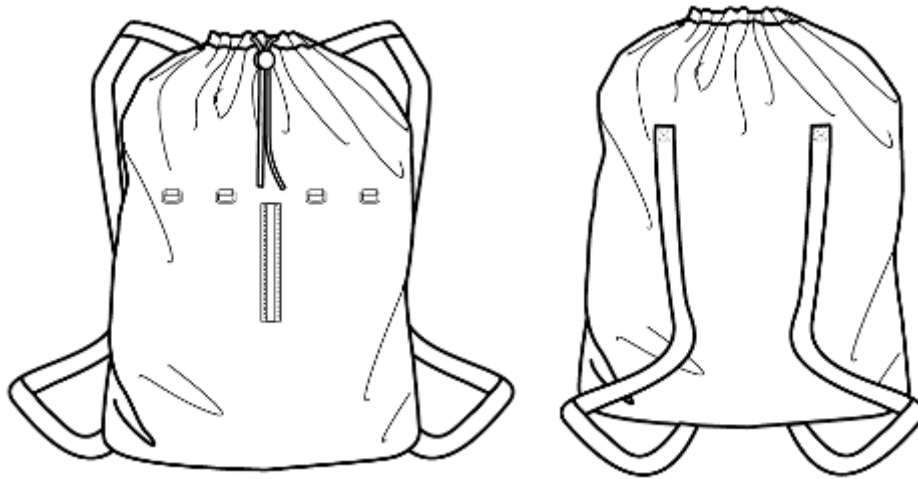


Illustration 1. Front and back views of backpack.

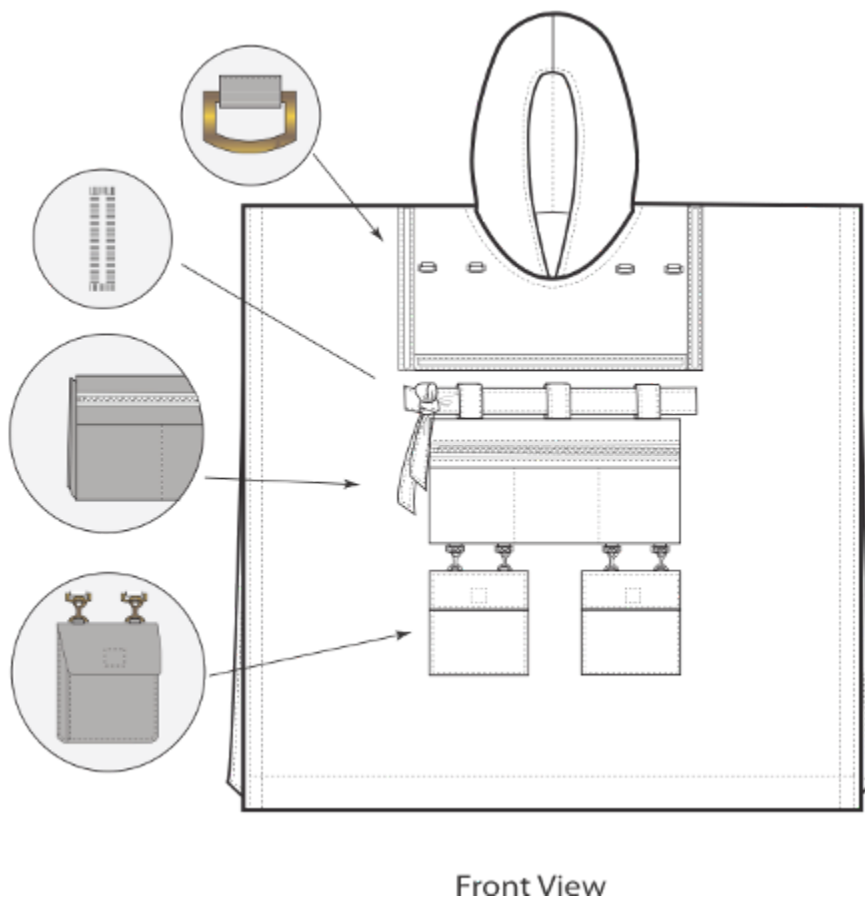


Illustration 2. Technical sketch of survivor poncho with pocket details.

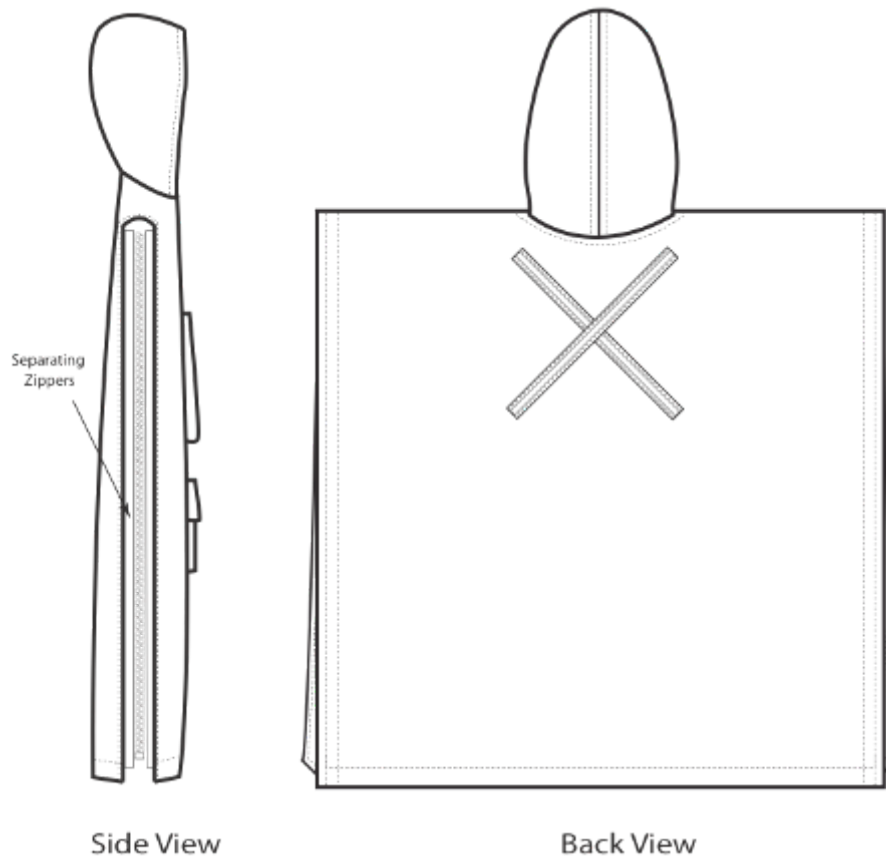


Illustration 3. Technical sketch of survival poncho with side zipper and safety strip detail.

Discussion

Limitations. Minimum order quantities and the associated exorbitant expense were the two main limitations to prototype design and product costing. The pattern of the survival poncho is versatile as it may be fabricated from any variety of textiles. There are several technical innovations in the realm of performance fabrics. Regretfully, textiles that incorporated most of the required properties were expensive and not available in sample yardage, for example fabrics treated with a *NanoSphere* finish, developed by Schoeller Technologies AG, Switzerland. Textiles treated with NanoSphere are highly water and abrasion resistant, self-cleaning, breathable, and ecologically conscious (Schoeller Technologies AG, n.d.b). Another ideal choice

would be *c_change*, a new bionic membrane technology also from Schoeller. Aside from being breathable and wind- and waterproof, the membrane has the rare ability to react to changing temperatures, humidity, and body moisture (Schoeller Technologies AG, n.d.a). Order quantity was also a limitation in the matter of hardware used on the garment. *Snap Track* is a universal design zipper manufactured by YKK for its ease of use by all age groups and every level of ability. Ideally, plastic hooks and D-rings for the pockets would have been more lightweight as compared to the metal ones used on the prototype.

A more overarching limitation to the project was the fact that cultural clothing is different to every region. Survivors in Haiti and in sub-Sahara may wear western attire when it arrives as clothing aid, however survivors in the Middle East and East and South-East Asia may be culturally restricted from doing so. Therefore the design solution that emanated from this project does not have a clothing connotation but rather an outerwear focus, serving to shelter survivors until a time when culturally appropriate clothing may be arranged domestically.

Clothing functionality is different in every disaster situation. Survivors of forest fires and volcanoes may need flame-retardant apparel and non-abrasive garments for those sustaining heat-related injuries. Even survivors of a tsunami and a flood have different needs. This is why the survival poncho offers needed flexibility as it could be used in many disaster situations, and by merely changing the textile properties, could be made applicable to most situations including that of refugees and the homeless.

Impartiality and proportionality. As Cosgrave (2010) reminds us, “Aid is appropriate only if it meets the needs of the affected population” (p.16). One of the key advantages of including clothing in disaster relief survival kits is the homogeneity of response. People across the strata of society will benefit from uniform clothing aid. The fact that more affluent people in the

cities received a superior portion of aid was voiced frequently during focus group discussions and interviews. It affected the survivors enough for them to be upset about it after more than 6 years.

Another prominent aspect of the survival prototype is concerned with proportionality of response. Aid in the form of donated clothing is usually superfluous to the needs of survivors. It may be that the survivors of a disastrous event may not be in need of clothing as much as shelter, or vice versa. The benefit of including the survival poncho in relief packages is that only as many garments that are needed are utilized. During focus group discussions and interviews, participants repeatedly expressed indignation over excess clothing being flushed down rivers, entangling animals and toddlers, and left abandoned in roadside heaps. By using clothing specifically designed for this purpose, the time, cost, and negative environmental impact of transportation, storage, distribution and disposal are greatly reduced. The proposed model for clothing aid protocol is reflected in Table 2.

Table 2

Proposed Clothing Aid Model

Phase	The need	Current protocol	Proposed protocol
Rescue	Blankets	Blankets	Blankets
Relief	Climate & culture appropriate clothing	Used donated clothing (domestic & international)	Survival ponchos
Recovery	New cultural clothing multiples	Used donated clothing (domestic & international)	New & used domestic donated clothing

Street side bazaars and flea markets have mushroomed in Haiti, Pakistan, Africa, and several other countries where donated relief clothing was dispatched. Though these enterprises provide employment in the short term, they regretfully undermine domestic economies in the long run. If the survival apparel is manufactured in regions within close proximity to high disaster risk areas, then there will certainly be lower carbon footprint, less waste and increased economic opportunity in the manufacturing sector.

Chapter 5: Future Directions and Conclusion

Future Directions

The garment is to be field tested in a simulated use situation. The participant for field-testing should be given the garment packaged in the tote with no further instruction on how it is to be worn. In this manner, the ease of use of the design can be assessed. While climbing stairs, walking, or squatting, the participant transports a number of generic items that are usually in the possession of survivors. This will test the load-bearing functionality of the garment.

Furthermore, the wearer will test the garment in warm weather outdoors, and in an artificially cooled indoor environment. In order to simulate rain, the prototype will be sprayed with a hose to test the water resistance of the fabric. The participant will be asked to complete a post field-test questionnaire based on the Likert scale. Ideally, the garment prototype may be shown to the interview and focus group participants over a Skype session and their feedback incorporated in refining the design.

The survival poncho is a garment that may be used by most government and non-government humanitarian agencies as part of their relief efforts. As an outer garment, it may be feasible for governments to manufacture generic clothing for men, women, and children as part of their disaster mitigation and emergency preparedness strategy. Some of the more established international aid agencies operate regional offices all over the world. One of the participants of this study was employed by such an agency and it was reported that it manufactures small quantities of cultural clothing for inclusion in its aid efforts. It would be easier to exploit economies of scale if international humanitarian agencies were to group clothing aid in regional clusters based on similarity of dress. For example, clothing in Afghanistan, Pakistan, India, and Bangladesh is very similar and can be produced together. Similarly, clothing for Indonesia,

Malaysia, the Philippines, and some regions of China can be manufactured generically. If one country is afflicted, other countries in that cluster could rapidly deploy clothing aid. This is a more sustainable proposition.

There are numerous international independent humanitarian “Without Borders” organizations that focus in specific skills; for example Doctors Without Borders/Médecins sans frontières (DWB/MSF) and Engineers Without Borders (EWB). The principle investigator thus has suggested “Tailors Without Borders”; this idea is still in inception, existing currently as a group on a social media site. This group proposes to send a team of apparel builders from around the world to post-disaster zones where they conduct rapid clothing needs assessments, set up camp, and sew as many clothes as needed using a just-in-time manufacturing model. Regional suppliers may be persuaded to donate generators, machines, and fabric. In this manner, clothing produced would not seem “uniform-like,” would fit well, be culturally correct, and would not impair the environment.

Conclusion

With the accelerated rate of disasters, the humanitarian sector looks upon itself and its practices with regular reflexivity so that it may filter out best practices and address gaps and holes in relief management. This is a daunting task, for the nature of support needed is always different based on type of disaster as well as the geographical and economical region. International humanitarian agencies depend on the generosity of donors. In the event of a disaster, the funding is driven by media attention and fund-raising. Not all emergencies are televised and consequently are underfunded; for example, the Sahel food crisis in Africa that is ongoing, however neglected by media. People there are suffering just as much, but are less visible due to lack of sufficient media attention.

In order to inculcate homogeneity in response, it is crucial that donors respond with financial contributions. Donating cash is more convenient than organizing food and clothing drives. Money can be transferred quickly and it does not utilize scarce resources such as transport, storage, and distribution. It allows the humanitarian agencies to purchase only what is needed and thereby supporting domestic economies of the disaster-stricken region. It enables impartiality of response by providing standardized aid to everyone regardless of publicity, political influence, and financial ability. The prototype ensuing from this study may be included in relief aid with the support of financial contributions. Aside from its thermal performance and other aforementioned functional aspects, the survival poncho addresses the need for a homogeneous response so that people who suffer the same fate do not receive different aid. Inclusion of the survival poncho in non-food item aid packages strengthens disaster preparedness and mitigation programs worldwide so people are less vulnerable after natural disasters. The need to transport containers of clothing over large distances which eventually adds to existing challenges is reduced. Since it is one-size, culturally appropriate, and may be worn by both genders, the survival poncho is convenient for relief workers to distribute with ease. It imbibes most aspects of the survivors' requirements and it upholds the contention that aid should be for the survivors based on participation by the end-users.

Appendix A: Aid Administrators' Consent Form



CONSENT FORM FOR PARTICIPANTS OF INTERVIEWS IN A RESEARCH STUDY

Functional Clothing for Natural Disaster Survivors

Principle Investigator: Nabeela Ahsan, MA Student, Ryerson University, School of Fashion, Toronto

Research Advisor: Sandra Tullio-Pow, Associate Professor, Ryerson University, School of Fashion, Toronto

You are being asked to participate in a research study. Before you give your consent to be a volunteer, please read the following information and ask as many questions as necessary to be sure you understand what you will be asked to do. If you later have questions about this study, you may contact:

Nabeela Ahsan

Telephone Number: +(416) 618 8634

Email: n3ahsan@ryerson.ca

Purpose of the Study

This research aims to investigate the clothing requirements of people affected by natural disasters. Functional, aesthetic and emotional clothing needs will be assessed and incorporated into designed prototypes by conducting interviews and focus groups with survivors, relief volunteers and aid administrators.

Procedure

For the interview, you will be asked your name, designation and the agency. You will subsequently be asked about clothing aid protocol during and after the Pakistan earthquake in 2005, and more current practices. You will be asked for your opinions concerning functionality and aesthetics of clothing that may be specifically designed for disaster situations. The conversation will be digitally recorded. The estimated duration for the interview will be 30 minutes. These forms will be emailed to you, please read them and should you consent to participate in the study, sign and send them back to the principle investigator via email. A date and time will be arranged for a phone interview.

Risks

There are no known major risks associated with the participation in this interview. However, remembering the experiences of the earthquake may be disturbing and cause feelings of sadness. If you feel overwhelmed, you may take a break or leave the discussion.

Benefits

Your insights about clothing needs after disasters will enable us to design clothing that will be effective and appropriate for survivors of similar disasters in the future.

Confidentiality

Excerpts from the interview will appear in research reports, conference proceedings and journal articles. Your name will not be used and you will not be identifiable in any way. The name of the agency you represent may appear in the report. All information collected from you, including the compact disk of digital recordings will be kept confidential and in a locked drawer of a cabinet in the Ryerson University premises. It will not be shared with anyone outside the study unless required by law.

Study records generated from the interview may be visited by the Ryerson University Ethics Board to make sure that guidelines and laws have been followed. Other than that, only the research team will have access to the information for the purpose of this study only. Data will be stored for seven years and then it will be shredded and the recording destroyed.

Costs and/or Compensation for Participation

There will be no compensation for your participation in the interview.

Participation

Participation in this study is voluntary. You have a right to refuse to participate. You may also stop participating in this study at any time. Your choice of participation will not impact on your relationship with Ryerson University in any way. In order to decide whether you wish to participate in this study, you should understand enough about the risks and benefits to be able to make an informed decision. This is known as the informed consent process. If you wish to participate, please sign at the end of this consent form. Otherwise, just return the form unsigned.

Any questions regarding your rights as a human subject and participant in this study can be directed to the Ryerson University Research Ethics Board for information.

Research Ethics Board
c/o Office of the Vice President, Research and Innovation
Ryerson University
350 Victoria Street
Toronto, ON M5B 2K3
416-979-5042

Agreement:

Your signature below indicates that you have read the information in this agreement and have had a chance to ask any questions you have about the study. Your signature also indicates that you agree to be in the study and have been told that you can change your mind and withdraw your consent to participate at any time. You have been given a copy of this agreement.

You have been told that this study will be audio recorded.

You have been told that by signing this consent agreement you are not giving up any of your legal rights.

Name of Participant (please print)

Signature of Participant

Date

Signature of Facilitator

Date

Appendix B: Relief Workers' Consent Form



CONSENT FORM FOR PARTICIPANTS OF INTERVIEWS IN A RESEARCH STUDY

Functional Clothing for Natural Disaster Survivors

Principle Investigator: Nabeela Ahsan, MA Student, Ryerson University, School of Fashion, Toronto

Research Advisor: Sandra Tullio-Pow, Associate Professor, Ryerson University, School of Fashion, Toronto

You are being asked to participate in a research study. Before you give your consent to be a volunteer, please read the following information and ask as many questions as necessary to be sure you understand what you will be asked to do. If you later have questions about this study, you may contact:

Nabeela Ahsan

Telephone Number: +(416) 618 8634

Email: n3ahsan@ryerson.ca

Purpose of the Study

This research aims to investigate the clothing requirements of people affected by natural disasters. Functional, aesthetic and emotional clothing needs will be assessed and incorporated into designed prototypes by conducting interviews and focus groups with survivors, relief volunteers and aid administrators.

Procedure

The primary investigator will contact you via email and set up a time and location that is convenient to you. You will be sent this consent form and asked to read, sign, scan and email it back. The facilitator, Sahar Atif, will arrive with a laptop and portable Internet device on the appointed time. She will collect the consent forms from you. After that, she will set up a Skype Interview with the primary investigator who will ask basic questions about name, age and occupation. You will subsequently be asked about experiences related to clothing aid protocol during and after the earthquake. You will be asked for your opinions regarding functionality and aesthetics of clothing that may be specifically designed for disaster situations. The conversation will be digitally recorded. It is expected that the interview may last for 30-40 minutes.

Risks

There are no known major risks associated with the participation in this interview. However, remembering the experiences of the earthquake may be disturbing and cause feelings of sadness. If you feel overwhelmed, you may take a break or leave the discussion.

Benefits

Your insights about clothing needs after disasters will enable us to design clothing that will be effective and appropriate for survivors of similar disasters in the future.

Confidentiality

Excerpts from the interview will appear in the research reports. Your name will not be used and you will not be identifiable in any way. All information collected from you, including the compact disk of digital recordings will be kept confidential and in a locked drawer of a cabinet in the principle investigator's residence. It will not be shared with anyone outside the study unless required by law.

Study records generated from the focus group may be visited by the Ryerson University Ethics Board to make sure that guidelines and laws have been followed. Other than that, only the research team will have access to the information for the purpose of this study only. Data will be stored for seven years and then it will be shredded and the recording destroyed.

Costs and/or Compensation for Participation

You will be assigned an honorarium of PKR 2,000 for your complete participation.

Participation

Participation in this study is voluntary. You have a right to refuse to participate. You may also stop participating in this study at any time. Your choice of participation will not impact on your relationship with ERRA or Ryerson University in any way. In order to decide whether you wish to participate in this study, you should understand enough about the risks and benefits to be able to make an informed decision. This is known as the informed consent process. If you wish to participate, please sign at the end of this consent form. Otherwise, just return the form unsigned.

Any questions regarding your rights as a human subject and participant in this study can be directed to the Ryerson University Research Ethics Board for information.

Research Ethics Board
c/o Office of the Vice President, Research and Innovation
Ryerson University
350 Victoria Street
Toronto, ON M5B 2K3
416-979-5042

Agreement:

Your signature below indicates that you have read the information in this agreement and have had a chance to ask any questions you have about the study. Your signature also indicates that you agree to be in the study and have been told that you can change your mind and withdraw your consent to participate at any time. You have been given a copy of this agreement.

You have been told that this study will be audio recorded.

You have been told that by signing this consent agreement you are not giving up any of your legal rights.

Name of Participant (please print)

Signature of Participant

Date

Signature of Facilitator

Date

Appendix C: Focus Group Participants' Consent Form



CONSENT FORM FOR PARTICIPANTS OF FOCUS GROUP DISCUSSIONS IN A RESEARCH STUDY

Functional Clothing for Natural Disaster Survivors

Principle Investigator: Nabeela Ahsan, MA Student, Ryerson University, School of Fashion, Toronto

Research Advisor: Sandra Tullio-Pow, Associate Professor, Ryerson University, School of Fashion, Toronto

Research Facilitator: Munir Qureishi, Muzaffarabad, Pakistan

You are being asked to participate in a research study. Before you give your consent to be a volunteer, please read the following information and ask as many questions as necessary to be sure you understand what you will be asked to do. If you later have questions about this study, you may contact:

Nabeela Ahsan

Telephone Number: +(416) 618 8634

Email: n3ahsan@ryerson.ca

Purpose of the Study

This research aims to investigate the clothing requirements of people affected by natural disasters. Functional, aesthetic and emotional clothing needs will be assessed and incorporated into designed prototypes by conducting interviews and focus groups with survivors, relief volunteers and aid administrators.

Procedure

You will meet with Sahar Atif as part of a small group. She will ask basic questions about name, age and marital status. She will subsequently ask about experiences related to clothing during and after the earthquake. You will be asked for your opinions regarding functionality and aesthetics of clothing that may be specifically designed for disaster situations. The conversation will be video recorded. The discussion will take 1 hour.

Risks

There are no known major risks associated with the participation in focus group discussions. However, remembering the experiences of the earthquake may be disturbing and cause feelings of sadness. If you feel overwhelmed, you may take a break or leave the discussion.

Benefits

Your insights about clothing needs after disasters will enable us to design clothing that will be effective and appropriate for survivors of similar disasters in the future.

Confidentiality

Since this is a focus group discussion, your identity and your conversation cannot be kept confidential from members of this discussion.

Excerpts from the focus group discussions may appear in research reports, conference presentations and journal articles. In our documentation, your names will not be used and you will not be identifiable in any way, except by gender. All information collected from you, including the compact disk of digital recordings will be kept confidential and in a locked drawer of a cabinet at Ryerson University, Toronto. It will not be shared with anyone outside the study unless required by law.

Study records generated from the focus group may be visited by the Ryerson University Ethics Board to make sure that guidelines and laws have been followed. Other than that, only the research team will have access to the information for the purpose of this study only. Data will be stored for seven years and then it will be shredded and the recording destroyed.

Participation

Your participation in this study is entirely voluntary. You may choose not to participate, or once you have started, to stop at anytime without any repercussions. You do not have to give reasons for this and your choice to suspend participation will not impact your vocational training or your relationship with Ryerson University.

Costs and/or Compensation for Participation

There will be no monetary compensation for taking part in this study. Refreshments will be available.

Participation in this study is voluntary. You have a right to refuse to participate. You may also stop participating in this study at any time. Your choice of participation will not impact on your relationship with Ryerson University in any way. In order to decide whether you wish to participate in this study, you should understand enough about the risks and benefits to be able to make an informed decision. This is known as the informed consent process. If you wish to participate, please sign at the end of this consent form. Otherwise, just return the form unsigned.

Any questions regarding your rights as a human subject and participant in this study can be directed to the Ryerson University Research Ethics Board for information.

Research Ethics Board
c/o Office of the Vice President, Research and Innovation
Ryerson University
350 Victoria Street
Toronto, ON M5B 2K3
416-979-5042

Agreement:

Your signature below indicates that you have read the information in this agreement and have had a chance to ask any questions you have about the study. Your signature also indicates that you agree to be in the study and have been told that you can change your mind and withdraw your consent to participate at any time. You have been given a copy of this agreement.

You have been told that this study will be video recorded.

You have been told that by signing this consent agreement you are not giving up any of your legal rights.

_____ Agree to participate in the study
_____ Agree to be video-recorded

Name of Participant (please print)

Signature of Participant Date

Signature of Facilitator Date

Appendix D: Checklist for Facilitator

FUNCTIONAL CLOTHING FOR NATURAL DISASTER SURVIVORS

NABEELA AHSAN

MA- FASHION

RYERSON UNIVERSITY

OCTOBER 2011

Checklist for the facilitator as protocol for recruitment of focus group participants

To the facilitator,

- It is important that the potential participants are approached after they have finished their day's work at the vocational camp.
- Please ensure that you ask them if they have 10 minutes to speak to you and that they are not in a hurry to be home.
- If they do not know you, identify yourself.
- Using a level of language they understand, speak clearly and concisely about the project.
 1. Ask them if they are willing to participate by sharing their experiences related only to relief after the earthquake. They will be asked to contribute their ideas about improvement specifically to clothing aid and that is valued and important information that will benefit other people in the same situation.
 2. Let them know that their participation will not affect their vocational training or any aid they receive presently or in the future in any way.
 3. Let them know that there is a chance that they may feel sad by recounting their experiences and they will have a choice not to answer questions.
 4. Inform them that the discussion will take 1 hour.
 5. Let them know that refreshments will be served once the focus group session is complete.
- If they have questions, answer them. Be clear that there will be no monetary awards and no give-aways.
- If they agree, ask for their availability, and how they can be contacted. Co-ordinate with the other participants and set a time and place that is mutually convenient.
- If they do not agree, do not press them but ask them if they know of other people in their family, neighbors and friends who might be interested.
- Thank them for their time.

Appendix E: Moderator's Guide for Focus Group Discussion

School of fashion, Ryerson University
Functional Clothing for Natural Disaster Survivors

PI: Nabeela Ahsan
RS: Sandra Tullio-Pow

Session Facilitator's Script

Focus Group Script

(This script is intended for session Facilitators only)

1. Introduction (5 minutes)

Every year there are natural disasters in some part of the world. In order to help relief agencies help survivors in a better way, this research project aims to find the best options for clothing aid so that they can get faster access to clothing that is right for them. We are meeting today so you can help us understand what survivors need after a disaster and how clothing should be designed to fulfill those needs.

Highlight the Confidentiality and Risk Issues unique to focus groups:

The only significant risk to participation in this study is that you will be asked to reveal your personal opinions mainly in a group setting. We are asking you to promise as a part of the consent that the opinions expressed in the group will stay within the group. We will not use the data for any other purposes than the research as stated in this project. However, because of the nature of focus groups, absolute confidentiality cannot be assured, as the other members of the group will know your identity.

The session will be video-recorded. In the transcription process all names or other identifying features will be removed. In addition, transcripts will be available only to study team members. All data will be reported anonymously in presentations and publications arising from this study. Confidentiality cannot be maintained from fellow participants of the discussion.

- Collection of signed Consent Forms
- General information – location of washrooms, availability of refreshments, scheduled breaks, taping of discussion, etc.

2. Objectives of the focus group session (5 minutes)

Provide an overview of what the session is all about.

An introduction to Functional Clothing for Natural Disaster Survivors. What it is. Why the attendees were invited.

The purpose of this study is to determine the clothing needs of men, women and children during the relief phase of a disaster in order to develop functional and readily deployable garments. As survivors of the earthquake in 2005, we welcome your participation in this focus group, and thank you for coming today.

3. General rules of “conduct” for the session

(5 minutes)

Active participation is encouraged – you will benefit.
Everyone will have a say.
You will need to “share the air space”.
One conversation at a time.
There are no right or wrong answers or opinions.
Everyone’s views will be respected.
Feelings and emotions are valued.
No question or comment is considered “unworthy”.
Time will be provided for discussion.
If you don’t understand something, please say so.

4. Participants’ discussion on session themes

(40 minutes)

- Round-the-room introductions of attendees including age, education level and marital status

The focus group session will consist of soliciting participants’ discussion and contribution around the following key areas:

1. The distribution of clothing during and after the earthquake.
 - What was the weather like?
 - Did they receive blankets/sleeping bags?
 - Were they able to salvage clothing from their homes later?
 - When did they feel the need for more clothing? Where did they get it?
 - Who distributed clothing (individuals/agencies/NGOs)? How?
 - Was the clothing appropriate for their needs? Did they find correct sizes?
 - Did children find clothing to fit them?
2. The clothing needs of the survivors with respect to functionality, expression and aesthetics.
 - What were the clothing needs after the earthquake?
 - Were there things that they needed to carry on their person? What was the nature of their salvaged personal belongings? Was there theft prevalent in those days?
 - What were the religious, cultural and social requirements for their clothing?
 - Were they in a situation where they had to wear clothes that were not of their culture? If so, how did they feel about that?
 - Did they get to choose their own clothes? What were the qualities they were looking for?
 - Did they have a preference for certain fabrics and forms? How important was it for them to have gender based garments?

5. Closing Questions

(10 minutes)

Can anyone suggest features they would like to see in a garment produced for survivors of a natural disaster?

Does anyone have any questions they would like to ask?

6. Adjournment-refreshments

Collect all required material before leaving session facilities.

Appendix F: Interview Questions—Aid Administrators

Functional Clothing for Natural Disaster Survivors

THIS STUDY HAS APPROVAL OF THE RESEARCH AND ETHICS BOARD

Principle Investigator: Nabeela Ahsan, MA Student, Ryerson University, School of Fashion, Toronto

Research Advisor: Sandra Tullio-Pow, Associate Professor, Ryerson University, School of Fashion, Toronto

Interview Questions for Aid Administrators

1. Please state your name, designation and employer for the record.
2. Were you working in the humanitarian sector in Pakistan during the earthquake of 2005? Can you please state the name of the agency and your role at that time? What were your responsibilities in that position?
3. Can you briefly describe the nature and magnitude of the disaster and what was the response from the agency you worked for?
4. Did the agency distribute survival kits? What did they consist of?
5. Did the agency distribute blankets? Where are the blankets sourced? How are they transported to different countries and how are they stored? Describe the blankets in terms of size, fiber-content, packaging...
6. Do you include sleeping bags in survival kits?
7. How soon did you or team members visit the site after the disaster? Did you find that all the survivors: men, women and children have all that they needed?
8. What were the clothing needs of the survivors? How were they met domestically and by international aid agencies?
9. What were some issues regarding the clothing aid and distribution at that time?
10. Based on the current flood-related disasters in Pakistan, how have domestic and international agencies made clothing aid more efficient and effective?
11. What, in your opinion, should be the functional qualities of garments manufactured specifically for natural disaster situations? If prototypes were designed specifically for disaster relief, what would be the factors an aid agency would consider?
12. In your experience, what are the commonalities in clothing needs between different kinds of natural disasters?
13. Can you suggest an ideal system of deployment for clothing aid in the future?
14. Is there anything else you would like to add to this discussion?

Thank you very much for your participation. Please contact me if there are any further questions or insights.

Appendix G: Interview Questions—Relief Workers

Functional Clothing for Natural Disaster Survivors

Principle Investigator: Nabeela Ahsan, MA Student, Ryerson University, School of Fashion, Toronto

Research Advisor: Sandra Tullio-Pow, Associate Professor, Ryerson University, School of Fashion, Toronto

Research Facilitator: Munir Qureishi, Muzaffarabad, Pakistan

Interview Questions for Relief Workers

1. Please state your name, age, occupation and agency, if you are working for the humanitarian sector. What city do you live in?
2. Were you a relief volunteer during and after the earthquake in Pakistan in 2005? What location did you serve, when and for how long?
3. What were your responsibilities?
4. When you first arrived, how many days had passed since the incident?
5. What did you notice about the state of the survivors' clothing? Was it appropriate for the climate?
6. What belongings did they manage to salvage from the wreckage? Were they able to retrieve their clothes?
7. How was clothing aid deployed by domestic and international agencies?
8. What was the civilian response for clothing donations? How did it get there? Was there enough, or too much? How was the clothing distributed?
9. What were your observations regarding clothing needs of men, women and children?
10. What should be the ideal functions of clothing for survivors?
11. How should clothing relief be set up to facilitate relief agencies and survivors?
12. Is there anything you feel you need to add to this study?

Thank you for your participation. Please feel free to contact me if you should have any questions or further insights.

Appendix H: Research and Ethics Board Approval



To: Nabeela Ahsan
MA-Fashion

Re: REB 2011-313: Functional Clothing for Natural Disaster Survivors

Date: November 9, 2011

Dear Nabeela Ahsan,

The review of your protocol REB File REB 2011-313 is now complete. The project has been approved for a one year period. Please note that before proceeding with your project, compliance with other required University approvals/certifications, institutional requirements, or governmental authorizations may be required.

This approval may be extended after one year upon request. Please be advised that if the project is not renewed, approval will expire and no more research involving humans may take place. If this is a funded project, access to research funds may also be affected.

Please note that REB approval policies require that you adhere strictly to the protocol as last reviewed by the REB and that any modifications must be approved by the Board before they can be implemented. Adverse or unexpected events must be reported to the REB as soon as possible with an indication from the Principal Investigator as to how, in the view of the Principal Investigator, these events affect the continuation of the protocol.

Finally, if research subjects are in the care of a health facility, at a school, or other institution or community organization, it is the responsibility of the Principal Investigator to ensure that the ethical guidelines and approvals of those facilities or institutions are obtained and filed with the REB prior to the initiation of any research.

Please quote your REB file number (REB 2011-313) on future correspondence.

Congratulations and best of luck in conducting your research.

A handwritten signature in black ink, appearing to read "Nancy Walton".

Nancy Walton, Ph.D.
Chair, Research Ethics Board

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