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# BLOODY NECESSARY: MENSTRUAL HEALTH MANAGEMENT AND EMERGENCY MANAGEMENT IN KANSAS

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## Abstract

This paper examines an important gendered aspect of disasters: Menstrual Health Management (MHM). Sociology of disasters research tends to overlook the ways in which gender matters when examining the impacts of extreme weather events, rising sea levels, and other natural and human-made disasters such as earthquakes and wars. When disasters lead to displacements, women can be especially vulnerable because of health needs (e.g., pregnancy) or exposure to social hazards (e.g., sexual and domestic violence). Disasters affect the health and well-being of menstruators (women and transgender, intersex, and non-binary people who menstruate) because of disruptions to sanitation, privacy, and menstrual supplies. Much research on MHM focuses on the global South, but disasters occur everywhere, including in the U.S. where menstruation frequently is overlooked as an important social need. To gain insight into this disregard of menstruators' needs during disasters, we examined the extent of MHM awareness by emergency planners in the state of Kansas. In 2020, we conducted a survey of emergency managers in all 105 Kansas counties asking about their inclusion of menstrual supplies in their disaster plans. We found that that Kansas is a microcosm of U.S. emergency planning in that a very small proportion of Kansas counties include MHM in their emergency plans. We

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situate our study of MHM during disasters within the broader U.S. and global menstrual equity and human rights movement. We conclude that changes in policies governing MHM in disasters are needed not only in relatively poor countries, but also in the U.S.

## **Introduction**

The World Health Organization and United Nations Children's Fund (WHO/UNICEF, 2012, p. 16) summarizes Menstrual Hygiene Management (MHM) as:

Women and adolescent girls are using a clean menstrual management material to absorb or collect menstrual blood, that can be changed in privacy as often as necessary for the duration of a menstrual period, using soap and water for washing the body as required, and having access to safe and convenient facilities to dispose of used menstrual management materials. They understand the basic facts linked to the menstrual cycle and how to manage it with dignity and without discomfort or fear.

As the WHO and UNICEF argue, MHM has both physical and mental health dimensions. Menstrual hygiene is critical in preventing urinary tract infections, toxic shock syndrome, and to maintain good reproductive health (Mayo Clinic, 2020), yet many menstruators (women and transgender, intersex, and non-binary people who menstruate) in the United States lack access to menstrual hygiene supplies (e.g., those who are without housing, in prison, or poor), especially during emergencies. Menstruators who do not have safe access to menstrual supplies during disasters face additional physical and psychological distress beyond that inflicted by the disaster because of their struggle to meet a basic need and the demands of managing the social awkwardness that routinely surrounds menstruation.

Much research on MHM focuses on the global South where limited income and sanitation resources as well as restrictive gender norms have been identified as major factors reducing menstruators'

access to menstrual products and full participation in education, religious, political, social, and economic life (VanLeeuwen and Torondel, 2018; Bobel, 2018; (Budhathoki *et al.*, 2018). The United Nations' Water, Sanitation and Hygiene (WASH) program reports that one-quarter of the world's population lacks access to safe drinking water, one-third lacks access to handwashing facilities with soap, and one-half lacks access to safe sanitation (UNICEF, 2021). When disasters occur, these water, sanitation, and hygiene deficits can become universal, impacting not only historically poor countries, but affecting those living everywhere in the global system.

The disruption of sanitation systems in many disaster settings around the world affects menstruators when they lose access to water, privacy, safe toileting facilities, and menstrual products. Menstruators' needs tend not to be included in emergency plans due to inattention, embarrassment, stigma, or the assumption that menstruation management is a personal responsibility (Sommer *et al.*, 2015; ELRHA, 2021; Perianes and Roberts, 2020; Sullivan and Nagel, 2020). The MHM deficit in emergency planning and response has been recognized only recently, but is widespread, spanning countries, classes, and diverse populations. This deficit extends to disaster planning in the United States, including the state of Kansas – the empirical focus of this paper.

In the sections below, we locate our research in relevant scholarship on gender and disasters, menstruation during disasters, menstruation stigmatization, and menstrual rights as human rights. We then focus on our research in Kansas to determine the extent to which MHM is included in the rationales and actions of emergency managers. By examining this specific case, we hope to gain insights into how and why MHM so often remains marginal in the thinking and planning of emergency managers.

### **Gender and Disasters**

In their study of 4600 natural disasters in 141 countries occurring between 1981-2002, Neumayer and Plumper (2007) found that disasters killed more women than men and lowered the life expectancy of women more than men. Women's relative vulnerability to disasters varied according to their socioeconomic status relative to men. In countries where women had more equal social and economic rights, the researchers found smaller

differences in deaths and life expectancy between women and men during or after disasters. Not all disasters are climate-related (e.g., earthquakes, volcanic eruptions), but many are, like heatwaves, droughts, floods, extreme weather events, and wildfires; and climate change is increasing the frequency and intensity of many natural disasters (IPCC, 2018). In the Fourth National Climate Assessment, the U.S. Global Change Research Program (USGCRP, 2018) reported that:

Earth’s climate is now changing faster than at any point in the history of modern civilization, primarily as a result of human activities. The impacts of global climate change are already being felt in the United States and are projected to intensify in the future.

The USGCRP report concluded that “Climate change creates new risks and exacerbates existing vulnerabilities in communities across the United States, presenting growing challenges to human health and safety, quality of life, and the rate of economic growth.”

Climate change and natural disasters are global phenomena, but their impact is not experienced the same around the world or within any single country. For instance, a landlocked state such as Kansas is not affected by rising sea levels or hurricanes, but Kansans are susceptible to flooding, drought, and extreme weather events such as unseasonal and unexpected precipitation patterns and heat waves (U.S. Environmental Protection Agency, 2016). Differently gendered outcomes from climate change-related disasters vary according to the type of disaster. Men are more vulnerable to wildfires since more firefighters are male; women are more vulnerable to heatwaves since pregnancy and older age are both risk factors in extreme heat events (Erickson, 2014; American Heart Association, 2019; Kaltsatou *et al.*, 2018).

No matter the type of disaster, gender differences are manifested throughout the disaster process. Women tend to have more childcare and eldercare responsibilities, whereas men are more likely to be involved in recovery work; women are more likely to suffer injury from sexual and domestic violence, whereas men are more likely to be injured in emergency responses and post-disaster reconstruction;

women are more likely to be located in shelters, whereas men are more likely to move away for work. Different gender vulnerabilities during disasters translate into different gender needs. Richter and Flowers (2008; 2010) emphasize the obstacles to health and well-being faced by women and girls in both initial impacts and disaster recovery, including those associated with pregnancy, childbirth, breastfeeding, contraception, rape, and sexually-transmitted diseases.

### **Menstruating during Disasters**

Another important challenge facing people who menstruate is the management of menstrual health during disasters, especially during displacement, when services such as access to water, shelter, and supplies are disrupted. The World Health Organization (2021) reports that around the world over 26 million women and girls are displaced annually due to humanitarian crises including natural disasters; many struggle to manage their periods safely and lack basic and affordable materials needed for handling blood flow such as access to menstrual products or facilities (e.g., tampons, pads, clean undergarments, private restrooms, or waste management options).<sup>1</sup>

Although MHM is a universal issue facing menstruators, their partners, families, and communities, consideration of menstrual health management seldom is included on the planning lists of emergency managers and response agencies. For instance, Khandakji (2018) reports that in their emergency response recommendations, “FEMA and the American Red Cross address

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<sup>1</sup> As noted above, not only girls and women menstruate; menstruators can be transgender, intersex, gender-fluid, and non-binary people as well. Menstruation is socially linked to “femininity” and “womanhood,” yet menopausal women, women post-hysterectomy, and intersex and transgender women are still women in the absence of menstruation (Frank, 2020). In this paper we use the terms “people who menstruate,” “menstruating individuals,” and “menstruators” to include all those who menstruate. That said, much of the literature we cite refers exclusively to “women” and “girls” when discussing menstruation. When citing findings from this literature, especially those involving statistics that include only women and girls, for clarity and accuracy we will adopt the language of the source. We also refer to “feminine hygiene products” because it is the language used in the emergency management literature and in our communications with emergency managers.

necessities like shelter, environmental response and safety, search and rescue, protection, public health, and emergency medical services.” Missing are MHM-related recommendations. “The American Red Cross, for example, does not highlight provision of feminine hygiene products in its list of health services and basic supplies which include first aid, refilling lost prescriptions, and replacing eyeglasses.” The Federal Emergency Management Agency (FEMA) still does not include MHM supplies in its “Basic Emergency Supply Kit,” but now has included “feminine supplies” in its list of “additional items to consider adding to an Emergency Supply Kit” (FEMA, 2021a).

Resources for managing menstruation and attitudes toward menstruation can influence the recovery and resilience of people who menstruate in disaster settings (Krishnan and Twigg, 2016). Recognition of the need for MHM assistance not only in disasters, but more broadly, has generated a variety menstrual support activities globally. The youth-run non-profit organization PERIOD has helped to raise awareness of “period poverty” (inadequate access to MHM resources) and menstrual stigma through its education, advocacy, and programs to provide menstrual products for those in need. Headquartered in Portland, Oregon, PERIOD has several hundred chapters globally that work to advance menstrual equity, change policies, and reshape menstrual attitudes (PERIOD, 2019). In the last few years, a number of U.S. universities, including the University of Kansas, have created programs to provide free menstrual products for students (University of Florida Health, 2018; Zhen, 2016). Despite these and other recent initiatives to provide more equitable access to menstrual products, the state of Kansas’ emergency management guideline do not include MHM procedures or products (Kansas Adjutant General, 2014, 2017).

### **Menstruation Stigmatization**

PERIOD is only one of a number of organizations in the U.S. and around the world that have begun to advocate for menstrual equity. Another NGO is the Pad Project which helped fund the Academy Award-winning film, *Period. End of Sentence* (Zehtabchi, 2019). The film traced the effort to create a low-cost sanitary pad business in rural India and to challenge the silence and stigma associated with menstruation. Some menstrual equity NGOs like the

Pad Project have been criticized for exaggerating the extent to which menstrual stigma interferes with girls' schooling or restricts women's rights (Bobel, 2018; Benshaul-Tolonen *et al.*, 2020). But researchers widely recognize that, around the world, menstruation is associated with shame and impurity, and call for the elimination of social taboos reinforced by social practices that affect menstruators' well-being, access to resources, and healthy menstrual hygiene management (Tellier and Hyttel, 2018; Kowalski and Chapple, 2000; Gottlieb, 2020; Stein and Kim, 2009).

Menstrual stigmatization is reflected in customary and modern law, products, media, and public and private discourse around menstruation (Winkler and Roaf, 2014; Miller, 2019). Menstrual product manufacturers design products to be unnoticeable through clothing and small enough to be hidden in a purse and discretely discarded in a bathroom container, and they are promoted as absorbing not only fluids, but also odors, and (Johnston-Robledo and Chrisler, 2013; Kissling, 2006). People who are menstruating or experiencing premenstrual syndrome (PMS) have long been stereotyped in books, films, and jokes as overly emotional, unstable, out-of-control, and/or physically or mentally ill (Chrisler and Levy, 1990; King, 2020).

The taboos associated with menstruation lead many menstruators to conceal their monthly period and, when routine MHM is impossible, many are reluctant to make menstrual needs known, especially in public settings or to strangers or authorities. In disasters this silent need can be dangerous. If menstruating individuals with an inserted tampon wade through flood water contaminated by chemicals and sewage, they are vulnerable to genital rashes and infections, including toxic shock syndrome, which, if untreated can damage organs and body tissue (Richter and Flowers, 2010). Menstruators who are faced with the unavailability of menstrual products during disasters can be:

forced to use torn pieces of clothing, dirty rugs, or sitting on old tin cans. These alternative methods used by women and girls to manage their periods are often ineffective, uncomfortable and unhygienic. They can lead to dangerous infections, and blood stains which cause women and girls to

feel embarrassed and isolated during their period (ActionAid, 2021).

Menstruation also is stigmatized through silence and avoidance in conversation. The word “period” often is replaced with euphemisms such as “that time of the month,” “Aunt Flo,” “the curse,” or “Mother Nature’s gift.” Menstruation frequently is avoided as an inappropriate topic for public discussion except in specific circumstances (e.g., in the doctor’s office, a health education class, or in private with friends and family) (Johnston-Robledo and Chrisler, 2013). Contending with menstrual social stigmatization can add to the distress experienced during a disaster. A Hurricane Katrina survivor reported that her daughter got her menstrual period for the first time while living in a shelter and stated, “I was just so sorry it had to happen there, and we had to go through that trauma there. She was confused about it, no privacy” (Fothergill and Peek, 2015, p. 126). Whether or not menstruator shares others’ negative opinions about menstruation, socially enforced secrecy and shame convey the message that natural aspects of menstruation (e.g., leaks of menstrual blood, exposing tampons and pads, the female body) are offensive leaving many menstruators feeling pressure to conceal them.

### **Menstrual Rights as Human Rights**

To counter the widespread stigma associated with menstruation, activists have linked menstrual rights to human rights. In 2017, the NGO, World Vision (2017), declared “Menstrual rights are human rights. Period.” They argued that “Empowering women and girls to manage their periods with dignity, is not an issue that women and girls should be left to deal with on their own.” “Dignity” is a common component in systems of rights. The first line in the Preamble to the United Nation’s 1948 Universal Declaration of Human Rights (United Nations, 1948) identifies human dignity as a foundational principle of human rights: “Whereas recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world....” Although the entire Universal Declaration referred twice to “men and women,” there was no separate recognition of any unique needs of women and girls.

Over the years since the Universal Declaration, the UN has been criticized for its gender blindness and sexism (Tod, 2020; ICRW, 2016). In response to this critique, the UN has established numerous working groups, commissions, and agencies to address the place of women in the organization and around the world (United Nations, 2021a, 2021b). Echoing former U.S. First Lady Hillary Clinton's 1995 declaration that "Women's rights are human rights" (Clinton, 1995), critics called for "mainstreaming" gender, moving it out of separate, often marginalized spaces within the UN (e.g., UN Commission on the Status of Women, UN Women). The goal of mainstreaming goal was to include gender considerations in all UN activities and agencies, including those involving human rights (United Nations, 2001; Hafner-Burton and Pollack, 2002). Menstruation has entered UN gender mainstreaming discourse, and the United Nations Population Fund (UNPF, 2019) has asserted that "Menstruation is not a girls' or women's issue – it's a human rights issue" (see also Zivi, 2020).

Recognizing and protecting menstruators' dignity and humanity as well as their physical and mental health have become the basis for the menstrual equity movement around the world (Weiss-Wolf, 2017; Human Rights Watch, 2017). In 2017, WASH United, an international rights organization focused on access to water, sanitation, and hygiene, partnered with Human Rights Watch to issue guidelines connecting menstrual hygiene management and human rights. The WASH United (2017) guidelines asserted that menstruation, MHM, and human rights should include human rights to water and sanitation, health, education, work, and non-discrimination and gender equity. Their work recognized that menstrual stigma gives rise to a range of human rights violations. For instance, many menstruators, especially transgender, intersex and non-binary individuals, are at risk of verbal harassment, exclusion, and even violence in public restrooms (de Albuquerque, 2013).

The global menstrual equity movement is not primarily concerned with MHM during disasters. The movement supports gender and menstrual rights broadly through programs intended to end the stigma and restrictions faced by many menstruators and expand access to menstrual hygiene products. Two strategies used by menstrual equity movement organizations are to reduce or

eliminate period poverty and to repeal the “tampon tax” to make menstrual products affordable for all (Upadhye, 2016; Magistretti, 2019). Campaigns to end period poverty seek to provide menstrual hygiene resources (products, washing facilities, waste management) and reduce the secrecy surrounding menstruation (AMWA, 2019). Efforts to abolish the tampon tax in the U.S. take aim at both period poverty and gender equity, and have gained momentum since 2016 when only five states exempted menstrual products from state sales taxes; by 2019 that number increased to 13, with lawmakers in more than a dozen states introducing legislation to decrease or repeal the so-called “pink tax” (Zraick, 2019). In 2020 Scotland voted to offer free sanitary products to anyone who needs them (Gross, 2020). In the same year Germany reduced taxes on menstrual products (they had previously been classified as “luxury goods”), and in 2021 the United Kingdom repealed the “tampon tax” (Morales, 2021).

In light of the recognition of menstrual rights as a dimension of human rights, the mobilization to provide menstrual support products around the world, and the fast-moving campaign to reduce or remove taxes from menstrual products, it is puzzling that many disaster response organizations like the American Red Cross and the FEMA have been slow to address period poverty in disaster planning. In order to explore this discrepancy on the ground, in 2020 we launched an Internet survey of Kansas county emergency planners and asked them about the inclusion of MHM in their emergency plans. We discuss our approach and findings in the next sections. The data collection was conducted by the first author (Mullins) for her Senior Honors Thesis and the research was approved by the University of Kansas Human Research Protection Program.

### **Menstrual Health Management and Emergency Management in Kansas**

FEMA was established in 1979 by President Jimmy Carter with the dual mission of emergency management and civil defense. The agency focused mainly on emergency management after the 1988 Disaster Relief and Emergency Assistance Amendments to the Stafford Act (FEMA, 2021b). In order to qualify for disaster assistance from FEMA, U.S. federal law requires states to designate emergency managers at the state and county levels (FEMA, 2019).

Kansas law requires that all counties have a designated county emergency manager and have established a comprehensive emergency management program and plan (Kansas Adjutant General's Department Division of Emergency Management, 2017).

Kansas county-level emergency managers are responsible for coordinating local resources based on policies set forth in their county emergency operations plan (EOP). An emergency manager follows local ordinances and coordinates with local organizations and government entities throughout the phases of emergencies – preparedness, response, mitigation and recovery (Jensen et al., 2014). When local resources cannot fulfill needs in a disaster, emergency managers may request assistance from the state government and Emergency Support Function (ESF) agencies. The Kansas Division of Emergency Management (KDEM) may assist county emergency managers in connecting needs of the population to the American Red Cross, ESF agencies, and volunteer organizations involved in disaster response. Emergency managers leverage their relationships with these agencies and organizations to obtain resources and supplies needed in the event of a disaster. For instance, the human services director from KDEM can coordinate with county emergency management when shelter operations are needed. Our study focused on county emergency managers because they work with government and non-governmental agencies at the local, state, and national level to aid disaster victims. Their liaison and planning roles position them to be knowledgeable about the extent to which MHM considerations are included in disaster planning and response.

### **Research Methods**

In order to determine the extent to which county emergency managers are aware of and/or have addressed MHM in their plans and supplies, we sent a brief email survey to all 105 county level emergency managers in Kansas in early 2020 (Appendix A). In the survey we asked if their current county emergency plan or supplies included menstrual products such as tampons, pads, disposable bags, or other women's products (see Figure 1).

Emergency managers who responded were sent a follow-up email asking if they could be contacted by phone for an interview in order to ask more in-depth questions about their emergency plan and

**Figure 1. Kansas County Emergency Manager Email Survey**

Can you tell me if your emergency plan supplies include women's menstrual products such as tampons, pads, disposal bags or other women's products?

No

Yes, if so, what kinds of plans or supplies do you include in your plan?

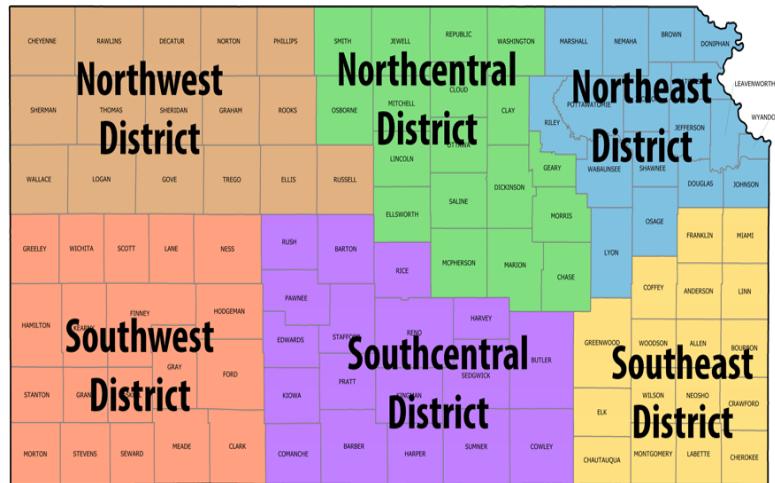
supplies. An interview guide facilitated the discussion of the extent to which the county integrated menstrual and female-specific health concerns in the EOP, inclusion of menstrual products in supplies, and which agencies and organizations the county works with in response to emergencies (Appendix B). In addition to the analysis of emergency manager surveys and interviews, to get a better understanding of emergency response coordination between emergency managers and their emergency support function agencies, we contacted representatives from the KDEM and American Red Cross for brief interviews.

Survey and interview data were used to create a list of frequently mentioned terms ("American Red Cross," "Individual preparation," "Disaster go-bag/go-kit," "Emergency response partners," and "limited resources") to identify trends in responses. There were several recurrent themes in the data: "financial barriers," "individual preparation," "Emergency Support Function agencies," and "networking with Emergency Support Function agencies." In order to assure anonymity of responding county emergency managers, correspondence and conversations are anonymous and identified only by their region in the state. Figure 2 is a map of Kansas counties (Kansas County Clerks and Election Officials Association, 2020).

## **Findings**

One-quarter (27) of the 105 Kansas county emergency managers who were invited to participate in the email survey responded. As Table 1 shows, 88.9 percent (24) emergency managers reported MHM was not included and 11.1 percent (3) reported that MHM was included in their county EOPs.

Although nearly 90 percent of emergency managers who responded to the survey reported that their county did not include

**Figure 2. Kansas State Regions**

MHM in their plans or supply stockpiles, nearly two-thirds reported that they would seek MHM assistance from NGOs or other organizations if necessary. For instance, 17 respondents (63.0 percent) reported they would seek help from the American Red Cross and/or another organization to obtain menstrual or women's products if a need was present in the event of a disaster.

Three emergency managers who responded to the email survey agreed to a 15-minute telephone interview. We asked the extent to which the county integrated menstrual and gender-specific health concerns in the EOP, included menstrual and gender-specific products in supplies, and if the county coordinated with private organizations in response to emergencies. When asked about the county EOP, an emergency manager in the southeastern district of Kansas stated, "No, our county Emergency Operations Plan does not specifically include women's or menstrual supplies for sheltering displaced residents." This is consistent with the responses of other two emergency managers; one from the southcentral district described that the emergency plan as "generic and is more about what an agency does, and the primary duties as opposed to specifics."

**Table 1. Kansas County Emergency Managers Survey Responses (n=27)**

Response	Number of Counties that Include MHM in EOP's
Yes	3 (11.1%)
No	24 (88.9%)

## **Discussion**

Our surveys and interviews revealed four main reasons for the omission of MHM in Kansas county emergency planning: limited resources, reliance on individual responsibility, emergency response organizational complexity, and failure to recognize MHM as an important planning need or responsibility.

### ***Limited Resources***

One clear finding from the surveys and interviews is budgetary. Even if counties were aware of and inclined to include MHM in their disaster response plans, their capacity to do so is limited by available resources. As an emergency manager in a rural county stated, “As for supplies for possible disaster events, we just don't have the financial resources nor storage for everything that I feel needs to be on hand.” Another emergency manager from a different district confirmed this: “Smaller counties and municipalities often may not stock items such as food, water, replacement clothing or women’s supplies to equip shelters. The initial investment is high, and the cost to constantly inventory (labor) and replenish expired items is higher.”

Smaller counties not only have more modest budgets, counties with lower population densities are the least likely to qualify for state and federal grants that use population size as a formula factor in emergency response funding, thus limiting their capacity to purchase and store disaster supplies including menstrual products (Caruson and MacManus, 2008). MHM is neither a high priority nor a budgeted expense for most Kansas counties.

### ***Reliance on Individual Responsibility***

A second finding from the surveys and interviews of emergency managers is their expectation that individuals and communities should prepare themselves for disasters. Several counties reported the importance of each household having a “disaster go-kit/go-bag”

with items to fit their specific needs. In an emailed response to our survey, one emergency manager reported, “Each household’s ‘Go Bag’ should include medicine, important papers, money and personal hygiene/ toiletries etc.” Despite emergency managers’ expectations, many individuals and households don’t have disaster plans and/or don’t prepare disaster supplies. This is not a problem unique to Kansas. In a 2006 survey of 1200 households in Oregon, only 39 percent had a household emergency plan and only 41 percent of respondents had prepared a disaster go-kit (Oregon Natural Hazards Workgroup, 2007). In 2012 FEMA (2013) conducted a national survey of emergency preparedness with similar findings: only 43 percent of households reported having an emergency plan and about half of households (52 percent) had emergency supplies in their homes. A study of household disaster preparedness in Florida concluded that “households, even with significant experience of disasters, can be complacent in response to disasters” (Kapucu, 2008). The lack of MHM preparedness extends beyond U.S. borders. In New South Wales, Australia, in a survey following a 2007 major storm-related disaster, Cretikos *et al.* (2008) found that only 42 percent of households made storm preparations, and only 23 percent reporting having what researchers designed “essential” supplies (a flashlight, battery-powered radio, batteries, mobile phone, emergency contact list, and first aid equipment).

County emergency managers’ emphasis on individual preparedness tends to put the burden of emergency planning on women since care-related tasks often are women’s work. This gendered division of labor, however, does not guarantee MHM supplies will find their way into go-bags if they are not designated as essential supplies and are not included in official disaster packing lists. Kansas county emergency managers recognized the likely omission of MHM supplies in emergency planning. A county emergency manager in a southeast district explained, “I think sometimes we get blinders on and only remember the essential items such as water or food but fail so many times in not planning for those [menstrual] items as well.” If women provide the bulk of the care for children, elderly, and the ill, then MHM might not be prioritized because it is seen as essential. Again, this is true beyond U.S. borders. In their analysis of two Indian disaster case studies (from a 2012 flood in Assam and a 2013 cyclone in Odisha), Krishnan and

Twigg (2016) found that women preparing for monsoon flooding made rescue kits with dry rations and essential documents, but menstrual hygiene generally was overlooked. To help address the gendered in disaster impacts and preparation, Enarson (2009) emphasizes the importance of recognizing gender and its role in determining people's access to resources, income needs, and relevance to appropriate care and treatment during emergencies.

Official expectations that preparing provisions for emergencies rests on the shoulders of individuals tend overlook questions about the affordability of menstrual products. During the 2020 COVID-19 pandemic, households began stockpiling goods such as food, toilet paper, and medical supplies. People with adequate resources were able to stockpile goods, but those with lower incomes were left without supplies and menstrual products. In 2000, Dana Marlowe, founder and executive director of the nonprofit organization, I Support the Girls, reported that she received over 600 emails from individuals requesting menstrual product donations because they could not find them in local stores (Goldberg, 2020).<sup>2</sup> Even when store shelves are stocked with menstrual products, low-income households often cannot afford to purchase additional supplies for a possible disaster (Levac *et al.*, 2012). The realities of limited official capacity and amount of individual need can combine to produce a cycle of shortage or omission of menstrual support during emergencies.

Like county emergency managers, the American Red Cross also emphasizes individual preparedness despite socioeconomic limitations. The American Red Cross pushes for preparedness through programs such as "Prepare with Pedro," "The Pillowcase Project," and "Red Cross Ready" (American Red Cross, 2021a, 2021b, 2021c). All of these programs stress individual responsibility in disaster preparedness. This personal responsibility model might not be uniquely American, but it is in contrast to some other countries, including those serviced by branches of the Red Cross. For instance, a study by the Canadian Red Cross found that 53 percent of respondents in Canada indicated that household

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<sup>2</sup> I Support the Girls is a nonprofit organization that helps provide bras, underwear and menstrual products to women and girls experiencing homelessness, impoverishment, and distress (I Support the Girls, 2020).

emergency preparedness should be a government responsibility (Falkiner, 2003).

### ***Emergency Response Organizational Complexity***

If a disaster incident is beyond the capacity of local government to respond, county emergency managers may request assistance after the disaster has been declared by the emergency manager and local county commissioners. These external resources are both a blessing and a curse to emergency managers. The search for assistance can involve the many levels of city, county, state, regional, and national emergency response organization and a plethora of civil and faith-based NGOs ready and waiting to provide emergency relief. A Kansas Division of Emergency Management representative with whom we spoke reported that in the event of a disaster, such as a tornado, a county emergency manager could schedule a call with ESF partners, the KDEM representative, and various volunteer organizations. The emergency manager then would communicate the needs of the population and coordinate resource allocation. Since many counties are not able to satisfy all emergency resource requests, they can reach out to multiple levels of ESF agencies during an emergency or disaster. For example, a northeast county emergency manager specified the local hospital, County Health Department, County Emergency Management Department, and the County Chapter of the American Red Cross as ESF primary agencies under particular ESF annexes of their EOP. This networking might supply a county with MHM supplies if it occurs to the emergency manager to request them, but MHM is not a priority or consideration in most of the counties we surveyed.

Once emergency managers contact the ESF agencies via email or telephone chains, they begin to determine how many agencies are able to help and what resources are available from each source. When we asked if the county's emergency operations plan or supplies included menstrual products, an emergency manager in the southcentral district stated:

Our EOP contains an Emergency Support Function (ESF #6) titled "Mass Care, Emergency Assistance, Housing, and Human Services." This support service is coordinated by the County Health

Department, and if any type of care products were deemed to be needed for the masses, then steps to locate, acquire, and distribute those products would be developed within the Emergency Operations Center.

In this case, if menstrual products were needed (or thought of) the Emergency Operations Center would oversee the designated ESF primary agency (County Health Department) in obtaining and distributing those supplies. Similarly, an emergency manager in the northcentral district reported that they could reach out to ESF and other agencies to acquire menstrual supplies, and reiterated the focus on individual responsibility: “I do try and encourage to my community that it falls on the individual to ensure that they and their families are prepared for a disaster because the government can fail and it does takes 72 hours for the initial assistance to arrive.”

When menstrual products are identified as a needed resource in post-disaster contexts, it is possible to obtain those supplies by networking with ESF agencies. When questioned about communication between emergency managers and the American Red Cross, the American Red Cross representative we spoke with reported:

...the local emergency manager contacts the local American Red Cross representative, and they [the emergency manager] may push up to the state if needed. When a disaster surpasses the capabilities of the local government, the emergency management department may contact the state American Red Cross representative and state emergency operations center.

This complex chain of command reveals obstacles facing county emergency managers who rely on ESF agencies for supplies they don’t have in storage, including menstrual supplies. It is a time-consuming process that does not offer quick relief to people who are menstruating in a disaster. The U.S. Food and Drug Administration recommends that tampons should be changed every 4 to 8 hours, and to never wear a single tampon for more than 8 hours at a time in

order to practice safe menstrual health (U.S. Food and Drug Administration, 2018). A menstruating individual cannot wait up to 72 hours for menstrual supplies to be distributed. This puts menstruators at a higher risk of discomfort and negative health outcomes. Limited access to safe menstrual hygiene materials and common social taboos make managing menstruation a greater challenge during disasters and can lead menstruating individuals to experience additional stress beyond that imposed by the emergency situation.

### ***Failure to Recognize MHM as an Important Planning Need***

Some emergency managers expressed surprise at our questions about the inclusion of MHM in their emergency plan or stockpiled supplies. It seemed clear that this simply was not something they had considered. When asked how they might meet MHM needs, they reported that they would coordinate the needs of the civilians with multiple ESF partners, including the American Red Cross, the county health department, and local faith-based groups. An American Red Cross representative with whom we spoke explained, “the American Red Cross will work with the emergency manager in terms of mass care as needed.” The representative noted that menstrual supplies may not be distributed by the American Red Cross; rather, they would work with their own partners and the local community to obtain supplies for emergencies if they are not available in the shelter, from other American Red Cross chapters, or in the supply warehouse. When asked if the American Red Cross had ever provided menstrual supplies in Kansas emergency events, the representative speculated, “In sheltering situations there may be some (menstrual hygiene supplies) available, these places are often community buildings that may have some available already.” County Emergency Managers’ reliance on ESF partners presumed that those organizations include menstruation in their plans and supply stockpiles, an assumption that is not supported in Khandakji’s (2018) research on the lack of MHM planning by the American Red Cross and FEMA.

The stigma associated with menstruation exacerbates the omission of MHM supplies in preparations. MHM is not a common topic of conversation and is widely seen as private and inappropriate for public discussion. Our limited interviews did not reveal

embarrassment or reluctance to speak about what might be considered a personal or sensitive matter, but unless emergency response agencies are specifically tasked with addressing MHM needs, it is reasonable to expect that they will not.

### ***Limitations of this Research***

The results of this survey should be regarded with caution for three reasons: Kansas is a very rural state, responses to our survey were limited, and we had only a few interviews. Only 6 out of 105 Kansas counties have populations over 80,000, and two-thirds of counties (70 out of 105) are considered “frontier” or “rural” with population densities per square mile of less than 20 (U.S. Census, 2020; Institute for Policy and Social Research, 2018). This rurality limits the validity of generalizing our findings to other states. The response rate to our questionnaire was only 25.7 percent; a majority (67.6 percent) of emergency managers invited to the survey chose not to respond at all; some counties (2.8 percent) had vacant emergency manager positions while others (3.8 percent) could not be reached because of an undeliverable email address. The low response creates potential for non-response bias because there may be systematic differences between respondents and non-respondents such as the availability of resources in the county (Nishimura *et al.*, 2016). Thus, the responses collected may not provide a completely accurate assessment of the inclusion of menstrual needs in county emergency management. Another potential limitation is that only 3 phone interviews were conducted with county emergency managers, and only two other interviews were conducted with representatives from the state and the American Red Cross. The COVID-19 pandemic occurred as this study was in development, which limited emergency managers’ and other organizations involved in disaster response ability to participate in this study.

### **Conclusion**

In disasters, fundamental human rights such as shelter, food, clean water and medicines are prioritized, but safe menstrual hygiene management needs, a basic reproductive health right, often are overlooked (Sommer 2012; Travers, 2015; World Vision, 2019). There is a global movement underway to better address menstrual needs generally and in disaster-related contexts. Movements for

period parity and opposition to pink taxes reflect a growing consensus that MHM-related needs are not being met in the U.S. or around the world.

The aim of this study was to gauge into the extent to which MHM is on the agenda of local emergency managers and gain insight into some of the reasons why it is not. We found that several factors contributed to the lack of MHM in Kansas county emergency planning: limited resources, reliance on individual responsibility, emergency response organizational complexity, lack of recognition. Our findings are consistent with others' research on the invisibility of MHM in many arenas, including in disaster management.

This study emphasizes the importance of menstrual hygiene - especially in disasters when vulnerability to injury, domestic violence, and other health risks are intensified. Ensuring access to menstrual supplies during emergencies to preserve reproductive health and dignity is a fundamental right that needs to be recognized at local, national, and international levels.<sup>3</sup> Recognizing MHM as a basic right is especially pressing in light of the expected increased intensity and frequency of disasters as the climate continues to change.

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<sup>3</sup> Sullivan and Nagel (2020) offer several recommendations for emergency planners who wish to include MHM in their disaster planning and supplies: make girls and women's menstrual needs visible, straightforward, and matter-of-fact by including MHM in emergency plans and supplies; include menstrual products and "period packs" in emergency relief kits; stockpile menstrual products in advance; ensure toileting facilities have bins with lids to properly dispose of pads and tampons, as well as running water to wash reusable hygiene products and underwear; equip toileting facilities with proper doors, locks, and lighting for women's privacy and safety; include people who menstruate in emergency policymaking, planning, and response.

## References

- ActionAid. 2021. “Periods in Humanitarian Disasters.” Retrieved January 16, 2021 (<https://www.actionaid.org.uk/about-us/what-we-do/emergencies-disasters-humanitarian-response/periods-in-humanitarian-disasters#:~:text=They%20can%20lead%20to%20dangerous,a nd%20isolated%20during%20their%20period>).
- American Heart Association. 2019. “Summer Heat Brings Special Health Risks for Pregnant Women.” Retrieved January 16, 2021 (<https://www.heart.org/en/news/2019/07/01/summer-heat-brings-special-health-risks-for-pregnant-women>).
- American Medical Women’s Association (AMWA). 2019. “Period Poverty.” Retrieved January 17, 2021 (<https://www.amwadoc.org/period-poverty/>).
- American Red Cross. 2021a. “Prepare with Pedro!” Retrieved January 21, 2021 (<https://www.redcross.org/get-help/how-to-prepare-for-emergencies/teaching-kids-about-emergency-preparedness/prepare-with-pedro.html>).
- American Red Cross. 2021b. “The Pillowcase Project.” Retrieved January 21, 2021 (<https://www.redcross.org/get-help/how-to-prepare-for-emergencies/teaching-kids-about-emergency-preparedness/pillowcase-project.html>).
- American Red Cross. 2021c. “Be ‘Red Cross Ready’ – It’s Easy as 1-2-3.” Retrieved January 21, 2021 (<https://www.redcross.org/about-us/news-and-events/news/Prepare-Now-to-Be-Safe-During-an-Emergency.html>).
- Benshaul-Tolonen, Anja, Garazi Zulaika, Marni Sommer, and Penelope A. Phillips-Howard. 2020. “Measuring Menstruated-Related Absenteeism among Adolescents in Low-Income Countries.” Pp. 705-733 in *Palgrave Handbook of Critical Menstruation Studies*, eds. C. Bobel, I. Winkler, B. Fahs, K. Hasson, E. Kissling, T. Roberts. Singapore: Palgrave Macmillan.
- Bobel, Chris. 2018. *The Managed Body: Developing Girls and Menstrual Health in the Global South*. London: Palgrave Macmillan.

- Budhathoki, Shyam Sundar, Meika Bhattachan, Enrique Castro-Sánchez, Reshu Agrawal Segtani, Rajan Bikram Rayamajhi, Pramila Rai, and Gaurav Sharma. 2018. "Menstrual Hygiene Management among Women and Adolescent Girls in the Aftermath of the Earthquake in Nepal." *BMC Women's Health* 18(1):1-8.
- Caruson, Kiki, and Susan A. MacManus. 2008. "Disaster Vulnerabilities: How Strong a Push Toward Regionalism and Intergovernmental Cooperation?" *American Review of Public Administration* 38(3):286-306.
- Chrisler, Joan C., and Karen B. Levy. 1990. "The Media Construct a Menstrual Monster: A Content Analysis of PMS Articles in the Popular Press." *Women's Health* 15(2):89-104.
- Clinton, Hillary. 1995. Remarks for the United Nations Fourth World Conference on Women. Retrieved on January 17, 2021 (<https://www.un.org/esa/gopher-data/conf/fwcw/conf/gov/950905175653.txt>).
- Critikos, Michelle, Keith Eastwood, Craig Dalton, Tony Merritt, Frank Tuyl, Linda Winn, and David Durrheim. 2008. "Household Disaster Preparedness and Information Sources: Rapid Cluster Survey after a Storm in New South Wales, Australia." *BMC Public Health* 8(195). Retrieved on January 20, 2021 (<https://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-8-195>).
- de Albuquerque, Catarina. 2013. "Report of the Special Rapporteur on the Human Right to Safe Drinking Water and Sanitation." *UN Doc. A/HRC/24/44* (July 11). Retrieved on January 20, 2021 ([https://reliefweb.int/sites/reliefweb.int/files/resources/A-HRC-24-44\\_en.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/A-HRC-24-44_en.pdf)).
- ELRHA. 2021. "Improving Menstrual Hygiene Management in Emergencies." Retrieved January 19, 2021 (<https://www.elrha.org/project/improving-menstrual-hygiene-management-emergencies/>).
- Enarson, Elaine. 2009. *Women, Gender and Disaster: Global Issues and Initiatives*. New Delhi: Sage Publications.
- Eriksen, Christine. 2014. *Gender and Wildfire: Landscapes of Uncertainty*. New York: Routledge.

- Falkiner, Leanna. 2003. Impact Analysis of the Canadian Red Cross Expect the Unexpected Program.
- FEMA. 2013. “Personal Preparedness in America: Findings from the 2012 FEMA National Survey.” Retrieved January 19, 2021 ([https://www.ready.gov/sites/default/files/2020-08/2012\\_FEMA\\_National\\_Survey\\_Report.pdf](https://www.ready.gov/sites/default/files/2020-08/2012_FEMA_National_Survey_Report.pdf)).
- FEMA. 2019. “Hazard Mitigation Plan Requirement.” Retrieved on January 19, 2021 (<https://www.fema.gov/hazard-mitigation-plan-requirement>).
- FEMA. 2021a. “Emergency Supply List.” Retrieved January 19, 2021 ([https://www.ready.gov/sites/default/files/2020-03/ready\\_emergency-supply-kit-checklist.pdf](https://www.ready.gov/sites/default/files/2020-03/ready_emergency-supply-kit-checklist.pdf)).
- FEMA. 2021b. “History of FEMA.” Retrieved January 17, 2021 (<https://www.fema.gov/about/history>).
- Fothergill, Alice, and Lori Peek. 2015. *Children of Katrina*. Austin: University of Texas Press.
- Frank, Sarah E. 2020. “Queering Menstruation: Trans and Non-Binary Identity and Body Politics.” *Sociological Inquiry* 90(2):371-404.
- Goldberg, Emma. 2020. “Periods Don’t Stop for Pandemics, So She Brings Pads to Women in Need.” *The New York Times*, April 5. Retrieved January 19, 2021 (<https://www.nytimes.com/2020/04/05/us/02IHW-virus-tampons-pads-periods-product-shortages.html>).
- Gottlieb, Alma. 2020. “Menstrual Taboos: Moving beyond the Curse.” Pp. 143-162 in *Palgrave Handbook of Critical Menstruation Studies*, eds. C. Bobel, I. Winkler, B. Fahs, K. Hasson, E. Kissling, T. Roberts. Singapore: Palgrave Macmillan.
- Gross, Elana Lyn. 2020. “Scotland will be the First Country to Make Period Products Free.” *Forbes*, November 24. Retrieved January 17, 2021 at (<https://www.forbes.com/sites/elanagross/2020/11/24/scotland-will-be-the-first-country-to-make-period-products-free/?sh=921c90c55774>).

- Hafner-Burton, Emilie, and Mark A. Pollack. 2002. “Mainstreaming Gender in Global Governance.” *European Journal of International Relations* 8(3):339-373.
- Human Rights Watch. 2017. “Menstrual Hygiene a Human Rights Issue.” Retrieved on January 17, 2021 at (<https://www.hrw.org/news/2017/08/27/menstrual-hygiene-human-rights-issue>).
- I Support the Girls. 2020. “Who We Are.” Retrieved January 21, 2021 (<https://isupportthegirls.org/about-support-the-girls/who-we-are/>).
- Institute for Policy and Social Research. 2019. “Population Density Classifications in Kansas, by County, 2018.” *The University of Kansas*. Retrieved January 19, 2021 (<http://www.ipsr.ku.edu/ksdata/ksah/population/popden2.pdf>).
- International Center for Research on Women (ICRW). 2016. “Toward a More Feminist United Nations” (September). Retrieved January 17, 2021 ([https://www.icrw.org/wp-content/uploads/2016/12/ICRW\\_FemUNRecommendations\\_WebReady\\_v5.pdf](https://www.icrw.org/wp-content/uploads/2016/12/ICRW_FemUNRecommendations_WebReady_v5.pdf)).
- Intergovernmental Panel on Climate Change (IPCC). 2018. “Global Warming of 1.5°C.” *An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*. Edited by V. Masson-Delmotte, P. Zhai, H. O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, T. Waterfield. Retrieved January 16, 2021 (<https://www.ipcc.ch/sr15/>).
- Jensen, Jessica, Sarah Bundy, Brian Thomas, and Mariama Yakubu. 2014. “The County Emergency Manager’s Role in Recovery.” *International Journal of Mass Emergencies and Disasters* 32(1):157-193.
- Johnston-Robledo, Ingrid., and Joan C. Chrisler. 2013. “The Menstrual Mark: Menstruation as Social Stigma.” *Sex Roles*

- 68(1–2):9–18. DOI: <https://doi-org. www2.lib.ku.edu/10.1007/s11199-011-0052-z>
- Kaltsatou, Antonia, Glen P. Kenny, Andreas D. Flouris. 2018. “The Impact of Heat Waves on Mortality among the Elderly.” *Journal of Geriatric Medicine and Gerontology* 4(53). Retrieved January 16, 2021 (<https://clinmedjournals.org/articles/jgmg/journal-of-geriatric-medicine-and-gerontology-jgmg-4-053.php?jid=jgmg#:~:text=A%20number%20of%20studies%20are,body%20core%20temperature%20%5B28%5D>).
- Kansas Adjutant General. 2014. “Kansas Planning Standards.” Retrieved January 19, 2021 ([https://kansastag.gov/AdvHTML\\_doc\\_upload/Kansas%20Planning%20Standards.pdf](https://kansastag.gov/AdvHTML_doc_upload/Kansas%20Planning%20Standards.pdf)).
- Kansas Adjutant General 2017. “Disaster Response Role.” Retrieved on January 21, 2021 (<https://www.kdads.ks.gov/about-kdads/disaster-response#:~:text=The%20Kansas%20emergency%20operation%20plan,affect%20the%20State%20of%20Kansas>).
- Kansas County Clerks and Election Officials Association. 2020. “Kansas County Clerks and Election Officials.” Retrieved January 19, 2021 (<http://www.kcceoa.org/county-clerks>).
- Kapucu, Naim. 2008. “Culture of Preparedness: Household Disaster Preparedness.” *Disaster Prevention and Management* 17(4):526–535.
- Khandakji, Samantha. 2018. “Out of Sight: Menstrual Hygiene and American Disasters. *Maternal and Reproductive Health* (April 2). Retrieved January 16, 2021 at (<https://www.publichealth.columbia.edu/public-health-now/news/out-sight-menstrual-hygiene-and-american-disasters>).
- King, Sally. 2020. “Premenstrual Syndrome (PMS) and the Myth of the Irrational Female. Pp. 289–302 in *Palgrave Handbook of Critical Menstruation Studies*, eds. C. Bobel, I. Winkler, B. Fahs, K. Hasson, E. Kissling, T. Roberts. Singapore: Palgrave Macmillan.
- Kissling, Elizabeth Arveda. 2006. *Capitalizing on the Curse: The Business of Menstruation*. Boulder, CO: Rienner.

- Krishnan, Sneha, and John Twigg. 2016. “Menstrual Hygiene: A ‘Silent’ Need during Disaster Recovery.” *Waterlines* 35(3):265-276. Retrieved January 19, 2021 ([www.jstor.org/stable/26600765](http://www.jstor.org/stable/26600765)).
- Kowalski, Robin, and Tracey Chapple. 2000. “The Social Stigma of Menstruation: Fact or fiction?” *Psychology of Women Quarterly* 24(1):74-80.
- Levac, Joëlle, Darene Toal-Sullivan, and Tracey L. O’Sullivan 2012. “Household Emergency Preparedness: A Literature Review.” *Journal of Community Health* 37:725-733.
- Mayo Clinic. 2020. “Toxic Shock Syndrome. Retrieved January 19, 2021 (<https://www.mayoclinic.org/diseases-conditions/toxic-shock-syndrome/symptoms-causes/syc-20355384>).
- Magistretti, Bérénice. 2019. “FemBeat: Period Poverty is a Thing, Even in the U.S.” *Forbes*, January 25. Retrieved January 21, 2021 (<https://www.forbes.com/sites/berenicemagistretti/2019/01/25/fembeat-period-poverty-is-a-thing-even-in-the-us/?sh=57993945569e>).
- Miller, Tori. 2019. “Moving Past the Stigma? The Narrative of Menstruation in WASH and MHM Organizations.” Master’s Thesis, Columbia University. Retrieved January 17, 2021 (file:///C:/Users/nagel/Downloads/ToriMiller\_Thesis.pdf).
- Morales, Christina. 2021. “U.K. Eliminates Tax on Tampons and Other Sanitary Products.” *The New York Times*, January 1. Retrieved January 17, 2021 at (<https://www.nytimes.com/2021/01/01/world/europe/tampon-tax-uk.html>).
- Neumayer, Eric, and Thomas Plümper. 2007. “The Gendered Nature of Natural Disasters: The Impact of Catastrophic Events on the Gender Gap in Life Expectancy, 1981 – 2002.” *Annals of the Association of American Geographers* 97(3):551-566.
- Nishimura, Raphael, James Wagner, and Michael Elliott. 2016. “Alternative Indicators for the Risk of Non-Response Bias: A Simulation Study.” *International Statistical Review* 84(1):43–62. DOI: <https://doi-org-www2.lib.ku.edu/10.1111/insr.12100>

- Oregon Natural Hazards Workgroup. 2007. "Household Natural Hazards Preparedness Survey." *University of Oregon's Community Service Center*. Retrieved January 19, 2021 ([https://www.bakercounty.org/emergency/neor\\_mitigation\\_plan/vol3/appendix\\_e/appendix\\_e\\_survey.pdf](https://www.bakercounty.org/emergency/neor_mitigation_plan/vol3/appendix_e/appendix_e_survey.pdf)).
- Perianes, Milena B., and Tomi-Ann Roberts. 2020. "Transnational Engagements: From Debasement, Disability, and Disaster to Dignity—Stories of Menstruation Under Challenging Conditions." Pp. 337-345 in *Palgrave Handbook of Critical Menstruation Studies*, eds. C. Bobel, I. Winkler, B. Fahs, K. Hasson, E. Kissling, T. Roberts. Singapore: Palgrave Macmillan.
- PERIOD. 2019. "The Menstrual Movement." Retrieved January 19, 2021 (<https://www.period.org/>).
- Richter, Roxane, and Thomas Flowers. 2008. "Gendered Dimensions of Disaster Care: Critical Distinctions in Female Psychosocial Needs, Triage, Pain Assessment, and Care." *American Journal of Disaster Medicine* 3(1):31–37.
- Richter, Roxane and Thomas Flowers. 2010. "Gender-Aware Disaster Care: Issues and Interventions in Supplies, Services, Triage and Treatment." *International Journal of Mass Emergencies and Disasters* 28(2):207-225.
- Sommer, Marni. 2012. "Menstrual Hygiene Management in Humanitarian Emergencies: Gaps and Recommendations." *Waterlines* 31(1-2):83-104. Retrieved January 19, 2021 ([www.jstor.org/stable/24686762](http://www.jstor.org/stable/24686762)).
- Sommer, Marni. 2018. "Why a Monthly Period is Especially Hard for Millions of Women and Girls around the World." *The Conversation*, May 27. Retrieved January 16, 2021 (<https://theconversation.com/why-a-monthly-period-is-especially-hard-for-millions-of-women-and-girls-around-the-world-78235>).
- Sommer, Marni, Jennifer S. Hirsch, Constance Nathanson, Richard G. Parker. 2015. "Comfortably, Safely, and without Shame: Defining Menstrual Hygiene Management as a Public Health Issue." *American Journal of Public Health* 105(7):1302-1311.
- Stein, Elissa, and Susan Kim. 2009. *Flow: The Cultural Story of Menstruation*. New York: St. Martin's Press.

- Sullivan, Darcy, and Joane Nagel. 2020. “Code Red: Addressing Menstrual Needs During Emergencies.” Natural Hazards Center, Research Counts (September 23). Retrieved January 19, 2021 (<https://hazards.colorado.edu/news/research-counts/code-red-addressing-menstrual-needs-during-emergencies>).
- Tellier, Siri, and Maria Hyttel. 2018. “Menstrual Health Management in East and Southern Africa: A Review Paper. Johannesburg: United Nations Population Fund.” Retrieved January 16, 2021 ([https://esaro.unfpa.org/en/publications/menstrual-health-management-east-and-southern-africa-review-paper?\\_ga=2.82549397.2055371909.1610842521-1984810746.1610842521](https://esaro.unfpa.org/en/publications/menstrual-health-management-east-and-southern-africa-review-paper?_ga=2.82549397.2055371909.1610842521-1984810746.1610842521)).
- Tod, Izzy. 2020. “100 Years of Sexism in the United Nations.” *Cherwell* (January 13). Retrieved January 17, 2021 (<https://cherwell.org/2020/01/13/100-years-of-sexism-in-the-united-nations/>).
- Travers, Claire Louise. 2015. “No One Cares We’re Bleeding: The Place of Menstrual Management in Humanitarian Response.” Master’s Thesis, Uppsala University. Retrieved January 21, 2021 (<https://pdfs.semanticscholar.org/cfe9/720925a020ac86b2ffb06eb401589e6951ad.pdf>).
- UNICEF. 2021. Water, Sanitation and Hygiene (WASH) Programme. Retrieved January 16 2021 ([www.unicef.org/wash](http://www.unicef.org/wash)).
- United Nations. 1948. “Universal Declaration of Human Rights.” Retrieved January 17, 2021 (<https://www.un.org/en/universal-declaration-human-rights/>).
- United Nations. 2001. “Supporting Gender Mainstreaming.” Retrieved January 17, 2021 (<https://www.un.org/womenwatch/osagi/pdf/report.pdf>).
- United Nations. 2021a. “Gender Equality.” Retrieved January 17, 2021 (<https://www.un.org/en/sections/issues-depth/gender-equality/>).
- United Nations. 2021b. “UN Women.” Retrieved January 18, 2021 (<https://www.unwomen.org/en>).

- United Nations Population Fund. 2019. “Menstruation is Not a Girls’ or Women’s Issue – It’s a Human Rights Issue.” Retrieved January 17, 2021 (<https://www.unfpa.org/news/menstruation-not-girls-or-womens-issue-%E2%80%93-its-human-rights-issue>).
- University of Florida Health. 2018. “Menstrual products now available at SHCC!” Retrieved January 19, 2021 (<https://shcc.ufl.edu/2018/01/25/menstrual-products-now-available-at-shcc/>).
- Upadhye, Janet. 2016. “This is How Homeless Women Cope with Their Periods.” *Bustle*, October 18. Retrieved January 21, 2021 (<https://www.bustle.com/articles/190092-this-is-how-homeless-women-cope-with-their-periods>).
- U.S. Census Bureau. 2020. B01001 SEX BY AGE, 2019 American Community Survey 5-Year Estimates. Retrieved January 20, 2021 ([https://www.kansas-demographics.com/counties\\_by\\_population](https://www.kansas-demographics.com/counties_by_population)).
- U.S. Environmental Protection Agency. 2016. “What Climate Change Means for Kansas.” Retrieved January 19, 2021 ([https://www.kansasforests.org/resources/resources\\_docs/climate-change-ks%202016.pdf](https://www.kansasforests.org/resources/resources_docs/climate-change-ks%202016.pdf)).
- U.S. Food and Drug Administration. 2018. “The Facts on Tampons – and How to Use Them Safely.” Retrieved January 19, 2021 (<https://www.fda.gov/consumers/consumer-updates/facts-tampons-and-how-use-them-safely>).
- U.S. Global Change Research Program. 2018. Fourth National Climate Assessment. Chapter 1: Overview. Retrieved January 16, 2021 (<https://nca2018.globalchange.gov/chapter/1/>).
- VanLeeuwen, Crystal, and Belen Torondel. 2018. “Improving Menstrual Hygiene Management in Emergency Contexts: Literature Review of Current Perspectives.” *International Journal of Women’s Health* 10(April):169-186.
- WASH United. 2017. “Understanding Menstrual Hygiene Management and Human Rights.” Retrieved January 17, 2021 ([https://reliefweb.int/sites/reliefweb.int/files/resources/mhm\\_pr\\_actioner\\_guide\\_web.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/mhm_pr_actioner_guide_web.pdf)).
- Weiss-Wolf, Jennifer. 2017. *Periods Gone Public: Taking a Stand for Menstrual Equity*. New York: The Brennan Center.

- WHO/UNICEF. 2012. Consultation on Draft Long List of Goal, Target and Indicator Options for Future Global Monitoring of Water, Sanitation and Hygiene, p. 16. Retrieved January 16, 2021  
<https://washdata.org/sites/default/files/documents/reports/2017-06/JMP-2012-post2015-consultation.pdf>.
- Winkler, Inga T., and Virginia Roaf. 2014. “Taking the Bloody Linen Out of the Closet: Menstrual Hygiene as a Priority for Achieving Gender Equality.” *Cardozo Journal of Law and Gender* 21(1):1-37.
- World Health Organization. 2021. “Sexual Reproductive Health and Rights in Emergencies.” Retrieved January 21, 2021  
<https://www.who.int/health-cluster/about/work/other-collaborations/sexual-reproductive-health-rights/en>).
- World Vision. 2019. “Menstrual Hygiene Rights are Human Rights. Period.” Retrieved January 18, 2021  
<https://www.wvi.org/blogpost/menstrual-hygiene-rights-are-human-rights-period>.
- Zehtabchi, Rayka. 2018. *Period. End of Sentence*. Netflix Productions.
- Zhen, Sharon. 2016. “Student Wellness Commission Begins Providing Free Menstrual Products.” *Daily Bruin*, November 22. Retrieved January 19, 2021  
<https://dailybruin.com/2016/11/22/student-wellness-commission-begins-providing-free-menstrual-products/>).
- Zivi, Karen. 2020. “Hiding in Public or Going with the Flow: Human Rights, Human Dignity, and the Movement for Menstrual Equity.” *Human Rights Quarterly* 42(1):119-144.
- Zraick, Karen. 2019. “22 States Considered Eliminating the ‘Tampon Tax’ this Year. Here’s What Happened.” *New York Times*, July 12. Retrieved January 17, 2021  
<https://www.nytimes.com/2019/07/12/us/tampon-tax.html>.