Health & Place 45 (2017) 173–180

Contents lists available at ScienceDirect

Health & Place

journal homepage: www.elsevier.com/locate/healthplace

# Navigating 'riskscapes': The experiences of international health care workers responding to the Ebola outbreak in West Africa

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ARTICLE INFO

*Keywords:*
Risk perception
Riskscapes
Place
Health care workers
Ebola
West Africa

ABSTRACT

This paper draws on interview data to examine how international health care workers navigated risk during the unprecedented Ebola outbreak in West Africa. It identifies the importance of place in risk perception, including how different spatial localities give rise to different feelings of threat or safety, some from the construction of physical boundaries, and others mediated through aspects of social relations, such as trust, communication and team dynamics. Referring to these spatial localities as 'riskscapes', the paper calls for greater recognition of the role of place in understanding risk perception, and how people navigate risk.

## 1. Introduction

Managing risks, and perceptions thereof, are paramount to any global infectious disease response (Smith, 2006), both for the public and for the front-line health workers who are providing care. The ability to maintain a cadre of 'willing and able' health workers while minimizing any physical and psychological impact to them is an important need in outbreak management (cf. Chan and Huak, 2004; Maunder, 2006; Wu et al., 2009). Yet, we know surprisingly little about the contextual factors that attenuate or amplify perceptions of risk (cf. Kasperson et al., 1988) in a global infectious disease outbreak, impacting the availability, effectiveness and well-being of skilled health professionals. The 2013–2016 Ebola outbreak in West Africa, with its unprecedented magnitude, complexity, and human resource challenges, provides a unique opportunity to examine the perceptions of risks that determine the readiness and capacity of health care workers to carry out their duties under risky circumstances. Through interviews with international health care workers recently returned from West Africa, we unpack some of these perceptions of risk and locate them in a broader discussion on the role of spatial localities in modifying risk perception.

### 1.1. Risk perception of health care workers during infectious disease outbreaks

Since the first recognized Ebola outbreak in 1976 in a Belgian mission station in rural Zaire, spread by unsterilized needles and resulting in the deaths of 11 of 17 hospital staff and hundreds of locals (Burke and Ghysebrechts, 1978), Ebola-associated health care structures have been places of both aid and of risk. Insufficient hospital infrastructure, equipment, training or staffing may amplify the spread of the disease in both patients and health workers alike (WHO, 2015). Indeed, health care workers in the most recent Ebola outbreak were impacted at an unprecedented level. Analysis by the US Centre for Disease Control (CDC) of Ebola infections in health-care workers in Sierra Leone found incidence of Ebola infection among this group to be 8285 per 100,000, a rate which is 103-times higher than that in the general population (Kilmarx et al., 2014).

The reasons for these infections are multi-faceted, and not fully understood. Several reports have observed multiple risk factors in facilities in West Africa, including lack of standard operating procedures; staff shortages; incorrect triage or recognition of Ebola patients; delayed lab diagnosis; lack of or improper usage of personal protective equipment (PPE); poor delineation between high and low risk areas, amongst others (Kilmarx et al., 2014; Pathmanathan et al., 2014). Behavioral risks such as working longer than the recommended hours in isolation areas or rushing to the aid of sick patients before protecting themselves have been identified elsewhere (WHO, 2015).

Given the importance of a 'willing and able' cadre of front-line health workers during such outbreaks to the effectiveness of the public health response, it is important to understand how such risk environments are experienced by health workers. The literature around the experiences of health care workers in Ebola outbreaks is very limited however relevant findings can also be found in studies of health staff

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http://dx.doi.org/10.1016/j.healthplace.2017.03.016
Received 14 November 2016; Received in revised form 27 March 2017; Accepted 28 March 2017
1353-8292/ 

experiences during the H1N1 influenza and SARS outbreaks. Not surprisingly, fear of contracting and/or transmitting the disease, particularly to family members, is a common theme in studies of experiences of health care workers during these emerging infectious disease outbreaks (Corley et al., 2010; Gershon et al., 2016). The 1995 Ebola outbreak in Kitwit, DRC suffered from a high nosocomial infection rate, with 38% of all cases occurring in health staff, which resulted in extreme fear, with many staff and patients fleeing the hospital (Guimard et al., 1999). Other studies have demonstrated that despite fear and emotional distress, many staff feel a professional responsibility to continue, with feelings of professional duty conflicting with worry about potential transmission to loved ones (Ho et al., 2005; Hewlett and Hewlett, 2005). Beyond viral contagion, fear also resulted from attacks, threats, and hostility against health workers arising from community members suspicious of Ebola workers (Haggman et al., 2016; Gershon et al., 2016).

In many of these studies, personal protective equipment (PPE) emerged as a predominant factor in creating feelings of safety or risk in health staff. In some cases PPE was found to not be user-friendly (Lam and Hung, 2013), or in short supply (Hewlett and Hewlett, 2005; Guimard et al., 1999), and ambiguity in PPE guidelines left health workers feeling unprotected and undervalued, a feeling exacerbated by frequent changes in guidelines (Corley et al., 2010). In the most recent Ebola outbreak, in addition to creating feelings of safety (Haggman et al., 2016), the PPE was found to be uncomfortable and a barrier to patient care. Notably, in one study, 80% of participants reported a breach of PPE during their work (Gershon et al., 2016). Staff working during SARS in Toronto felt a sense of danger was exacerbated by uncertainty related to frequent changes in infection control procedures, when staff developed a fever, or entered quarantine (Maunder et al., 2003). Another SARS study, this one in Hong Kong (Ho et al., 2005) found the majority of respondents (56%) had low perceived control over the procedures in place to prevent infection. A number of factors influenced staff's ability to follow infection control procedures including heavy workload, stress, and sudden changes in procedures (Ho et al., 2005).

Institutional support and communication factors were found to impact feelings of risk in a number of studies. Lack of organizational clarity, unclear policies and procedures, and lack of basic resources increased stress in international health volunteers involved in the West Africa response (Gershon et al., 2016). Health worker experiences during previous Ebola outbreaks (Hewlett and Hewlett, 2005; Guimard et al., 1999) found institutional level factors played a significant role in increasing risk as staff, basic medicines and equipment were in short supply and hospital infrastructure was often inadequate (Guimard et al., 1999). Lessons learned from a US hospital caring for an Ebola patient noted the need for constant communication including "repeated, redundant, and detailed communications to all in and around a clinical situation" (p.5) in order to counter fear messages coming from the media (Matlock et al., 2015). The importance of training is highlighted in a study in Sierra Leone, with fear among health staff reduced following infection control training and remained higher among those health workers who did not receive trainings or have sufficient access to PPE (Dynes et al., 2015). Focus groups with nurses following the Kitwit outbreak revealed that nurses who volunteered to care for Ebola patients felt disappointed about lack of recognition by authorities, felt abandoned by management, and received insufficient psychological and financial support (Dynes et al., 2015).

The above studies, while elucidating important components of experiences of risk in infectious disease outbreaks, largely refer to local health staff. We found very few studies looking at experiences of international health workers responding to Ebola. The dimensions of mobility and temporality, as well as the additional resources, built structures, and policies and procedures of international agencies operate separately from local health systems. This creates a separate, often privileged position, differentiating international workers from local ones. This unique context is valuable to explore, as international health workers impacted the West African Ebola response capacity greatly, and will likely be required again in the future as pandemics become increasingly globalized. This study explores the unique perspectives of such international staff.

### 1.2. Analytical focus: Navigating 'riskscapes'

The word 'risk' was once a nautical term, incorporated into English from the Portuguese and Spanish, referring to the hazard of sailing into unchartered waters. As such, it had a strong spatial connotation (Denney, 2005). Later, a more temporal usage was adopted as the term was used in commerce, often adopted to refer to general conditions of uncertainty (ibid.). The word risk, in current usage, may refer to a hazard, a probability, a consequence, or a potential adversity or threat (Slovic and Weber, 2002; Slovic et al., 2004). A frequent usage is an 'actuarial' definition of risk, which sees risk as a numerical expectancy (probability x magnitude) which can be determined independently from its social or cultural context (Tversky and Kahneman, 1975). However, most social science research rejects a concept of risk as objective, existing independently of human minds and cultures. A social constructionist view has developed, which views risk as inseparable from its contextual factors:

> There is no 'right' definition of risk. Risk is a socially construed concept. Which components are taken into account and how they are weighed is not a question that can be decided scientifically or technically. Instead, the risk concept emerges and changes in the course of social and political debates. (Kasperson et al., 1988: p. 141)

The term 'riskscape' is commonly used to refer to places or environments associated with significant risk (Mair et al., 2011). Much of the riskscape literature takes a socio-ecological, and macro-level perspective to identify the set of individual, interpersonal, environmental and political factors that increase vulnerability to hazards (Cutter, 1996) or poor health (Morello-Frosch et al., 2001; Morello-Frosch and Shenassa, 2006; Hickson et al., 2015; Mair et al., 2011). What the riskscape literature lacks, however, are studies that explore how *perception* of risk contributes to the construction of the riskscape, as well as influences how it is navigated at a micro-level. Here we take inspiration from other 'scape' dimensions available in the geographical literature, particularly the agency dimension, key to conceptualisations of 'caringscape'. The concept of 'caringscape' was originally coined by McKie et al. (2002) to offer a theoretical framework for conceptualizing the time-space dimensions of parents' responsibilities for childcare and paid work in the global North. Drawing on Lefebvre's (2004) ideas about the 'reciprocal action' between time and space in everyday life, the caringscapes concept has been further developed to analyse the complex ways in which young people negotiate their caring trajectories temporally and spatially in African contexts (Evans, 2012). The concept explicitly locates individual experience and embodied practice (as individuals negotiate and navigate a route through a changing and varied terrain) in the context of social processes operating through time and space (Bowlby et al., 2010). As international health workers parachute in and out of uncertain environments, we will hone in on their micro-level 'riskscapes' to explore the spatial localities, or 'lie of the land' that make up a constellation of structures, people, relationships and policies that shape, and are shaped by, *perceptions of risk*. In doing so, we hope to disentangle concrete spatial localities of risk as perceived and experienced by international health workers responding to Ebola in West Africa.

We use the term spatial locality to mean a place that is socially produced, whether that place is 'home' or the 'hospital', and infused with significance, meaning and representations. Massey describes the meaning of place in a globalized world, which is pertinent to international health workers responding to a global infectious disease such as Ebola: