**Disrupting Gender Norms in Health Systems: Making the Case for Change**

**Authors**

Katherine Hay, MA1; Lotus McDougal, PhD2; Valerie Percival, DrPH3; Sarah Henry, MPH4; Jeni Klugman, PhD5; Haja Wurie, PhD6; Joanna Raven, PhD7; Fortunate Shabalala, PhD8; Rebecca Fielding-Miller, PhD2, Arnab Dey, MBA8, Nabamallika Dehingia, MBA2, Rosemary Morgan, PhD10; Yamini Atmavilas, PhD1; Niranjan Saggurti, PhD11; Jennifer Yore, MPH2; Elena Blokhina, MD12, Rumana Huque, PhD13; Edwine Barasa, PhD14; Nandita Bhan, ScD2; Chandani Kharel, MD, PhD15; Professor Jay G. Silverman, PhD2, and Professor Anita Raj, PhD2 for the Gender Equality, Norms and Health Steering Committee\*.

1 Bill & Melinda Gates Foundation

 500 5th Avenue North

Seattle, WA 98119 USA

2 University of California San Diego, School of Medicine

Center on Gender Equity and Health, Department of Medicine

9500 Gilman Drive, La Jolla, CA 92093

La Jolla, CA, USA

3 Carleton University

Norman Paterson School of International Affairs,

5319 Richcraft Hall

1125 Colonel By Drive, Ottawa, ON, K1S 5B6 Canada

4 Stanford University

Department of Pediatrics, Stanford University School of Medicine
1265 Welch Road, Stanford, CA 94305 USA

5 Georgetown University, Georgetown Institute for Women, Peace and Security

1412 36th street, N.W., Washington D.C. 20057 USA;

Harvard Kennedy School, Women and Public Policy Program

79 JFK Street Cambridge, MA 02138 USA

6 College of Medicine and Allied Health Sciences

University Of Sierra Leone Private Mail Bag

Freetown Sierra Leone

7 Liverpool School of Tropical Medicine

Pembroke Place, Liverpool L3 5QA

UK

8 University of Eswatini

Faculty of Health Sciences P. O. Box 369

Mbabane. H100.

 Eswatini

9 Sambodhi Research & Communications Pvt. Ltd.

C-126, Sector-2 Noida, Uttar Pradesh, India

10 Johns Hopkins Bloomberg School of Public Health

Department of International Health

615 N Wolfe Street

Baltimore Maryland, 21205 USA

11 Population Council

Zone 5A, Ground Flr,

India Habitat Centre, Near Airforce School, Lodhi Road,

New Delhi, Delhi 110003

12 Vladman Institute of Pharmacology, Department of Psychiatry,

First Pavlov State Medical University of St. Petersburg,

[Lev Tolstoy str. 6/8, Saint Petersburg 197022](https://www.bing.com/maps?&ty=18&q=First%20Pavlov%20State%20Medical%20University%20of%20St.%20Petersburg&satid=id.sid%3aed84f67c-77e6-2e3c-4e5a-e7f3810cf0da&ppois=59.9667015075684_30.3166999816895_First%20Pavlov%20State%20Medical%20University%20of%20St.%20Petersburg_~&cp=59.966702~30.3167&v=2&sV=1)

13 The ARK Foundation, Bangladesh

Suite C-3, C-4, House # 06, Road # 109, Gulshan-2

Dhaka, Bangladesh 1212

14 Kemri-Wellcome Trust, Kenya
Research Programme
P.O Box 43640 – 00100,
197 Lenana Place, Off Lenana Road
next to Cedars Restaurant
Nairobi, Kenya

15 HERD International

Prasuti Griha Marg, Thapathali

Kathmandu 44600, Nepal

**Corresponding Author:** Professor Anita Raj, PhD2

Email address: anitaraj@ucsd.edu

Abstract Word Count: 284

Text Word Count: 4959

Number of References: 193

Number of Tables: 1

Number of Figures: 4

Web Appendices

Running Head: Gender Norms in Health Systems

Key Words: Gender Equality, Health Systems, Gender Norms, Health Workers, Feminist Theory

**AbSTRACT**

Restrictive gender norms and gender inequalities are replicated and reinforced in health systems, contributing to gender inequalities in health. We explore how to address all three, first through recognition, and then with disruptive solutions. We used intersectional feminist theory to guide our systematic reviews, qualitative case based on lived experiences, and quantitative analyses based on cross-sectional and evaluation research. We found that: systems of healthcare delivery reinforce patients’ traditional gender roles and neglect gender inequalities in health; health system models and clinic-based programmes are rarely gender responsive; and women have less authority as health workers, relative to men, and are often devalued and abused. In looking at the potential for disruption, we found that gender equality policies are associated with higher representation of women physicians, and higher representation of women physicians is associated with better health outcomes, but that gender parity is not sufficient to achieve gender equality. We found indications that institutional support and respect of nurses improves quality of care, and that women’s empowerment collectives can increase health care access and provider responsiveness. We see promise from social movements in supporting women’s reproductive rights and policies. Combined, our findings suggest we must go beyond seeing gender as code for ‘women and girls,’ and as an ‘add on’, but rather, as a fundamental factor that predetermines and shapes health systems and outcomes. Without intentionally addressing the role of restrictive gender norms and gender inequalities both within and outside of the health system, we will not reach our collective ambitions of Universal Health Coverage, and the Sustainable Development Goals more broadly. We propose action to systematically identify and address restrictive gender norms and gender inequalities in health systems.

**Key messages:**

1. Health systems reflect and reinforce the gender biases and restrictive gender norms in society, and these biases and norms undermine the functioning of health systems and compromise the safety and well-being of providers and the health of communities.
2. Gender and social inequalities (based on class, race/ethnicity, etc.) intersect and multiply these negative impacts, on both the health system and the communities they serve.
3. Health systems can be disrupted (e.g. from within, through social and economic policies, via community accountability mechanisms) to shift gender norms and reduce inequalities.
4. Gender transformative approaches can help address gender inequalities in health and health systems.
5. Those working to change health systems should align and ally with social movements, community activism and collective efforts for change and accountability.

**Introduction**

Health systems are necessary for effective and efficient health care delivery. Their strength is fundamental to achieving Universal Health Coverage (UHC), a target of the Sustainable Development Goals (SDGs) shared by 193 nations.2 Unfortunately, gender inequalities and biases rooted in restrictive gender norms, described in previous papers from this series,1-3 are also reflected in health systems. [See Heise et al.1 for definitions of social and gender inequalities.] Left unaddressed, gender inequalities can weaken or even incapacitate a health system’s functioning, as seen for example in Taliban-affected Afghanistan of the 1990s, where women health providers were denied the right to practice, compromising health care access and quality reported in immediate post-Taliban rule.4 Other examples may be less extreme, but twenty years of cross-national research from high-income countries (HICs) and low- and middle-income countries (LMICs) demonstrates that gender inequalities are embedded in our health systems,5-7 are rarely addressed,5-8 and impede our capacity to achieve UHC.1

In this paper we examine how to address restrictive norms and inequalities in health systems, first through recognition and then with disruptive solutions. We used intersectional feminist theory to guide our approach,9,10 reviewing the literature and conducting new empirical analyses to answer the following research questions:

1. How do restrictive gender norms and gender inequalities manifest in health systems?
2. How can we disrupt health systems in ways that address, reduce, or prevent gender inequalities, and the underlying restrictive gender norms that maintain them?

Findings from this work offer insights into how health systems leadership, policy makers, and community activists can work together to create a more equitable and accountable health systems.

**How do gender norms and inequalities manifest in health systems?**

To understand the implications of restrictive gender norms and inequalities in health systems, we consider both gender inequalities in the health system, and the health system’s response to them. As seen in Figure 1a, health systems are comprised of components (e.g., clinical facilities, financing, governance, workforce) to support health for populations at scale.11 Interactions within and between the health system and community, are influenced by restrictive gender norms and inequalities (e.g., power, trust), affecting the strength, efficiency and impact of health system components and the system as a whole.12 Restrictive gender norms and inequalities endemic in society [i.e., the larger social and policy environment in which the system exists], are mirrored, reinforced and perpetuated in health systems, harming the system, and compromising the health of communities [i.e., the more proximal environment directly served by the system].

**Theory**

Our analysis is built on intersectional feminist theory, which posits that multiple social identities and experiences of social marginalization (i.e., subordination and exclusion based on social characteristics such as gender, race/ethnicity, class/caste, social position etc.), intersect to create compounded privilege or marginalization for individuals.10 Put more simply, power and hierarchy manifests in health systems in ways that make some people more likely to gain benefit, be supported, and advanced – while others are more likely to be marginalised or disempowered. Hence we consider not just gender inequalities but also social inequalities, and their intersection, including inequalities based on social positioning in health systems, which commonly value physicians, for example over nurses, and medical structures over community. Gender and health system hierarchies, in conjunction with other hierarchies attached to social characteristics, maintain power structures that advantage some at the cost of others, reinforcing social and gender inequalities within health systems and health outcomes.9,10

Intersectional feminist theory points to the overlapping and intersecting nature of inequalities in health systems and highlights the need for accountability to eliminate these inequalities.10 We also draw upon feminist standpoint theory, which posits that perspectives are shaped by intersecting identities, and social and political experiences, that are multi-faceted rather than universal. Here, objectivity, or ‘strong objectivity’ as Sandra Harding called it,13 entails including diverse perspectives, including those well-positioned to recognise and question inequalities and marginalization. We built our research team with this theoretical underpinning in mind, and focused on research questions that emphasise hierarchies and marginalization both within the health system and respectful and high quality health care delivery.

**Methods**

We conducted critical reviews of the literature to guide our understanding of how restrictive gender norms and gender inequalities manifest in health systems. Given the enormity of the literature and the contextual nature of health systems, we based reviews on input from a working group of 22 multi-disciplinary experts on gender and health from across four continents. These included nurse and physician researchers, social scientists with qualitative and quantitative research expertise, as well as health systems experts, to guide our conceptualisation and analysis. Experts guided priority areas of focus for review - gender inequalities in health and gender inequalities in the health care workforce, and helped identify key papers reflective of cases from diverse regions of the world.

Recognising the importance of the lived experiences of female health care workers, experiences of gender inequalities, professional opportunities and the role of policy in affecting such opportunities, we also included two qualitative studies. Case 1 is on the life course of an HIV nurse in Kingdom of Eswatini, based on the aggregated stories taken from qualitative and demographic data from that context. Case 2 is a policy analysis using qualitative data from community health workers (CHWs) and their managers, following a policy to ensure better support and remuneration for CHWs in Sierra Leone. [See Table 1 for detailed methods.]

**Findings**

**1a. How do health systems affect gender inequalities in health?**

Systems of healthcare delivery (i.e., health services) reinforce restrictive gender roles for both providers and patients and neglect gender inequalities in health. Health services prioritise care in ways consistent with traditional norms, which results in poor care for women, men and gender minorities.14 Examples include valuing women based on their reproductive capacity and care-provision for children, viewing men as strong and thus not in need of care, and defining both as heterosexual and cisgender (i.e., where biological sex at birth matches gender).14 For example, women are at greater risk than men for depression/anxiety,15-17 cancer,18 and health burdens due to aging,19,20 but health systems show little response to these differences, and in some contexts show worse care than for men.21 In contexts such as India, with a glaring sex ratio imbalance22 attributed in part to lower health care seeking for girl relative to boy children,23,24 there is little indication that health services are addressing these biases.24

Men’s health receives even less focus, even though men have higher health risks and lower life expectancy relative to women,15,16,25-31 and restrictive gender norms related to masculinity have been linked to behavioural risks (e.g., substance use, suicide, injury) and delayed health seeking.25,32,33 Further, there is evidence that providers differentially respond to men seeking care, assuming lower compliance for male relative to female patients.34,35 Men are often excluded from maternal and child health care, despite evidence of the importance of their inclusion; research documents clinical resistance to men’s engagement in maternal and pediatric care, reinforcing restrictive norms that men are not needed for maternal and child health.36-38 Finally, health disparities for sexual and gender minorities are also well documented, and include lower health care coverage, higher physical and mental health concerns and unmet medical needs, and increased behavioural risks (e.g., substance use, violence, sex trade involvement), sexually transmitted infections and HIV.39-45 For both sexual and gender minorities, stigmatisation and discrimination from health providers is common,46-48 reinforcing barriers to health care for these groups. Such issues are even greater in countries where sexual and gender minorities are criminalised, a health and human rights violation rooted in restrictive gender norms.39,41,42,49

Health system models and clinic-based programs rarely are gender responsive, much less gender transformative. Health systems must recognise and respond to the negative effects of restrictive gender norms to address the inequalities they reinforce.50 Current responses range from gender unequal (reinforcing male advantage) to, far less commonly, gender transformative (altering gender norms and power) [See Appendix 1. WHO Gender Responsive Assessment Scale51]. We systematically reviewed health system models (n=17 models) and found few guide gender responsiveness. [See Appendix 2. Review of Health System Models for detailed findings.] The more widely known and used models, including the Control Knobs,52 Building Blocks,53 and the Universal Coverage Cube54 are mechanistic in nature, mapping components but not how they interact with the social environment. Other models recognise that health systems are dynamic and complex 12,55-57, but do not provide an intersectional gender analysis to understand how gender bias and restrictive gender norms affect health systems.

A parallel systematic review of gender transformative clinical interventions yielded few studies, despite research documenting their capacity to affect wellbeing.58 [See Appendix 3. Review of Clinical Interventions for detailed findings]. Only four identified studies used a clinic-based gender transformative approach and demonstrated significant health impact. These focused on family planning counseling and/or intimate partner violence (IPV), and counseling to improve restrictive gender norms and inequalities to promote health. While few studies were identified, they resulted in multiplicative behavioural health effects, e.g., reduction in IPV and increased contraceptive use, suggesting that gender transformative approaches can produce multifold benefits.

Implications. Gender inequalities in health persist with little response from health systems; this is not surprising as our models of health systems do not guide us to consider or address gender inequalities. These findings highlight a missed opportunity to engage health systems in gender transformative strategies to improve health at a population level.

**1b. How do gender inequalities manifest in the health care workforce?**

Men hold greater authority as health professionals, relative to women. Globally, women remain least represented at the top of the medical hierachy, among health ministers and physicians, are most represented at the bottom as nurses, nurse midwives and CHWs,5-8,14,59 and hold positions of lesser authority across the bulk of the formal system.7,14,60-62 Similar gender patterns are seen in the informal health sectors, where women are the vast majority of unpaid health workers.5,7,63 These gender inequalities in the health care workforce are bolstered by underlying restrictive gender norms that maintain that “Men Cure, Women Care*.”* Where communities look to physicians and specialists to cure, nurses and CHWs are expected to care, with services from the latter viewed as less skilled, less deserving of remuneration, and more aligned with women’s traditional gender role as caregiver.14,64-66 Even when women are in higher trained positions, such as physicians, gender biases persist in opportunity and position.67-69 In the U.S. for example, only 15% of medical school deans are women,70 and when appointed, female deans are often assigned to “nurturing” roles (e.g., student affairs) rather than policy setting (e.g., finance) roles.70-73 Low visibility of women in these leadership and “cure” roles, combined with early exposure to gendered expectations for girls to serve in caring roles and for boys to develop math/science (cure) skills, maintain these positions, as illustrated by Case 1: The Life Story of Simphiwe (See Appendix 4 Case 1), developed from qualitative and contextual data from Eswatini on gendered factors related to entry into nursing. This case highlights how gender norms affect career aspirations and expectations.

There are both social and economic costs to this relegation. Providers higher in the health system hierarchy – i.e., physicians – not only hold more prestige, larger and more stable salaries, and greater opportunity for advancement, they also have greater job security, greater freedom in practice, more optimal locations of work and lower risk of abuse by and within the system.5,7,8,59 Unfortunately, in many contexts, even those with majority female primary care physicians, curing physicians are viewed as male. Research from the US has found that early in medical training, women are advised against working in specialties with higher mortality risks for patients and longer work hours, such as surgery,74,75 and can receive social backlash from peers and superiors if assertive, even in a crisis situation, a requirement for providing care in high mortality situations.76 Sex differences in health research productivity has also been documented,77-79 in part due to demonstrated biases in peer-review of papers and grants,80-82 though this is improving.79 Such biases are not only unfair, they compromise the breadth and perspectives of research.83,84 These biases and discriminations, combined with the greater burdens of workplace harassment and domestic labor responsibilities women face relative to men, increase burnout and attrition of these workers.73,85-87 Simultaneously, restrictive gender norms maintain greater expectations of male employment and earning, often resulting in their prioritised employment and salaries. This is illustrated by Case 2: Unintended Consequences of a Gender Blind Policy to Salary CHWs in Sierra Leone (See Appendix 4 Case 2). This case was developed from qualitative data collected from CHW managers. Findings indicate that upon salarying CHWs, men more than women took these roles, reinforced by restrictive gender norms related to male employment and female domestic responsibilities.

Women workers are too often devalued and abused in health systems. As noted above, lower positioning in the hierarchical health system increases vulnerability to abuse and mistreatment, including devaluation and even assault. There is substantial evidence of devaluation of CHWs, 5,8,14,59,88,89 a growing cadre of minimally trained staff that is largely or exclusively female. Increasingly public health systems rely on CHWs for community outreach and education to increase demand for and utilization of clinical care,90-92 especially in low resource and conflict-affected settings.93-95 CHWs play a lynchpin role in supporting the health system’s reach and impact for socially marginalised groups, typically in their own communities, yet these positions continue to range from low paid, to incentivised, to unpaid.5,8,14,59,88,89 Poor and unpaid salaries for CHWs are rooted in beliefs from across cultures and over time that women seeking payment for health care services should be viewed with skepticism and distrust, as care is a part of women’s nature and responsibility, whereas paid employment is for men.14,96,97 Norms that CHWs should be motivated by altruism rather than money are reinforced by donors, the health care system, communities, and CHWs themselves, and used to justify low or non-salaried positions for CHWs.91 Such gendered role expectations are stronger in contexts of restricted female employment and crisis.7,98-102 Social harassment, alienation, and even violence can arise from women failing to adhere to the expected gender norm as a caregiver.103,104

Nurses and midwives make up approximately half of the healthcare workforce globally.105 However, there is a shortage of nursing staff,105 with fewer women entering nursing in part due to its low status, pay and disrespectful treatment despite the requisite training and credentialing.106-108 In a common context of substantial overwork (e.g., high patient-provider ratio), inadequate institutional support and opportunity to advance, and lack of a supportive peer network,109-112 there is also substantial documentation of the disrespect, abuse, and harassment including sexual harassment in the workplace among nurses, with perpetrators of these abuses including physicians, supervisors, peers and patients.113-118 Underlying gender norms of male hypersexuality and female sexual passivity create a tolerance for sexualisation and sexual harassment and abuse of women in the workplace for female nurses and female physicians.119

These challenges of overwork and abuse manifest in work stress, job dissatisfaction, and burnout of nurses,112,115,116,120 resulting in poorer quality of care and even abuse of patients,121-125 and poor patient outcomes.109,112,126 Poor quality care and abuse appear to burden disproportionately the most socially marginalised patients and communities, typically women and often the rural poor or young, the least resourced to demand or expect respectful treatment.121,123,124 For these populations, we see lower clinical care utilisation, as a means of avoiding poor treatment from providers,127,128 further compromising their health. This picture suggests a “kick down” (i.e., overwork and abuse of those lower in the health system hierarchy) to “kick out” (i.e., abuse of socially marginalised patients/clients) health system dynamic consistent with other hierarchical structures with a climate of bullying.129 Such abuses disproportionately burden female workers and patients, as repercussions against such abuses are rare, particularly when victims are from socially marginalised groups.

Implications. Restrictive gender norms embedded and perpetuated in health systems devalue women’s labor and capacities for skilled work and maintain a paradigm where female providers “care” with little or no recognition or remuneration, and males “cure” and thus deserve training and remuneration for their work. This paradigm facilitates overwork, devaluation and abuse of women health care providers.. These burdens, particularly in the stressful, hierarchical climates in medicine, foster a bullying culture that can lead to abuse of patients and ultimately, if left unaddressed, lead to poor health outcomes.

**How can we disrupt health systems in ways that transform gender norms?**

Using the findings from our review, we identified three areas of disruption to explore. We emphasised approaches that can be gender transformative, altering restrictive gender norms as a means of improving health. The first area relates to the cure/care paradigm, and underlying norms shaping employmentwhich hinder women from becoming physicians. The second relates to the devaluing and abuse of female health workers, and underlying norms around domestic labor, and acceptability of disrespect and abuse of women. The third relates to the authority and power of the health care system, and the subsequent social and institutional tolerance of abuse, particularly for socially marginalised victims.

Based on these areas of focus, we undertook empirical analyses to examine the evidence on what might positively disrupt health systems (our ‘treatment’). We asked the following research questions:

1. Do nations with higher gender development have a higher share of female physicians per capita, and is a higher share of female physicians per capita associated with better health outcomes?
2. Do women frontline workers who receive more respect and support from family, community and the health system demonstrate higher productivity and health impact?
3. Can social mobilization, though social movements or community organizing, support gender equality and better quality of care from health systems?

**Methods**

We conducted a series of empirical analyses with different datasets to answer each research question, as indicated in the methods outlined in Table 1.

**Findings**

**2a. Do nations with higher gender development have a higher share of female physicians per capita, and is a higher share of female physicians per capita associated with better health outcomes?**

Gender Equality Policies are Associated with Higher Representation of Women Physicians. Findings from this global analysis of the physician workforce indicate that only one in three physicians globally is female. Nations with higher female physician shares also had greater gender equality in education, access to resources and assets, and policy protections (Figure 1a). We cannot assume causality or the direction of the relationship from these cross-sectional findings, but results suggest that greater representation of women physicians is supported by greater gender equality in social and economic realms, a finding corresponding with research on the value of gender equitable policies.3

Higher Representation of Women Physicians is Associated with Better Health Outcomes. While gender parity in the workforce is a good in itself, we also examined whether higher female physician share is associated with better health outcomes. It is associated with lower maternal and infant mortality, longer life expectancies, and higher UHC Index subscores in reproductive, maternal and child health (RMNCH), and service capacity and access (Figure 1b). Exploratory analyses replicating these models adjusting for physicians per capita rather than year, found that female physician share was no longer significant in most models. These findings, taken with those related to gender equality policies described above, indicate that more equal representation of women physicians is likely reinforced by greater gender equality at the societal level, and linked to better public health globally, possibly by supporting a larger physician workforce for primary care. Findings reinforce prior research documenting the value of female physician availability for better health outcomes.130,131

Gender Parity is Not Sufficient to Achieve Gender Equality. While improving gender parity in the physician workforce has value, particularly given evidence of ongoing institutionalised and policy discriminations against women in medicine,132,133 there is indication of higher representation of female relative to male physicians in many regions, including Western Europe,134,135 former Soviet States, and China.135-138 Higher female physician representation appears to correspond with higher representation of women in the labor force,135-138 but that does not necessarily mean equal treatment, pay or opportunity in these positions. Unfortunately, when females are the majority of physicians or a physician specialty, wages for the position stagnate or even decline,135,139,140 as seen in other occupations when they become female dominated.141 Even when women and men are in comparable specialties, women often receive less pay for the same work.139,142 Gender parity in the workforce has value, but gender parity alone will not result in gender equality, without systemic, political and policy effort.

**2b. Do frontline workers receiving more respect and support demonstrate higher productivity and health impact?**

Family Support and Community Respect Increase CHW Productivity and Impact. Findings from a quantitative study of CHWs in India, an exclusively female cadre of workers known as accredited social health activists (ASHAs), and their clients suggest that family support and community respect of ASHAs are important for productivity, but only family support, particularly for domestic labor responsibilities, is associated with impact (i.e., better service uptake among clients) (Figure 2). These results emphasise the importance of support, respect, and, particularly, reductions in domestic labor responsibilities, in strengthening productivity, earnings and impact among CHWs. Findings highlight the need for transforming norms to support equitable redistribution of domestic labor to help reinforce the valuing and impact of women’s professional work.

Institutional Support and Respect for Nurses Improves Quality of Care. Findings from a qualitative case study of nurses and their supervisors indicate that positive supervision, in conjunction with community value for nurses, was seen in high performing clinics, whereas punitive supervision, little peer support, low community value for nurses, and a high burden workload for nurses was seen in the low performing facilities (See Appendix 4 Case 3). Findings are consistent with prior research documenting that nurse satisfaction is higher in institutions with supervisors who value nurse training and contributions, deliver feedback using validation and correction rather than punitively, and provide opportunities for advancement.143-145

Improved treatment, value and respect for these predominantly or exclusively female workers and their work would be gender transformative in itself, to help alter the gender norm reinforced “cure versus care” paradigm that persists in health systems. However, improved value based on compensation and advancement opportunities are also needed.

**2c. Can social mobilization, though social movements or community organizing, support better quality care from health systems?**

Gendered Social Movements Promote Reproductive Rights and Accountability for Violence Against Women. Over the past two decades, community organising for health has become increasingly common, building policy demands, community awareness of health concerns and increasing utilisation of health services.146 Systematic reviews and evidence syntheses147,148 show that community groups help bring moderate to strong improvements in agency,149 economic empowerment,150 and social/political empowerment,151 and health,152-156 at the individual and community levels. Women’s movements and social movements that target gender roles have gained traction, bringing gendered health policy improvements, as with the expansion of reproductive rights in Ireland157 and the strengthening of the criminal justice system’s response to rape in India.158 The global “#MeToo” movement against sexual assault and harassment, built through women’s collective responses and use of social media, is reverberating across sectors. In the United States, it led to research documenting that one in three women in science and technology has experienced harassment at work or in training, and, in turn, a statement of non-tolerance from the National Academies of Science, Engineering and Medicine.159

Community Organizing and Women’s Self Help Groups Increase Health Care Access. While information on gender transformation around the roles of men and gender minorities is still lacking, we use evidence from women’s collectivization to illustrate how localised community organizing can also disrupt systems. Women’s empowerment collectives of different types have increasingly gained ground and now include millions of women members.159 Using participatory action approaches, they are enacting change for women in the spheres of financial inclusion, livelihoods,160-162 and political participation.159 For example, women’s self-help groups (SHGs) are one large and growing platform meant to empower poor and marginalised women in India.163-165 The National Rural Livelihood Mission alone has more than 56 million SHG members, initiated for socioeconomic transformation166 and activism.167-170 Recent research shows that SHGs combining health education with community mobilisation had significant effects on neonatal and maternal health,148,165,171 and HIV,172 and gains were even stronger among more marginalised women.165

Community Organizing and Women’s Self Help Groups Improve Health Provider Responsiveness. Research has not examined how community mobilisation affects women’s interactions with health providers, or whether women’s interactions could shape the health system itself. Using data from Bihar, India, we conducted new analyses to understand the effects of SHGs on women’s interactions with health providers, and responses from providers to these women. We explored whether women from these collectives could inform health worker interactions and response. The comparison is to a control arm of SHGs in the same districts without structured group-based health layering. The results indicate that women from SHGs in intervention areas, relative to those in control areas, were significantly more likely to increase self-advocacy with health care providers and exhibit confident navigation of health services from baseline to follow-up (Figure 3). Women from intervention areas relative to control group areas were also significantly more likely to report respectful and responsive care from the ASHAs. These women also demonstrated increased service utilisation. These findings support the hypothesis that community mobilisation processes can change the way women interact with the health system, directly challenge restrictive gender norms and the health system hierarchy, and in turn bring positive changes and deeper accountability in the health system at local level.

Implications. These analyses highlight that disruption is possible. All three analysis illustrate that gender transformative approaches can strengthen health systems and improve care. [See Figure 4].

Our global analysis of the physician workforce highlights that gender equality in the larger social environment can prevent and reduce gender inequalities in the workforce. Our mixed methods analysis with frontline workers in India demonstrates that respect and value for work is needed from family, community and institution to support productivity. These findings suggest that support is necessary to maintain workers’ strength for performance and impact even in settings affected by gender inequalities. Finally, social movements and women’s empowerment collectives offer an external accountability structure, pushing for it to provide universal and equitable care.

We recognise that our disruptions research draws heavily from gender inequalities disadvantaging women, despite our previously noted recognition of the need for greater focus on the ways that gender norms and inequalities can impede the health of women, men, and sexual and gender minorities. Inadequate, and inadequately diverse, data speaks to the need for better measures and more gender norm-focused data, as noted in other papers from this series.2,173 Nonetheless, these findings suggest that gender transformative approaches (in and with health systems) can impact gender inequalities and health outcomes.

**Discussion**

It has been 40 years since the Alma Ata Declaration committed governments to provide primary health services ‘for all’, enshrined the importance of individual and community participation in health care, underscored the political, social and economic causes of ill health, and reaffirmed health as a human right. While we have made progress, the aims of the declaration have yet to be met. How can we ensure that new international commitments rooted in the SDGs and UHC, do not similarly fall short?

Our research demonstrates that restrictive gender norms manifest in the health system and reflect and reinforce gender inequalities, compromising the health and well-being of patients and providers. Importantly, we also show that health systems can be disrupted, using gender transformative approaches operating outside (social and economic policies supportive of gender equality), within (support, value and safety for workers), and with (social/community accountability) health systems, to alter restrictive gender norms and reduce gender inequalities.

This evidence suggests that we need to go beyond seeing gender equality as an ‘add on’ but rather as a fundamental factor that predetermines and shapes health systems and outcomes.6 We need to rethink our models, which at their core reflect our collective aspirations of what health systems are meant to deliver. We need to make our aspirations around gender equality explicit, from policy, to administration, to service provision, and evaluate and assess progress against these values. Drawing from research in this paper, and building on prior work,174,175 we put forward a set of aspirations for gender equitable health systems, that:

1. *Reflect and reinforce a gender equitable society;*
2. *Address gender norms and root causes of inequalities, across the life course;*
3. *Provide equal opportunity for healthcare professionals of all genders to enter, thrive, and advance within health systems;*
4. *Ensure equal access and usage of high- quality health services by people of all genders, unimpeded by financial, social and geographic barriers; and*
5. *Commit to being held accountable to address gender inequalities at all levels.*

Conclusion. Health systems must be held accountable to address gender inequalities and restrictive gender norms. Given the persistence of restrictive gender norms within systems, even with progressive policies and programs, innovative approaches are needed. Social forces and change outside of health systems hold potential. Growing waves of collective action, often connected in new ways by social media, show promise in diverse settings in improving equitable access to quality care, services and accountability. Given the strength of discrimination and restrictive norms, social movements are needed to bring about equality and change. The global health community needs to see themselves as an integral part of this broader social reform. This will not be comfortable. It will entail calling out power and hierarchy, and the privileges they bring. We suggest though, that the question is not whether these steps should be taken, but when? The call for change in systems and hierarchies upholding inequitable gender norms and outcomes is growing stronger. The global health community can passively resist, or, assume a leadership role in overcoming gender inequitable norms, and, in doing so, deliver on the aspirations of the SDGs and UHC.

**Author Contributions:**

KH and AR co-led conceptualization and writing of the paper, and each led design of specific analyses undertaken for this paper. KH guided theory and priorities for disruption, and AR guided analysis of gender inequalities in health systems. AR reviewed all research methods used in this paper, and confirmed data quality and ethics for data analyses undertaken for this work. AD led the study on nurses in Uttar Pradesh. ND led the study on ASHAs in Uttar Pradesh. HW and JM led the study on CHWs and CHW policy in Sierra Leone. LM, JK, and AR led the study on gender parity in the global physician workforce. KH, YA, and NS led the study on women’s collectives (SHGs) in India. FS and RFM led development of the case on the nurse from Eswatini. VP, RH and EB conducted the systematic literature review on health systems models, including data extraction and critique of models. AR and JS led the systematic review on gender transformative clinical interventions. AR, LM, AD, JY, EB, NB, RFM, FS, JK, KH, YA and JS conducted the critical reviews of the literature on gender inequalities and gender norms affecting health and helped draft pieces of those reviews, with consideration of diverse geographic contexts. AR, LM and JY also supported development of all cases and figures included in this paper. EB, CK and RH provided substantive input in the work on models and policy in this paper. All authors offered critical inputs and reviews of this work, contributed intellectual and substantive revisions to the writing, and provided final approval of the submitted version. LM, VP, SH, and JK provided substantial contribution to the conceptualization of the paper, and LM, VP, SH, JK, JY, and JS provided extensive support in the multiple reviews and revisions of this work.

**\*Gender Equality, Norms and Health Steering Committee**

Gary Darmstadt, MD (Chair); Margaret Greene, PhD; Sarah Hawkes, PhD; Lori Heise, PhD; Sarah Henry, MPH; Jody Heymann, PhD; Jeni Klugman, PhD; Ruth Levine, PhD; Anita Raj, PhD; Geeta Rao Gupta, PhD

**Declaration of Interests**

KH and YA are employed by the Bill & Melinda Gates Foundation. The other authors declare they have no conflicts of interest. The views expressed are those of the authors and are not necessarily those of the Bill & Melinda Gates Foundation and the United Arab Emirates. As corresponding author, AR states that she had full access to all data and final responsibility to submit for publication.

**Acknowledgments-**

We wish to thank the Paper 4 Working Group for their important contributions. In particular we want to thank Kristen Envarli of Stanford University for her tireless dedication to supporting the development of this paper, as the coordinator for the work. We also want to thank Natalie Wyss and Scott Blair from University of California San Diego for their contributions to formatting and figure development. Thanks to Bidhubhusan Mahapatra, Avishek Hazra, and Arupendra Mozumdar of Population Council India for their support on the analyses on women’s collectives in India. We thank Holly Shakya of University of California San Diego, Dharmendra Chandurkar and Kultar Singh from Sambodhi Research in India, and Suneeta Krishnan from the Bill and Melinda Gates Foundation India for their support on the resulting in the analyses on nurses and ASHA in Uttar Pradesh, India. Special thanks to Linda Waldman for her review and feedback on this work. Thanks also to Sushil Baral from HERD International Nepal, Kui Muraya of Kemri-Wellcome Trust in Kenya, and Chris Cartwright, Helen Elsey, and Rebecca King of the University of Leeds for their support of the analyses related to health systems theory and models.

**PAPER 4 Working Group:**

* Kristen Envarli, MEd, Stanford University, USA
* Natalie Wyss, PhD, University of California San Diego, USA
* Scott Blair, PhD, University of California San Diego, USA
* Bidhubhusan Mahapatra, PhD, Population Council, India
* Avishek Hazra, PhD, Population Council, India
* Arupendra Mozumdar, PhD, Population Council, India
* Jessica Levy, PhD, Washington St. Louis University, USA
* Holly Shakya, PhD, University of California San Diego, USA
* Dharmendra Chandurkar, PGDFM, Sambodhi Research, India
* Kultar Singh, PGDFM, Sambodhi Research, India
* Suneeta Krishnan, PhD, Bill and Melinda Gates Foundation, India
* Linda Waldman, PhD, Institute of Development, University of Sussex, UK
* Sushil Baral, PhD, HERD International, Nepal
* Kui Muraya, PhD, Kemri-Wellcome Trust, Kenya
* Chris Cartwright, PhD, University of Leeds, UK
* Helen Elsey, PhD, University of Leeds, UK
* Rebecca King, University of Leeds, UK

And the listed authors of the paper.

**Funding Statement**: This Series was funded by the Gender Equality, Integrated Delivery, HIV, Nutrition, Family Planning and Water Sanitation and Hygiene Program Strategy Teams at the Bill & Melinda Gates Foundation, and the United Arab Emirates Ministry of Foreign Affairs and International Cooperation, through grants to Stanford University. The funders of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report. The corresponding author had full access to all the data and had final responsibility to submit the paper for publication.

**TABLE**

**Table 1. Research methods to examine 1) how gender norms and inequalities manifest in health systems and 2) how we can disrupt health systems and eliminate and prevent gender inequalities.**

|  |  |
| --- | --- |
| **Research Questions and Study Design** | **Study Design: Methods**  |
| 1. **How do gender norms and inequalities manifest in health systems?**
 |
| ***1a. How do health systems affect gender inequalities in health?*** |
| What are health system responses to gender inequalities in health? | Critical Review: We conducted this literature review using the following databases: PubMed, Google Scholar, Web of Science. We did not define or constrain search terms a priori; trained researchers reviewed abstracts while searching and determined which papers were of interest at time of the search. We created annotated bibliographies on papers of interest and sorted these into subtopics identified iteratively. Expert groups discussed findings from these reviews to identify key themes of interest, and small groups conducted write ups of review findings based on identified subthemes. Experts reviewed all writings to ensure presented work reflected the breadth of perspectives from across contexts and disciplines.  |
| Do health system models consider gender or gender equality, and their intersection with social inequalities (intersectionality)? | Systematic review: We conducted this literature review in September 2018 using PubMed, Scopus, and Google Scholar, and the World Bank and the World Health Organization websites, to identify papers and reports published between January 2000 and September 2018. Papers were included if they provided a model of health systems, not system components or a country specific system. Focus was on models designed for low and middle income countries (LMICs) or with a focus on culture and health systems. Subsequent to database searches, a “snowballing” method was used to retrieve articles from the bibliographies of papers identified in the review. All compiled papers were screened to ensure they met inclusion criteria and data were extracted to describe the components of the model and whether they addressed social and gender inequalities. (See Appendix 2 for data and search terms.)  |
| Can gender transformative clinical interventions improve health and gender equality? | Systematic Review: This review was conducted by the IRIS group on January 2018 to identify studies published from January 2000 to December 2017 on evaluated gender transformative health interventions conducted in clinic settings or by clinical providers. Gender transformative was defined as affecting restrictive gender roles or norms, including gender-based power differentials.176 Selected papers were those written in English, French, Spanish or Portuguese, involved controlled trial designs- either randomised (with n≥50 per arm) or quasi-experimental (with n≥100 per arm), demonstrated significant impact on health outcomes, and had a study retention rate of over 60%. Published papers were identified through the following databases: EBSCO, ProQuest, Scopus, and Web of Science, and for grey literature we used governmental and non-governmental project websites. IRIS Group researchers and library staff at Washington University in St. Louis developed search terms for this review and then tested them for accuracy and noise before full use. After these articles were reviewed and compiled, “snowballing” was used to identify additional studies from July to October 2018; this involved retrieving articles from the bibliographies of identified papers, review of clinicaltrials.org, and expert input. Once all articles were compiled, titles and abstracts were screened for study inclusion criteria; relevant articles placed into a reference manager and tagged by health issue of focus. Two senior researchers with expertise in gender and health then reviewed and extracted data on effective interventions. (See Appendix 3 for data and search terms.) |
| ***1b. How do gender inequalities manifest in the health care workforce?***  |
| How does the health system (medical) hierarchy intersect with gender inequalities?  | Critical Review. A critical review of the literature was conducted using the same methodology described above, in the prior row on Critical Review methods. As noted previously, cross-national and cross-disciplinary input from our expert panel guided analysis.  |
| How does gender in the life course affect women’s training and employment opportunities in health care?  | Case Study of a Trained Nurse in Eswantini. A case study of a nurse was developed based on findings from qualitative research in HIV clinical settings and with HIV affected populations in Eswantini, including nurses, community health workers (CHWs) and volunteers, and adolescent and adult HIV patients; methods from these studies are available elsewhere.177-180 These stories were triangulated with national health, demographic and economic data,181,182 to accurately reflect the context of the country. The story was developed to describe the gendered aspects of health care training and employment, using a life course perspective. (See Appendix 4 Case 1.). |
| How do gender blind health care financing policies differentially affect women and men as paid health care providers? | Case Study of a Health Policy to Support and Pay CSWs in Sierra Leone. In 2016, Sierra Leone established the National Community Health Policy and Programme, to increase support and remuneration for CHWs,183 in recognition of their work through conflict and the 2014 Ebola epidemic. Subsequent to policy implementation, in-depth interviews were conducted CHWs’ managers (n=16) in two districts to provide insight into how the policy affects recruitment and retention of CHWs. Data were coded and analysed using NVIVO. Ministry data were also reviewed to assess demographics of CHWs following the policy, to assess recruitment of female CHWs. (See Appendix 4 Case 2.)  |

|  |
| --- |
| 1. **How we can disrupt health systems in ways to eliminate and prevent gender inequalities.**
 |
| Do nations with higher gender development have a higher share of female physicians per capita, and is a higher share of female physicians per capita associated with better health outcomes? | Cross-Sectional Analysis. Using sex-disaggregated health workforce data from WHO’s Global Health Workforce Statistics184 and the Organization for Economic Cooperation and Development (OECD)’s Health Statistics 2017,185 we analyzed whether greater female representation of women physicians with indicators of gender development and health indicators (n=91 nations). Gender development indicators included the Social Institutions and Gender Index [SIGI],186 the Global Gender Gap [GGG]187, and the gender gap in wage earnings188. Health indicators included maternal mortality ratios,189 infant mortality rates,190 female and male life expectancy191 and Universal Health Care [UHC] scores.192 (See Appendix 5 for country level data and detailed methods.) |
| Do frontline workers receiving more respect and support from family, community and the health system demonstrate higher productivity and health impact?  | Mixed-Methods Analysis. We conducted quantitative analyses of survey data from a state-wide sample of CHWs (known as ASHAs) in Uttar Pradesh, India (N=1341) and their clients who gave birth in the past year (n=8319), to explore whether family support and community respect for ASHAs, as reported by the ASHA, affects productivity and impact. Productivity was defined as household visits and earnings, as reported by ASHAs, and impact was defined as antenatal care and institutional delivery, as reported by clients.We also created a Case based on findings from in-depth interviews with Medical Officers in Charge and Staff Nurses from four high performing clinics and two low performing clinics in a single district in Uttar Pradesh, to explore supervisory and support structures for nurses in these clinics (n=12). Two researchers coded and analysed detailed interview notes collected from participants; they identified themes on effective and problematic supervision and support in the clinics. (See Appendix 4 Case 3.) |
| Can social mobilization, though social movements or community organizing, support better quality care from health systems? | Two-Armed Quasi-Experimental Trial. We conducted quantitative analyses of survey data from two repeated cross-sectional surveys conducted in April-June 2013 and June-August 2016 among women from self help groups (SHGs). A two-stage cluster sampling design was used to select study participants. All women aged 18-49 years in the SHG who have given a birth to the baby in one year prior to the survey were eligible: 2,407 women were interviewed from 713 SHGs in 2013, and 2,970 women from 1,390 groups in 2016. Four group level process indicators were considered: whether group interacted with local health facility, whether group came together to negotiate with health centre, and whether group came together to negotiate with Aanganwadi centre. Three individual level process indicators were included: whether woman negotiated with staff of health care centre, whether woman negotiated with FLWs in villages, and whether woman had confidence in accessing health services from government health centre. The response of health system was measured using four indicators that assessed whether ASHAs provided health care with: (a) respect; (b) directs to appropriate providers; (c) responds quickly to emergency situations; (d) available when needed. The service uptake was assessed using three indicators: receipt of IFA for 100 or more days, at least one visit by health worker within a week of delivery, and health worker accompanied women for delivery at a health facility.  |

**FIGURES**

**Figure 1. Global Analysis of Female Physician Share, Gender Equality and Health**

Figure 1a. Global Analysis of Female Physician Share and Gender Equality Policies and Indicators

|  |  |
| --- | --- |
|  |  |
| Distribution of female physician share and physicians per capita across categorizations in 91 countries. Note: Colored bars show group means; error bars indicate minimum and maximum values. Parity is defined as 45%-55% female. | Female to male wage gap across categorizations in 91 countries. Note: Colored bars show group means; error bars indicate minimum and maximum values. Parity is defined as 45%-55% female. |
|  |  |
| Association of female physician share with SIGI index and sub-indices.Note: Each line represents the coefficient and 95% confidence interval for separate fractional logit GLM regressions, adjusting for GDP (as a natural log) and year.  | Association of female physician share with GGG index and sub-indices.Note: Each line represents the coefficient and 95% confidence interval for separate fractional logit GLM regressions, adjusting for GDP (as a natural log) and year. |

Figure 1b. Global Analysis of Female Physician Share and Health Outcomes

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. |  | 2. |  | 3. |  |
| Global analysis of the association of maternal and infant mortality (1), life expectancy outcomes (2) and Universal Health Coverage Index (3) with female physician share.Note: Each line represents the coefficient and 95% confidence interval for separate GLMs with a poisson family and log link (1), linear (2) or fractional logit (3) regressions, adjusting for GDP (as a natural log) and year.  |

**Figure 2. Associations of Family and Community Support and Respect with**

**ASHA Productivity and Impact**

Figure 2B: Adjusted coefficients for effects on CHW productivity – number of women accompanied to facility

Figure 2A: Adjusted coefficients for effects on CHW productivity – number of households visited





Figure 2C: Adjusted odds ratios for effects on CHW impact – % of women receiving minimum antenatal care

*All three models were adjusted for socio-demographic covariates.*

*\*Statistically significant at 5% \*\* Statistically significant at 1%*

**Figure 3. Effects of SHG-based Health Intervention on Client-ASHA Interactions in Bihar, India**



**Figure 4. How can we disrupt gender inequalities in health systems?**



**REFERENCES**

1. Heise L, Greene M, Opper N, etal. Gender Inequality and Restrictive Gender Norms: Framing the Challenges to Health. *Lancet (London, England)* Forthcoming 2019.

2. Weber A, Cislaghi B, Meausoone V, et.al. How gender norms shape health: insights from global survey data. *Lancet* 2019 Forthcoming.

3. Heymann J, Levy J, Bose B, etal. Improving health with programmatic, policy, and governance approaches to reducing gender inequality and changing restrictive gender norms. *Lancet* 2019 Forthcoming.

4. Akseer N, Salehi AS, Hossain SM, et al. Achieving maternal and child health gains in Afghanistan: a Countdown to 2015 country case study. *The Lancet Global health* 2016; **4**(6): e395-413.

5. Langer A, Meleis A, Knaul FM, et al. Women and Health: the key for sustainable development. *Lancet (London, England)* 2015; **386**(9999): 1165-210.

6. Morgan R, George A, Ssali S, Hawkins K, Molyneux S, Theobald S. How to do (or not to do)... gender analysis in health systems research. *Health policy and planning* 2016; **31**(8): 1069-78.

7. Witter S, Namakula J, Wurie H, et al. The gendered health workforce: mixed methods analysis from four fragile and post-conflict contexts. *Health policy and planning* 2017; **32**(suppl\_5): v52-v62.

8. Theobald S, Morgan R, Hawkins K, Ssali S, George A, Molyneux S. The importance of gender analysis in research for health systems strengthening. *Health policy and planning* 2017; **32**(suppl\_5): v1-v3.

9. Connell R. Gender, health and theory: conceptualizing the issue, in local and world perspective. *Soc Sci Med* 2012; **74**(11): 1675-83.

10. Davis K. Intersectionality as buzzword:A sociology of science perspective on what makes a feminist theory successful. *Feminist Theory* 2008; **9**(1): 67-85.

11. Roncarolo F, Boivin A, Denis JL, Hebert R, Lehoux P. What do we know about the needs and challenges of health systems? A scoping review of the international literature. *BMC health services research* 2017; **17**(1): 636.

12. Sheikh K, Gilson L, Agyepong IA, Hanson K, Ssengooba F, Bennett S. Building the Field of Health Policy and Systems Research: Framing the Questions. *PLoS Medicine* 2011; **8**(8).

13. Harding S. Rethinking standpoint epistemology: what is "strong objectivity?". *The Centennial Review* 1992; **36**(3): 437-70.

14. RinGs. Gender and health systems Reader: Key findings from nine research projects: Research in Gender and Ethics, January 2018.

15. Boyd A, Van de Velde S, Vilagut G, et al. Gender differences in mental disorders and suicidality in Europe: results from a large cross-sectional population-based study. *Journal of affective disorders* 2015; **173**: 245-54.

16. WHO. Gender Disparities and Mental Health. Geneva, Switzerland.

17. Borges G, Nock MK, Haro Abad JM, et al. Twelve-month prevalence of and risk factors for suicide attempts in the World Health Organization World Mental Health Surveys. *The Journal of clinical psychiatry* 2010; **71**(12): 1617-28.

18. Fidler MM, Gupta S, Soerjomataram I, Ferlay J, Steliarova-Foucher E, Bray F. Cancer incidence and mortality among young adults aged 20-39 years worldwide in 2012: a population-based study. *The Lancet Oncology* 2017; **18**(12): 1579-89.

19. Ng N, Kowal P, Kahn K, et al. Health inequalities among older men and women in Africa and Asia: evidence from eight Health and Demographic Surveillance System sites in the INDEPTH WHO-SAGE Study. *Global health action* 2010; **3**.

20. Nugent R, Bertram MY, Jan S, et al. Investing in non-communicable disease prevention and management to advance the Sustainable Development Goals. *Lancet (London, England)* 2018.

21. Shaw LJ, Pepine CJ, Xie J, et al. Quality and Equitable Health Care Gaps for Women: Attributions to Sex Differences in Cardiovascular Medicine. *Journal of the American College of Cardiology* 2017; **70**(3): 373-88.

22. IIPS. National Family Health Survey (NFHS-4), 2015-16 Mumbai, India: International Institute for Population Sciences (IIPS) and ICF., 2018.

23. Calu Costa J, Wehrmeister FC, Barros AJ, Victora CG. Gender bias in careseeking practices in 57 low- and middle-income countries. *Journal of global health* 2017; **7**(1): 010418.

24. Vilms RJ, McDougal L, Atmavilas Y, et al. Gender inequities in curative and preventive health care use among infants in Bihar, India. *Journal of global health* 2017; **7**(2): 020402.

25. Baker P, Dworkin SL, Tong S, Banks I, Shand T, Yamey G. The men’s health gap: men must be included in the global health equity agenda. *Bulletin of the World Health Organization* 2014; **92**(8): 618-20.

26. Trias-Llimos S, Janssen F. Alcohol and gender gaps in life expectancy in eight Central and Eastern European countries. *European journal of public health* 2018.

27. Mokdad AH, Ballestros K, Echko M, et al. The State of US Health, 1990-2016: Burden of Diseases, Injuries, and Risk Factors Among US States. *Jama* 2018; **319**(14): 1444-72.

28. Yakoob MY, Micha R, Khatibzadeh S, et al. Impact of Dietary and Metabolic Risk Factors on Cardiovascular and Diabetes Mortality in South Asia: Analysis From the 2010 Global Burden of Disease Study. *American journal of public health* 2016; **106**(12): 2113-25.

29. Huxley RR, Hirakawa Y, Hussain MA, et al. Age- and Sex-Specific Burden of Cardiovascular Disease Attributable to 5 Major and Modifiable Risk Factors in 10 Asian Countries of the Western Pacific Region. *Circulation journal : official journal of the Japanese Circulation Society* 2015; **79**(8): 1662-74.

30. Ballesteros MF, Williams DD, Mack KA, Simon TR, Sleet DA. The Epidemiology of Unintentional and Violence-Related Injury Morbidity and Mortality among Children and Adolescents in the United States. *International journal of environmental research and public health* 2018; **15**(4).

31. Sorenson SB. Gender disparities in injury mortality: consistent, persistent, and larger than you'd think. *American journal of public health* 2011; **101 Suppl 1**: S353-8.

32. Dworkin SL, Fleming PJ, Colvin CJ. The promises and limitations of gender-transformative health programming with men: critical reflections from the field. *Culture, health & sexuality* 2015; **17 Suppl 2**: S128-43.

33. Teo CH, Ng CJ, Booth A, White A. Barriers and facilitators to health screening in men: A systematic review. *Social science & medicine (1982)* 2016; **165**: 168-76.

34. Samulowitz A, Gremyr I, Eriksson E, Hensing G. "Brave Men" and "Emotional Women": A Theory-Guided Literature Review on Gender Bias in Health Care and Gendered Norms towards Patients with Chronic Pain. *Pain research & management* 2018; **2018**: 6358624.

35. Nolan M. Masculinity lost: a systematic review of qualitative research on men with spinal cord injury. *Spinal cord* 2013; **51**(8): 588-95.

36. Davis J, Vyankandondera J, Luchters S, Simon D, Holmes W. Male involvement in reproductive, maternal and child health: a qualitative study of policymaker and practitioner perspectives in the Pacific. *Reproductive health* 2016; **13**(1): 81.

37. Dumbaugh M, Tawiah-Agyemang C, Manu A, ten Asbroek GH, Kirkwood B, Hill Z. Perceptions of, attitudes towards and barriers to male involvement in newborn care in rural Ghana, West Africa: a qualitative analysis. *BMC pregnancy and childbirth* 2014; **14**: 269.

38. Tokhi M, Comrie-Thomson L, Davis J, Portela A, Chersich M, Luchters S. Involving men to improve maternal and newborn health: A systematic review of the effectiveness of interventions. *PloS one* 2018; **13**(1): e0191620.

39. Reisner SL, Poteat T, Keatley J, et al. Global health burden and needs of transgender populations: a review. *Lancet (London, England)* 2016; **388**(10042): 412-36.

40. White Hughto JM, Reisner SL, Pachankis JE. Transgender stigma and health: A critical review of stigma determinants, mechanisms, and interventions. *Social science & medicine (1982)* 2015; **147**: 222-31.

41. Nagata JM. Challenges, health implications, and advocacy opportunities for lesbian, gay, bisexual, and transgender global health providers. *Global health promotion* 2017: 1757975916677504.

42. Winter S, Diamond M, Green J, et al. Transgender people: health at the margins of society. *Lancet (London, England)* 2016; **388**(10042): 390-400.

43. Blondeel K, de Vasconcelos S, Garcia-Moreno C, Stephenson R, Temmerman M, Toskin I. Violence motivated by perception of sexual orientation and gender identity: a systematic review. *Bull World Health Organ* 2018; **96**(1): 29-41l.

44. Fredriksen-Goldsen KI, Kim HJ, Barkan SE, Muraco A, Hoy-Ellis CP. Health disparities among lesbian, gay, and bisexual older adults: results from a population-based study. *American journal of public health* 2013; **103**(10): 1802-9.

45. Branstrom R, Hatzenbuehler ML, Pachankis JE. Sexual orientation disparities in physical health: age and gender effects in a population-based study. *Social psychiatry and psychiatric epidemiology* 2016; **51**(2): 289-301.

46. Shires DA, Jaffee K. Factors associated with health care discrimination experiences among a national sample of female-to-male transgender individuals. *Health & social work* 2015; **40**(2): 134-41.

47. Mattocks KM, Sullivan JC, Bertrand C, Kinney RL, Sherman MD, Gustason C. Perceived Stigma, Discrimination, and Disclosure of Sexual Orientation Among a Sample of Lesbian Veterans Receiving Care in the Department of Veterans Affairs. *LGBT health* 2015; **2**(2): 147-53.

48. Kattari SK, Hasche L. Differences Across Age Groups in Transgender and Gender Non-Conforming People's Experiences of Health Care Discrimination, Harassment, and Victimization. *Journal of aging and health* 2016; **28**(2): 285-306.

49. Divan V, Cortez C, Smelyanskaya M, Keatley J. Transgender social inclusion and equality: a pivotal path to development. *Journal of the International AIDS Society* 2016; **19**(3 Suppl 2): 20803.

50. Holland KJ, Rabelo VC, Gustafson AM, Seabrook RC, Cortina LM. Sexual harassment against men: Examining the roles of feminist activism, sexuality, and organizational context. *Psychology of Men & Masculinity* 2016; **17**(1): 17-29.

51. WHO. WHO Gender Responsive Assessment Scale: criteria for assessing programmes and policies. <http://www.who.int/gender/mainstreaming/GMH_Participant_GenderAssessmentScale.pdf>.

52. Roberts M, Hsiao W, Berman P, Reich M. Getting Health Reform Right: A Guide to Improving Performance and Equity. Oxford, UK: Oxford University Press; 2003.

53. WHO. Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies. Geneva: World Health Organization; 2010.

54. WHO. Health Financing for Universal Coverage- Universal Coverage Three Dimensions. <http://www.who.int/health_financing/strategy/dimensions/en/>.

55. Savigny Dd, Blanchet K, Adam T, editors. Applied Systems Thinking for Health Systems Research: A Methodological Handbook. London: Open University Press; 2017.

56. deSavigny D, Adam T. Systems thinking for health systems strengthening. Geneva: World Health Organization; 2009.

57. Gilson L. Health Policy and Systems Research: A Methodology Reader. Geneva: World Health Organization, 2012.

58. Taukobong HF, Kincaid MM, Levy JK, et al. Does addressing gender inequalities and empowering women and girls improve health and development programme outcomes? *Health policy and planning* 2016; **31**(10): 1492-514.

59. George A, Theobald S, Morgan R, Hawkins K, Molyneux S. Snap shots from a photo competition: what does it reveal about close-to-community providers, gender and power in health systems? *Human resources for health* 2015; **13**: 57.

60. Theobald S, MacPherson E, McCollum R, Tolhurst R. Close to community health providers post 2015: Realising their role in responsive health systems and addressing gendered social determinants of health. BMC proceedings; 2015: BioMed Central; 2015. p. S8.

61. KFF. State Health Facts. Total Number of Physician Assistants, by Gender. Oakland, CA, October 2017.

62. KFF. State Health Facts. Total Number of Physician Assistants, by Gender. Total Number of Professionally Active Nurses by Gender. Oakland, CA, October 2017.

63. George A. Human Resources for Health: A Gender Analysis. Geneva, Switzerland, July 2007.

64. Maes K, Closser S, Vorel E, Tesfaye Y. A women’s development army: narratives of community health worker investment and empowerment in rural Ethiopia. *Studies in Comparative International Development* 2015; **50**(4): 455-78.

65. Kane S, Kok M, Ormel H, et al. Limits and opportunities to community health worker empowerment: a multi-country comparative study. *Social Science & Medicine* 2016; **164**: 27-34.

66. Streilein A, Leach B, Everett C, Morgan P. Knowing Your Worth: Salary Expectations and Gender of Matriculating Physician Assistant Students. *The journal of physician assistant education : the official journal of the Physician Assistant Education Association* 2018; **29**(1): 1-6.

67. Files JA, Mayer AP, Ko MG, et al. Speaker introductions at internal medicine grand rounds: forms of address reveal gender bias. *Journal of women's health* 2017; **26**(5): 413-9.

68. Boiko JR, Anderson AJ, Gordon RA. Representation of women among academic grand rounds speakers. *Jama internal medicine* 2017; **177**(5): 722-4.

69. Silver JK, Bhatnagar S, Blauwet CA, et al. Female physicians are underrepresented in recognition awards from the American Academy of Physical Medicine and Rehabilitation. *PM&R* 2017; **9**(10): 976-84.

70. Schor NF. The Decanal Divide: Women in Decanal Roles at U.S. Medical Schools: AAMC Association of American Medical Colleges, 2017.

71. Carr PL, Raj A, Kaplan SE, Terrin N, Breeze JL, Freund KM. Gender Differences in Academic Medicine: Retention, Rank, and Leadership Comparisons From the National Faculty Survey. *Academic medicine: journal of the Association of American Medical Colleges* 2018.

72. Carr PL, Gunn CM, Kaplan SA, Raj A, Freund KM. Inadequate progress for women in academic medicine: findings from the National Faculty Study. *Journal of women's health* 2015; **24**(3): 190-9.

73. Lautenberger DM, Dandar, Valerie M., Raezer, Claudia L., Sloane, Rae Anne. The State of Women in Academic Medicine: The Pipeline and Pathways to Leadership 2013-14: AAMC Association of American Medical Colleges, 2014.

74. Burgess DJ, Joseph A, Van Ryn M, Carnes M. Does stereotype threat affect women in academic medicine? *Academic Medicine* 2012; **87**(4): 506.

75. Fassiotto M, Hamel EO, Ku M, et al. Women in academic medicine: measuring stereotype threat among junior faculty. *Journal of Women's Health* 2016; **25**(3): 292-8.

76. Kolehmainen C, Brennan M, Filut A, Isaac C, Carnes M. “Afraid of Being Witchy with a ‘B’”: A Qualitative Study of How Gender Influences Residents’ Experiences Leading Cardiopulmonary Resuscitation. *Academic medicine: journal of the Association of American Medical Colleges* 2014; **89**(9): 1276.

77. Jagsi R, Motomura AR, Griffith KA, Rangarajan S, Ubel PA. Sex differences in attainment of independent funding by career development awardees. *Annals of internal medicine* 2009; **151**(11): 804-11.

78. Raj A, Carr PL, Kaplan SE, Terrin N, Breeze JL, Freund KM. Longitudinal Analysis of Gender Differences in Academic Productivity Among Medical Faculty Across 24 Medical Schools in the United States. *Academic medicine: journal of the Association of American Medical Colleges* 2016; **91**(8): 1074-9.

79. Filardo G, da Graca B, Sass DM, Pollock BD, Smith EB, Martinez MA-M. Trends and comparison of female first authorship in high impact medical journals: observational study (1994-2014). *bmj* 2016; **352**: i847.

80. Gender imbalance in science journals is still pervasive. *Nature, Editorial* 2017; **541**: 435–6.

81. Witteman HO, Hendricks M, Straus S, Tannenbaum C. Female grant applicants are equally successful when peer reviewers assess the science, but not when they assess the scientist. *bioRxiv* 2017: 232868.

82. Bendels MHK, Muller R, Brueggmann D, Groneberg DA. Gender disparities in high-quality research revealed by Nature Index journals. *PloS one* 2018; **13**(1): e0189136.

83. Nielsen MW, Andersen JP, Schiebinger L, Schneider JW. One and a half million medical papers reveal a link between author gender and attention to gender and sex analysis. *Nature Human Behaviour* 2017; **1**(11): 791.

84. Plank-Bazinet JL, Heggeness ML, Lund PK, Clayton JA. Women's Careers in Biomedical Sciences: Implications for the Economy, Scientific Discovery, and Women's Health. *Journal of women's health (2002)* 2017; **26**(5): 525-9.

85. Carr PL, Ash AS, Friedman RH, et al. Faculty perceptions of gender discrimination and sexual harassment in academic medicine. *Annals of internal medicine* 2000; **132**(11): 889-96.

86. Edmunds LD, Ovseiko PV, Shepperd S, et al. Why do women choose or reject careers in academic medicine? A narrative review of empirical evidence. *The Lancet* 2016; **388**(10062): 2948-58.

87. Hasebrook J, Hahnenkamp K, Buhre W, et al. Medicine Goes Female: Protocol for Improving Career Options of Females and Working Conditions for Researching Physicians in Clinical Medical Research by Organizational Transformation and Participatory Design. *JMIR research protocols* 2017; **6**(8): e152.

88. Singh D, Negin J, Otim M, Orach CG, Cumming R. The effect of payment and incentives on motivation and focus of community health workers: five case studies from low- and middle-income countries. *Human resources for health* 2015; **13**: 58.

89. PHI. US Home Care Workers: The Facts, 2016.

90. MoHFW I. Accredited Social Health Activists (ASHAS) and Auxiliary Nurse Midwifes (ANMS) Appointed under National Rural Health Mission (NRHM) July 18, 2014. <http://pib.nic.in/newsite/PrintRelease.aspx?relid=106925>.

91. Glenton C, Colvin CJ, Carlsen B, et al. Barriers and facilitators to the implementation of lay health worker programmes to improve access to maternal and child health: qualitative evidence synthesis. *The Cochrane database of systematic reviews* 2013; **10**(10).

92. Chou VB, Friberg IK, Christian M, Walker N, Perry HB. Expanding the population coverage of evidence-based interventions with community health workers to save the lives of mothers and children: an analysis of potential global impact using the Lives Saved Tool (LiST). *Journal of global health* 2017; **7**(2): 020401.

93. Witter S, Namakula J, Wurie H, et al. The gendered health workforce: mixed methods analysis from four fragile and post-conflict contexts. *Health policy and planning* 2017; **32**(suppl\_5): v52-v62.

94. George A, Theobald S, Morgan R, Hawkins K, Molyneux S. Snap shots from a photo competition: what does it reveal about close-to-community providers, gender and power in health systems? *Human resources for health* 2015; **13**(1): 57.

95. Saprii L, Richards E, Kokho P, Theobald S. Community health workers in rural India: analysing the opportunities and challenges Accredited Social Health Activists (ASHAs) face in realising their multiple roles. *Human resources for health* 2015; **13**(1): 95.

96. Geldsetzer P, Vaikath M, De Neve J-W, et al. Distrusting community health workers with confidential health information: a convergent mixed-methods study in Swaziland. *Health policy and planning* 2017; **32**(6): 882-9.

97. Feldhaus I, Silverman M, LeFevre AE, et al. Equally able, but unequally accepted: Gender differentials and experiences of community health volunteers promoting maternal, newborn, and child health in Morogoro Region, Tanzania. *International journal for equity in health* 2015; **14**(1): 70.

98. Etters L, Goodall D, Harrison BE. Caregiver burden among dementia patient caregivers: a review of the literature. *Journal of the American Association of Nurse Practitioners* 2008; **20**(8): 423-8.

99. Lin IF, Fee HR, Wu HS. Negative and positive caregiving experiences: A closer look at the intersection of gender and relationship. *Family Relations* 2012; **61**(2): 343-58.

100. Chakrabarti S. Cultural aspects of caregiver burden in psychiatric disorders. *World Journal of Psychiatry* 2013; **3**(4): 85-92.

101. Bédard M, Pedlar D, Martin NJ, Malott O, Stones MJ. Burden in caregivers of cognitively impaired older adults living in the community: methodological issues and determinants. *International Psychogeriatrics* 2000; **12**(3): 307-32.

102. Adams B, Aranda MP, Kemp B, Takagi K. Ethnic and gender differences in distress among Anglo American, African American, Japanese American, and Mexican American spousal caregivers of persons with dementia. *Journal of Clinical Geropsychology* 2002; **8**(4): 279-301.

103. Sutherland N, Ward-Griffin C, McWilliam C, Stajduhar K. Structural impact on gendered expectations and exemptions for family caregivers in hospice palliative home care. *Nursing Inquiry* 2017; **24**(1).

104. Sutherland N, Ward-Griffin C, McWilliam C, Stajduhar K. Gendered Processes in Hospice Palliative Home Care for Seniors With Cancer and Their Family Caregivers. *Qualitative Health Research* 2016; **26**(7): 907-20.

105. WHO. Global strategic directions for strengthening nursing and midwifery, 2016–2020. Geneva, Switzerland: World Health Organization, 2016.

106. Wu LT, Low MM, Tan KK, Lopez V, Liaw SY. Why not nursing? A systematic review of factors influencing career choice among healthcare students. *International nursing review* 2015; **62**(4): 547-62.

107. Rudner N, Kung YM. An Assessment of Physician Supervision of Nurse Practitioners. *Journal of Nursing Regulation* 2017; **7**(4): 22-9.

108. Lippa RA, Preston K, Penner J. Women's representation in 60 occupations from 1972 to 2010: more women in high-status jobs, few women in things-oriented jobs. *PloS one* 2014; **9**(5): e95960.

109. Aiken LH, Clarke SP, Sloane DM, Sochalski J, Silber JH. Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *Jama* 2002; **288**(16): 1987-93.

110. Kalita A, Zaidi S, Prasad V, Raman V. Empowering health personnel for decentralized health planning in India: The Public Health Resource Network. *Human resources for health* 2009; **7**(1): 57.

111. Perry C. Empowering primary care workers to improve health services: results from Mozambique's leadership and management development program. *Human resources for health* 2008; **6**(1): 14.

112. Friganovic A, Kovacevic I, Ilic B, Zulec M, Kriksic V, Grgas Bile C. Healthy Settings in Hospital - How to Prevent Burnout Syndrome in Nurses: Literature Review. *Acta clinica Croatica* 2017; **56**(2): 292-8.

113. Cheung T, Lee PH, Yip PSF. Workplace Violence toward Physicians and Nurses: Prevalence and Correlates in Macau. *International journal of environmental research and public health* 2017; **14**(8).

114. Cheung T, Yip PS. Workplace violence towards nurses in Hong Kong: prevalence and correlates. *BMC public health* 2017; **17**(1): 196.

115. Atakro CA, Ninnoni JP, Adatara P, Gross J, Agbavor M. Qualitative Inquiry into Challenges Experienced by Registered General Nurses in the Emergency Department: A Study of Selected Hospitals in the Volta Region of Ghana. *Emergency medicine international* 2016; **2016**: 6082105.

116. Rodwell J, Brunetto Y, Demir D, Shacklock K, Farr-Wharton R. Abusive supervision and links to nurse intentions to quit. *Journal of nursing scholarship : an official publication of Sigma Theta Tau International Honor Society of Nursing* 2014; **46**(5): 357-65.

117. Whitman MV, Halbesleben JR, Shanine KK. Psychological entitlement and abusive supervision: political skill as a self-regulatory mechanism. *Health care management review* 2013; **38**(3): 248-57.

118. Jackson D, Clare J, Mannix J. Who would want to be a nurse? Violence in the workplace--a factor in recruitment and retention. *Journal of nursing management* 2002; **10**(1): 13-20.

119. National Academies of Sciences E, Medicine, Policy, et al. The National Academies Collection: Reports funded by National Institutes of Health. In: Benya FF, Widnall SE, Johnson PA, eds. Sexual Harassment of Women: Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine. Washington (DC): National Academies Press (US)

Copyright 2018 by the National Academy of Sciences. All rights reserved.; 2018.

120. Hsu HY, Chen SH, Yu HY, Lou JH. Job stress, achievement motivation and occupational burnout among male nurses. *Journal of advanced nursing* 2010; **66**(7): 1592-601.

121. Dey A, Shakya HB, Chandurkar D, et al. Discordance in self-report and observation data on mistreatment of women by providers during childbirth in Uttar Pradesh, India. *Reproductive health* 2017; **14**(1): 149.

122. Raj A, Dey A, Boyce S, et al. Associations Between Mistreatment by a Provider during Childbirth and Maternal Health Complications in Uttar Pradesh, India. *Maternal and child health journal* 2017; **21**(9): 1821-33.

123. Wood K, Jewkes R. Blood blockages and scolding nurses: barriers to adolescent contraceptive use in South Africa. *Reproductive health matters* 2006; **14**(27): 109-18.

124. Jewkes R, Abrahams N, Mvo Z. Why do nurses abuse patients? Reflections from South African obstetric services. *Social science & medicine (1982)* 1998; **47**(11): 1781-95.

125. Roberts J, Sealy D, Marshak HH, Manda-Taylor L, Gleason P, Mataya R. The patient-provider relationship and antenatal care uptake at two referral hospitals in Malawi: A qualitative study. *Malawi medical journal : the journal of Medical Association of Malawi* 2015; **27**(4): 145-50.

126. McVicar A. Workplace stress in nursing: a literature review. *Journal of advanced nursing* 2003; **44**(6): 633-42.

127. Singh S. Urban poor women willing for institutional deliveries but health institutions a turn off: Delhi, India. *Proceedings of the 18th International Council of Women’s Health* 2010; (2010).

128. Sridharan S, Dey A, Seth A, et al. Towards an understanding of the multilevel factors associated with maternal health care utilization in Uttar Pradesh, India. *Global health action* 2017; **10**(1): 1287493.

129. Samnani A-K, Singh P. 20 Years of workplace bullying research: A review of the antecedents and consequences of bullying in the workplace. *Aggression and Violent Behavior* 2012; **17**(6): 581-9.

130. Tsugawa Y, Jena AB, Figueroa JF, Orav EJ, Blumenthal DM, Jha AK. Comparison of Hospital Mortality and Readmission Rates for Medicare Patients Treated by Male vs Female Physicians. *JAMA Intern Med* 2017; **177**(2): 206-13.

131. Bhan N, McDougal L, Raj A. Lady Medical Officer Availability and Maternal Health Care Utilization.

132. Kenendy M. Report: Japanese Medical School Deducted Points From Exam Scores Of Female Applicants. NPR. August 2, 2018.

133. Li X, Zhang X. Female doctors in China: challenges and hopes. *Lancet (London, England)* 2015; **386**(10002): 1441-2.

134. OECD. Stat Health Care Resources.

135. Ramakrishnan A, Sambuco D, Jagsi R. Women's participation in the medical profession: insights from experiences in Japan, Scandinavia, Russia, and Eastern Europe. *Journal of women's health (2002)* 2014; **23**(11): 927-34.

136. ROSSTAT. Labour. Table 6.5. NUMBER OF EMPLOYED BY SEX AND OCCUPATION in 2016, 2018.

137. Xiong C, Chen X, Zhao X, Liu C. Patient satisfaction and gender composition of physicians - a cross-sectional study of community health services in Hubei, China. *BMC health services research* 2018; **18**(1): 217.

138. Ageeva L, N Zabaturina, Konovka N, Lubova G, Melnikova T, etal. Men and Women in Russia 2016, 2016.

139. Jena AB, Olenski AR, Blumenthal DM. Sex differences in physician salary in us public medical schools. *JAMA Internal Medicine* 2016; **176**(9): 1294-304.

140. Grisham S. Medscape Physician Compensation Report 2017: Medscape, 2017.

141. Murphy E, Oesch D. The Feminization of Occupations and Change in Wages: A Panel Analysis of Britain, Germany and Switzerland, February 2015.

142. Butkus R, Serchen J, Moyer D, Bornstein S, Hingle S, al e. Achieving Gender Equity in Physician Compensation and Career Advancement: A Position Paper of the American College of Physicians. *Annals of Internal Medicine*.

143. Morrison RS, Jones L, Fuller B. The relation between leadership style and empowerment on job satisfaction of nurses. *Journal of Nursing Administration* 1997; **27**(5): 27-34.

144. Almost J, Spence Laschinger HK. Workplace empowerment, collaborative work relationships, and job strain in nurse practitioners. *Journal of the American Association of Nurse Practitioners* 2002; **14**(9): 408-20.

145. Manongi RN, Marchant TC. Improving motivation among primary health care workers in Tanzania: a health worker perspective. *Human resources for health* 2006; **4**(1): 6.

146. Minkler M, editor. Community Organizing and Community Building for Health and Welfare, 3rd Ed. Rutgers, NJ: Rutgers Press; 2012.

147. Prost A, Colbourn T, Tripathy P, Osrin D, Costello A. Analyses confirm effect of women's groups on maternal and newborn deaths. *Lancet (London, England)* 2013; **381**(9879): e15.

148. Prost A, Colbourn T, Seward N, et al. Women's groups practising participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis. *Lancet (London, England)* 2013; **381**(9879): 1736-46.

149. Parimi P, Mishra RM, Tucker S, Saggurti N. Mobilising community collectivisation among female sex workers to promote STI service utilisation from the government healthcare system in Andhra Pradesh, India. *J Epidemiol Community Health* 2012; **66 Suppl 2**: ii62-8.

150. Patel SK, Prabhakar P, Jain AK, Saggurti N, Adhikary R. Relationship between Community Collectivization and Financial Vulnerability of Female Sex Workers in Southern India. *PloS one* 2016; **11**(5): e0156060.

151. Pettifor A, Lippman SA, Selin AM, et al. A cluster randomized-controlled trial of a community mobilization intervention to change gender norms and reduce HIV risk in rural South Africa: study design and intervention. *BMC public health* 2015; **15**: 752.

152. Nagarajan K, Sahay S, Mainkar MK, Deshpande S, Ramesh S, Paranjape RS. Female sex worker's participation in the community mobilization process: two distinct forms of participations and associated contextual factors. *BMC public health* 2014; **14**: 1323.

153. Kuhlmann AS, Galavotti C, Hastings P, Narayanan P, Saggurti N. Investing in communities: evaluating the added value of community mobilization on HIV prevention outcomes among FSWs in India. *AIDS Behav* 2014; **18**(4): 752-66.

154. Blanchard AK, Mohan HL, Shahmanesh M, et al. Community mobilization, empowerment and HIV prevention among female sex workers in south India. *BMC public health* 2013; **13**: 234.

155. Vejella S, Patel SK, Saggurti N, Prabhakar P. Community Collectivization and Consistent Condom Use Among Female Sex Workers in Southern India: Evidence from Two Rounds of Behavioral Tracking Surveys. *AIDS Behav* 2016; **20**(4): 776-87.

156. Saggurti N, Mishra RM, Proddutoor L, et al. Community collectivization and its association with consistent condom use and STI treatment-seeking behaviors among female sex workers and high-risk men who have sex with men/transgenders in Andhra Pradesh, India. *AIDS Care* 2013; **25 Suppl 1**: S55-66.

157. Shaw D, Norman WV. A tale of two countries: women's reproductive rights in Ireland and the US. *Bmj* 2018; **361**: k2471.

158. Bandewar SV, Pitre A, Lingam L. Five years post Nirbhaya: Critical insights into the status of response to sexual assault. *Indian journal of medical ethics* 2018; **-**(-): 1-7.

159. Goss K, Heaney M. Organizing Women as Women: Hybridity and Grassroots Collective Action in the 21st Century. *Perspectives on Politics* 2010; **8**(1): 27-52.

160. Tripathy P, Nair N, Barnett S, et al. Effect of a participatory intervention with women's groups on birth outcomes and maternal depression in Jharkhand and Orissa, India: a cluster-randomised controlled trial. *Lancet (London, England)* 2010; **375**(9721): 1182-92.

161. Baqui AH, El-Arifeen S, Darmstadt GL, et al. Effect of community-based newborn-care intervention package implemented through two service-delivery strategies in Sylhet district, Bangladesh: a cluster-randomised controlled trial. *Lancet (London, England)* 2008; **371**(9628): 1936-44.

162. Kumar V, Mohanty S, Kumar A, et al. Effect of community-based behaviour change management on neonatal mortality in Shivgarh, Uttar Pradesh, India: a cluster-randomised controlled trial. *Lancet (London, England)* 2008; **372**(9644): 1151-62.

163. Saha S. Expanding health coverage in India: role of microfinance-based self-help groups. *Global health action* 2017; **10**(1): 1321272.

164. Saggurti N, Etal. Parallel Paper to be Submitted for Lancet Paper 4.

165. Hazra, Etal. Parallel Paper to be Submitted with Lancet Paper 4.

166. Brown LD, Tang X, Hollman RL. The structure of social exchange in self-help support groups: development of a measure. *Am J Community Psychol* 2014; **53**(1-2): 83-95.

167. Pattenden J. A neoliberalisation of civil society? Self-help groups and the labouring class poor in rural South India. *J Peasant Stud* 2010; **37**(3): 485-512.

168. Aruldas K, Kant A, Mohanan PS. Care-seeking behaviors for maternal and newborn illnesses among self-help group households in Uttar Pradesh, India. *J Health Popul Nutr* 2017; **36**(Suppl 1): 49.

169. Singh U. Self Help Groups and Women empowerment: Appraisal of Drang Block in Mandi District of HP; 2017.

170. Khatibi FS, Indira M. Empowerment of Women through Self Help Groups and Environmental Management: Experiences of NGOs in Karnataka State, India. *Journal of Human Ecology* 2011; **34**(1): 29-40.

171. Saggurti N, Atmavilas Y, Porwal A, et al. Effect of health intervention integration within women's self-help groups on collectivization and healthy practices around reproductive, maternal, neonatal and child health in rural India. *PloS one* 2018; **13**(8): e0202562.

172. Campbell C. Community mobilisation in the 21st century: Updating our theory of social change? *Journal of Health Psychology* 2014; **19**(1): 46-59.

173. Heymann J, Levy J, Bose B, Etal. Improving health with programmatic, policy, and governance approaches to reducing gender inequality and changing restrictive gender norms. *Lancet* 2018.

174. Percival V, Dusabe-Richards E, Wurie H, Namakula J, Ssali S, Theobald S. Gender Blind: Rebuilding Health Systems in Conflict Affected States. *Globalization and Health* 2018.

175. Percival V, Richards E, MacLean T, Theobald S. Health systems and gender in post-conflict contexts: building back better? *Conflict and Health* 2014; **8**(1): 19.

176. WHO. Everybody's Business: Strengthening Health Systems to Improve Health Outcomes. Geneva: World Health Organization; 2007.

177. Shabalala F, De Lannoy A, Moyer E, Reis R. Rethinking the family in the context of care for adolescents living with HIV in Swaziland. *AIDS care* 2016; **28 Suppl 4**: 8-17.

178. Shabalala FS, Vernooij E, Pell C, et al. Understanding reasons for discontinued antiretroviral treatment among clients in test and treat: a qualitative study in Swaziland. *Journal of the International AIDS Society* 2018; **21 Suppl 4**: e25120.

179. Kennedy CE, Baral SD, Fielding-Miller R, et al. "They are human beings, they are Swazi": intersecting stigmas and the positive health, dignity and prevention needs of HIV-positive men who have sex with men in Swaziland. *Journal of the International AIDS Society* 2013; **16 Suppl 3**: 18749.

180. Fielding-Miller R, Mnisi Z, Adams D, Baral S, Kennedy C. "There is hunger in my community": a qualitative study of food security as a cyclical force in sex work in Swaziland. *BMC public health* 2014; **14**: 79.

181. Central Statistical Office/Swaziland, Macro International. Swaziland Demographic and Health Survey 2006-07. Mbabane, Swaziland: Central Statistical Office/Swaziland and Macro International, 2008.

182. Ulandssekretariatet. Swaziland - Labor Market Profile 2012. Helsinki, Denmark, 2012.

183. MoHS. Policy for community health workers in Sierra Leone. Freetown, Sierra Leone: Government of Sierra Leone, 2016.

184. WHO. The 2016 update, Global health workforce statistics. Geneva, Switzerland: WHO; 2016.

185. OECD. OECD Health Statistics 2017. 2017.

186. OECD. SIGI methodological background paper: OECD Development, 2014.

187. World Economic Forum. The Global Gender Gap Report 2017. Geneva, Switzerland: World Economic Forum, 2017.

188. International Labour Organization (ILO). ILOSTAT. 2018.

189. WHO, UNICEF, UNFPA, World Bank Group, and the Population Division of UNDESA. Trends in Maternal Mortality: 1990 to 2015. Geneva, Switzerland: WHO, 2015.

190. UNICEF, the World Health Organization, the World Bank Group, and the Population Division of UNDESA. Levels and Trends in Child Mortality: Report 2015. New York: UNICEF, 2015.

191. World Bank. World Bank Open Data. 2017. <http://data.worldbank.org/> (accessed October 20 2017).

192. Hogan DR, Stevens GA, Hosseinpoor AR, Boerma T. Monitoring universal health coverage within the Sustainable Development Goals: development and baseline data for an index of essential health services. *Lancet Glob Health* 2018; **6**(2): e152-e68.