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Sanitation and Hygiene Applied Research for Equity

Promoting gender equality through improved monitoring, capacity building and research partnerships

Reflections from the SHARE programme

Credit: Tracy Morse ©

Student in Malawi

Executive Summary

This paper share insights for improving equitable programming through documenting the gender monitoring approach used by the Sanitation and Hygiene Applied Research for Equity (SHARE) research programme. It also highlights challenges relating to gender equity in academia in SHARE's focus countries: Kenya, Malawi, Tanzania and Zambia.

This paper is targeted at research programme implementers, academic institutions and donors that wish to effectively monitor gender and improve their approach to gender equity.

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Acronyms

DFID: Department for International Development (UK Government)

HICs: High income countries

LSHTM: London School of Hygiene and Tropical Medicine

LMICs: Low and middle-income countries

MDG: Millennium Development Goals

SDG: Sustainable Development Goals

SHARE: Sanitation and Hygiene Applied Research for Equity

STEM: Science, technology, engineering and medical

WASH: Water, Sanitation, and Hygiene

1. Introduction

Measuring gender equality in capacity development, research uptake and knowledge translation activities in institutions in low/middle income countries (LMICs) presents several challenges. This paper aims to address these challenges and share insights for improving equitable programming. It will do this through documenting a 2017 review of the Sanitation and Hygiene Applied Research for Equity (SHARE) programme's gender monitoring approach and sharing the findings from qualitative and quantitative monitoring data analysis on gender in academia in LMICs.

The SHARE programme contributes to achieving universal access to effective, sustainable and equitable sanitation and hygiene by generating evidence to improve policy and practice worldwide. It works with national and global partners to enable evidence-based improvements to the way they plan, implement and monitor their activities in the sector. SHARE has a focus on collecting gender-disaggregated data and using this data to ensure our activities are equitable. However, measuring gender equality in capacity development, research uptake and knowledge translation activities in institutions in low/middle income countries (LMICs) presents several challenges.

The paper looks at existing theory on gender equality, describes the global and national context, analyses logframe quantitative monitoring data, and analyses qualitative data on gender equality in academia.

2. Measuring empowerment and gender equality

There is a gender gap in academia on a global level; globally only 28% of researchers are female (UNESCO 2017). However empowerment and gender equality are not easy to measure, not least because empowerment is a complex and contested term (Kabeer 1999). Unterhalter (2017) notes that measurement is a particular challenge within the field of education, as 'many aspects of education defy measurement' (2). Proxy or composite indicators are often used to address the complexity of measuring social change (Carter et al 2014). These are usually informed by 'output level' numbers measuring the distribution of men and women (i.e. attending school or working in academia); this data may tell us what is happening but normally cannot address *how* or *why* questions.

Different understandings around empowerment mean that it is important to analyse assumptions around monitoring indicators with a 'critical need to triangulate…the evidence provided by an indicator in order to establish that it means what it is believed to mean' (Kabeer, 1999: 452). Other challenges include indicators focusing on individual outcomes (potentially ignoring community or structural level change) and recognising that empowerment may appear different across contexts (Kabeer 1999).

Additionally, it is rare for monitoring indicators to be informed by the voices of the women and girls who development projects prioritise or target. Focusing on upwards accountability means that it is often donors and implementers who define what empowerment is and how to measure it (Carter et al 2014). Indicators may therefore reflect the values of those doing the measuring – potentially differing from how women themselves would define empowerment or missing contextual nuance (Kabeer 1999). Given the history of power imbalances and exclusion of women around the world, this is a clear limitation on indicators used to monitor gender equality (Unterhalter et al 2017).

There is a long tradition of composite indicators (such as the Gender Development Index) focusing on gender parity, especially in relation to large scale projects – such as the Millennium or Sustainable Development Goals (MDGs/SDGs) (UNDP 2017). However, this approach may over-simplify gender equality and quantitative indicators may have an implicitly binary view of gender, excluding issues regarding gender identity or human rights (Unterhalter 2017).

The application of theoretical frameworks can assist in understanding the less measurable parameters of gender equality. One framework is the four powers approach which conceptualises four dimensions of power; *power-over, power-to, power-within* and *power-with* (Rowlands 1995). *Power-over* refers to the structural power relationships within society and institutions. *Power-to* refers to individual agency. *Power-with* refers to the possibility of individuals acting collectively to influence or shift structural power relations. *Power-within* refers to resilience or the psychological strength of individuals. This framework can be used to analyse

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whether indicators capture each dimension of power adequately.

Figure 1: The four powers framework

Power-over	Power-to
Power-within	Power-with
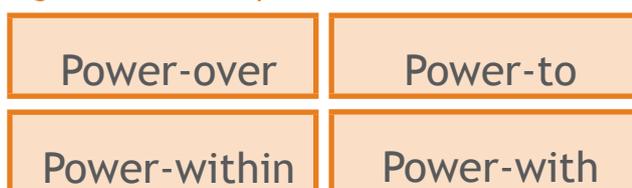
Contextual analysis can inform what dimensions of power mean in particular settings but is often missed; an Overseas Development Institute (ODI) review of 70 evaluations on women's economic empowerment found that under 25% of the studies included an analysis of contextual gender norms and gender inequality dimensions (ODI 2014). Gender analysis is particularly valuable for informing *power-over* to understand the societal norms that shape power relations.

Traditional output indicators often monitor women's *power-to* learn a new skill, gain new knowledge or do something differently, perhaps by counting the number of women participating in project activities (Carter et al 2014). This data can be triangulated by analysis of whether women have been able to act upon or apply the new skill/knowledge.

Research on women participating in development projects found that they valued *power-within* the most and valued qualitative data over numbers (Carter et al 2014). This suggests that qualitative and open-ended research methods can play an important role in capturing expected and unexpected outcomes for women's empowerment by directly asking those involved (Carter et al 2014).

3. Gender in context

Gender analysis may help us to better understand *power-over* and the structural context that women researchers in SHARE live and work in. This section will provide contextual analysis using global and national data.

An analysis of over 5 million research papers found that women account for just under 30% of authors on collaborative papers across disciplines (Larivière et al 2013). For every paper published with a woman as first author, there are almost two published with a male first author (Larivière et al 2013) papers with women as first authors receive fewer citations (Larivière et al 2013).

The gender gap is exacerbated for particular subjects with a stronger bias towards men working in science, technology, engineering and medical (STEM) subjects (UNESCO 2017). Additionally, a recent analysis on high income countries (HICs) found that women researchers collaborate less internationally than men and are less likely to be first authors in already under-represented fields such as STEM (Elsevier 2017).

There are limited studies on African gendered publishing, and even fewer analyse the reasons behind this inequality. A 2007 analysis in Tanzania found that women had a lower rate of publications

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Food security research in Kenya

than men but lacked supporting data on why (Mwaipopo 2011). This section draws on what little literature there is on this topic, using research from African contexts where possible, to describe several contributing factors to gender inequality: gender norms, expectations and stereotypes, structural barriers, access to networks, role models and sexual harassment.

Gender norms, expectations and stereotypes

Gender norms, expectations and stereotypes are held by men and women and can lead to unconscious bias in recruitment/promotion practices. Universities are 'institutions that produce and transmit culture' and can therefore play a role in promoting gender equality or perpetuating existing inequalities (Mama 2009). Gender norms differ according to context and could include societal perceptions that women have limited capability to undertake research or expectations that women in academia should also manage household work and childcare responsibilities (INASP 2015, Raburu 2015). There may be expectations that women take on 'nurturing' or caring roles within their academic work, through focusing on teaching, student support or administration (Mama 2009). Perceptions that it is not appropriate for women to conduct field visits or take business trips could reduce their role in research projects and affect progression (INASP 2017b).

Access to networks and role models

Another common challenge is lack of networks with other women researchers, particularly in LMICs (INASP 2017a). Workshops in Tanzania reported a lack of female mentors/role models at senior levels (INASP 2017a). This links with structural barriers preventing women from reaching senior levels in academia, and may also perpetuate gender norms. Access to networks often emerges as a key benefit of women's leadership and professional development programmes (USAID 2011). A study in Tanzania found that gendered beliefs about relationships meant it was sometimes seen as inappropriate for senior male staff to mentor women - potentially disadvantaging women further (Mwaipopo 2011).

Sexual harassment

This is a global issue in higher education institutions and may prevent women from pursuing or continuing academic careers. Research in Tanzania, Kenya and Ghana found perceptions that women progress in academia because they have used their sexuality to influence male colleagues (Morley 2011, Raburu 2015). This may result in women being taken less seriously than male counterparts and reputational concern for women who succeed or progress in academia (Morley 2011).

4. Gender in SHARE

4.1 Quantitative data

All four countries in SHARE are in the bottom 30 of the United Nations Development Programme Gender Inequality Index (UNDP 2016). Additionally, each country has low percentages of women working in academia, illustrated in Figure 2.

Figure 2: Percentage of researchers who are women in SHARE focus countries (UNESCO 2017)
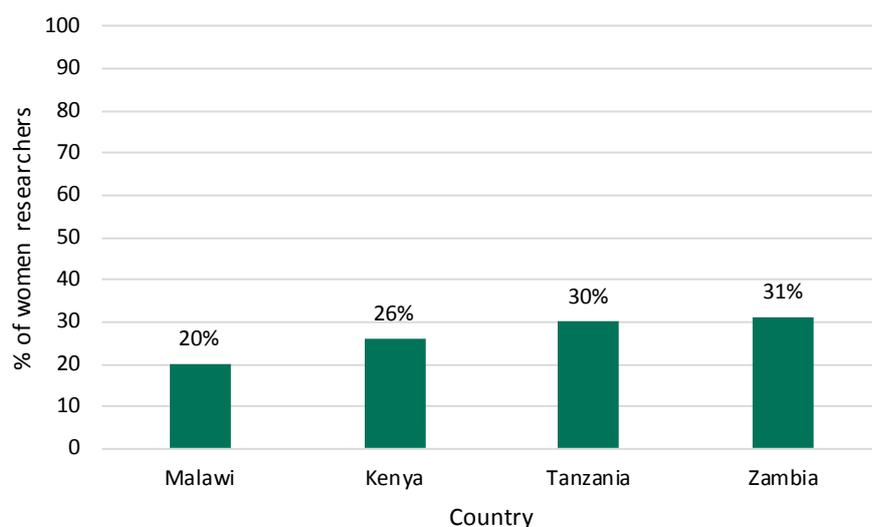
This is useful for contextualising SHARE's progress against gender targets. SHARE has three quantitative indicators which specifically monitor gender, shown in Table 1.

Table 1: SHARE's gender indicators

Indicator	Target
1.1.3 Number and % of female authors of peer reviewed publications	50%
2.2.1 Number of attendees at knowledge sharing events (disaggregated by gender)	No gender target
3.1.1 Number of attendees at training events (disaggregated by gender)	No gender target

These targets focus on achieving gender parity, i.e. 50/50 authorship of publications. SHARE also monitor the number and percentage of authors from LMIC and HIC – which can further disaggregate gender data. Quantitative data can inform us about women's participation in academia, their career development (i.e. through becoming first author or co-authoring papers) and new skills such as scientific writing. However, quantitative data cannot provide rich information about what it means to have more women attending events or accessing training, and whether this contributes towards longer term change in the water, sanitation and hygiene (WASH) sector or in academic institutions.

Applying the four powers framework to SHARE's gender monitoring indicators suggests that we are focusing on power-to and power-with but could improve our understanding of power-over and power-within.

Figure 3 illustrates that 42% (237/561) authors on SHARE Phase I papers are female; this is high in comparison with the global figures on women's participation in academia mentioned previously (Larivière et al 2015).

Figure 3: Percentage of all SHARE paper authors by gender (n=561)

■ Men ■ Women
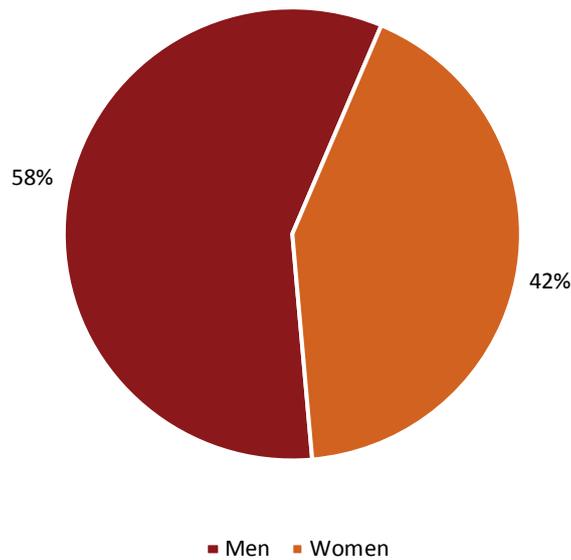
This analysis of all authors does not account for the prestigious position of first author on a journal paper; Figure 4 reflects this distinction.

Figure 4: Percentage of lead authors by gender and country income (n=91)

■ HIC men ■ HIC women ■ LMIC men ■ LMIC women
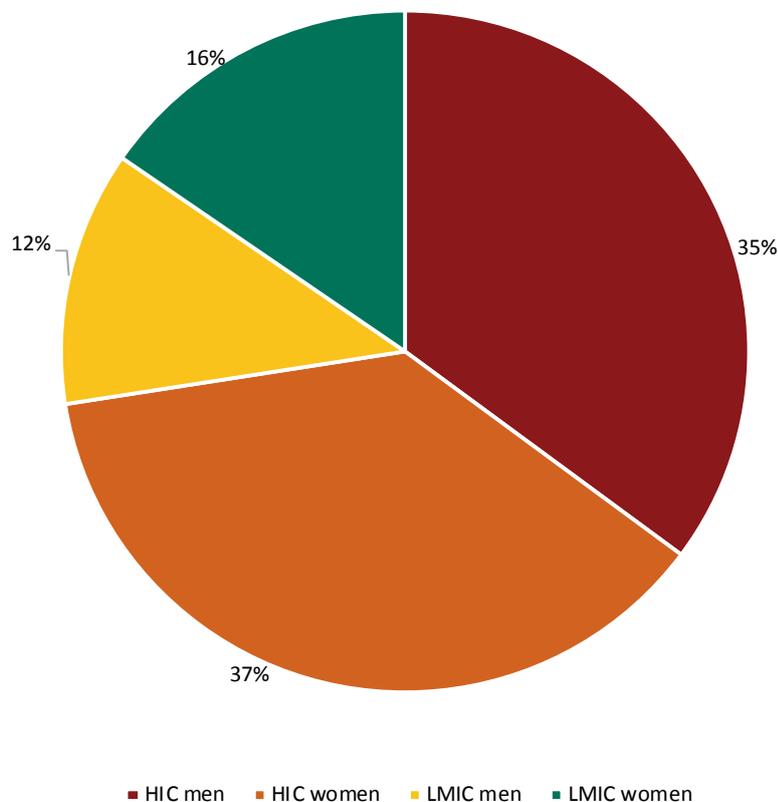
Figure 4 illustrates that the biggest gap in lead authors within SHARE's papers is not gender, but is between HICs and LMICs. Most lead authors (70%) and most female lead authors (37%) are from HICs. In total 27 publications, or 28% of publications have a lead LMIC author of which 16% are female. Figure 4 shows a fairly even

split by gender with a difference of around 6% in favour of female authors. It is positive to note that 53% of publications have a lead female author. This suggests that SHARE's efforts to support and include female academics have been successful - although more needs to be done within LMIC settings to promote, encourage and support female academics.

SHARE has committed to address the disparity in lead authorship of SHARE research through partnering only with LMIC academic institutions in SHARE's second phase to help close the gap for LMIC authors.

4.2. Qualitative data

Given the challenges documented at the global level, it is likely that some of the issues mentioned may be relevant to women working on SHARE projects. In May 2017 SHARE carried out a qualitative survey to understand how partner staff (both men and women) perceive barriers to working in academia in LMICs.

Seventeen people completed the survey; nine academic staff, two MSc students/recent MSc graduates, one PhD student, three Research Fellows and two members of administrative staff. The demographic by gender was eleven women and five men. There was representation from Malawi, Zambia and Kenya, but there were no survey responses from Tanzania.

The survey results present a snapshot on perceptions of gender within SHARE consortium partners; the small number of responses does not provide us with enough evidence to draw consortium-wide conclusions. The results offer insight into perceptions on gender in science and some of the factors that affect people's power-within to progress their careers.

Motivations and barriers for working in science

The survey asked who or what inspired respondents to take up a career in science. Answers included a teacher (n=8), a scientific breakthrough (n=3), a relative (n=2) and other reasons (n=8). Other reasons included family friends, lecturers and frustrations with the healthcare system. Figure 5 depicts these responses.

Team training at MEIRU, Malawi

Figure 5: Who or what inspired you to take up a career in science? (n=17)

- Teacher - Relative - Scientific breakthrough - Other
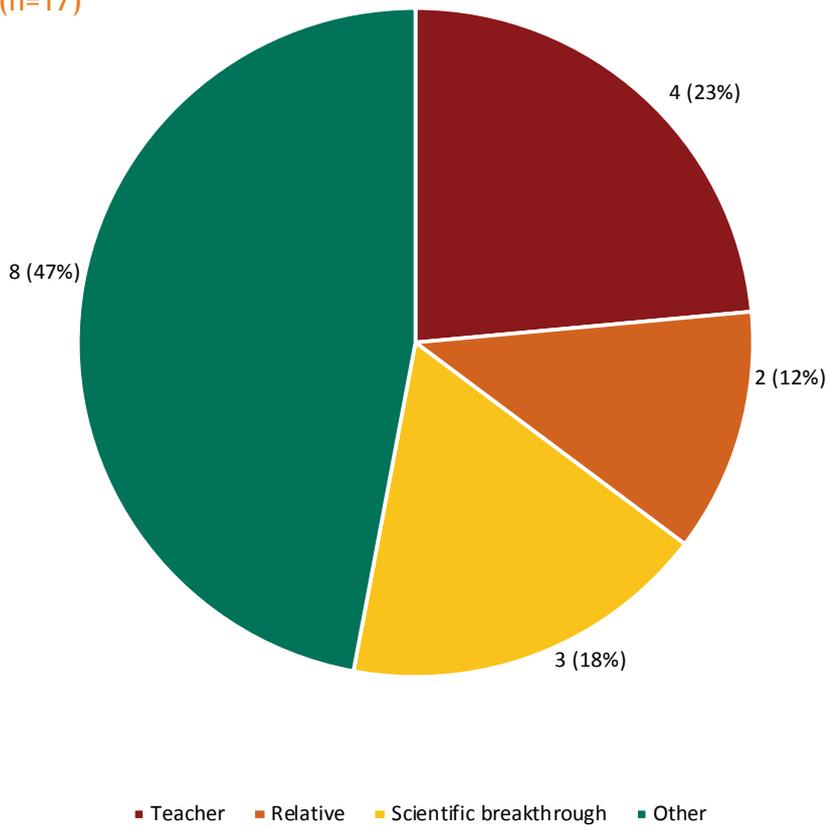
Figure 6 depicts the answers that respondents gave when asked to disclose the barriers (if any) that they personally experienced working in science.

Figure 6: Barriers to working in science.
Q: Which of these barriers (if any) have you personally experienced?

(responders could select multiple answers)
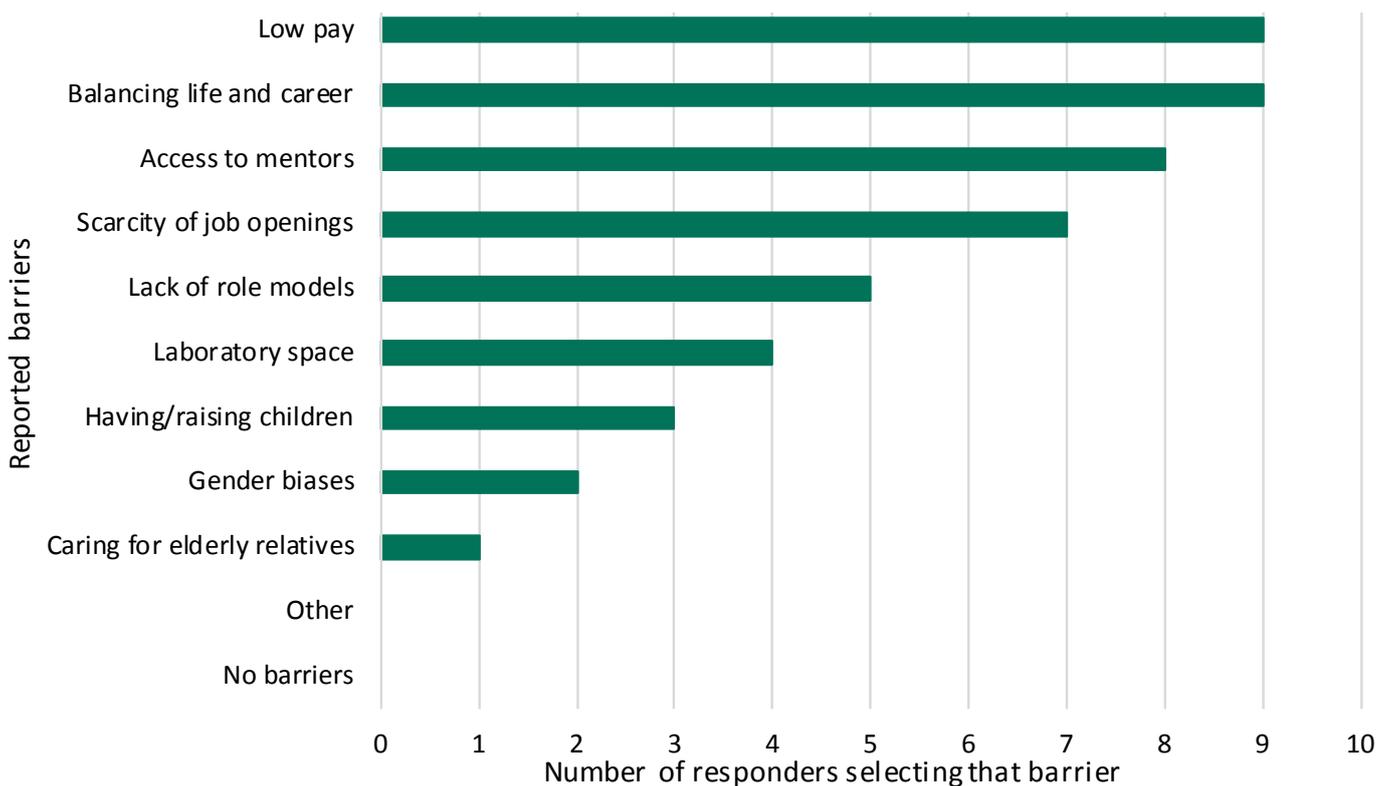
The key barriers selected were balancing life and career (n=9) as well as low pay in the academic sector (n=9). Another reported barrier related to inability to access mentors and role models (n=13). This is something that SHARE seeks to support through capacity development work but is clearly still a challenge. Practical challenges such as access to laboratory space and scientific equipment were also mentioned (n=4), with one responder noting the logistical challenges of acquiring research supplies in LMICs. Some participants mentioned challenges around responsibilities such as child-care and looking after elderly relatives, which links into the theme of work/life balance (n=4). Two participants, both women, felt that gender bias was a barrier to their careers in science.

Demographics of research teams

When asked about the percentage of women in their research teams, participants said this ranged from between **3 – 75%** with an average of **47%**. This demonstrates the broad range of team demographics, depicted in Figure 7. Answers to this question are an estimate made by individuals – verification would require employment data at the institutional level. Gender equality schemes such as Athena Swan normally require disaggregation of staff demographics, roles and salaries by gender. This activity is outside SHARE's remit as a research consortium - but may be something that partner institutions consider in future.

Research teams for SHARE projects are generally cross-disciplinary spanning engineering, statistics, epidemiology, biomedicine, public health and social science. A key recruitment consideration is finding skilled nationals to bridge the gap in science between HIC and LMIC researchers, and to build national/institutional capacity.

Figure 7: Range of estimated % of women in research teams
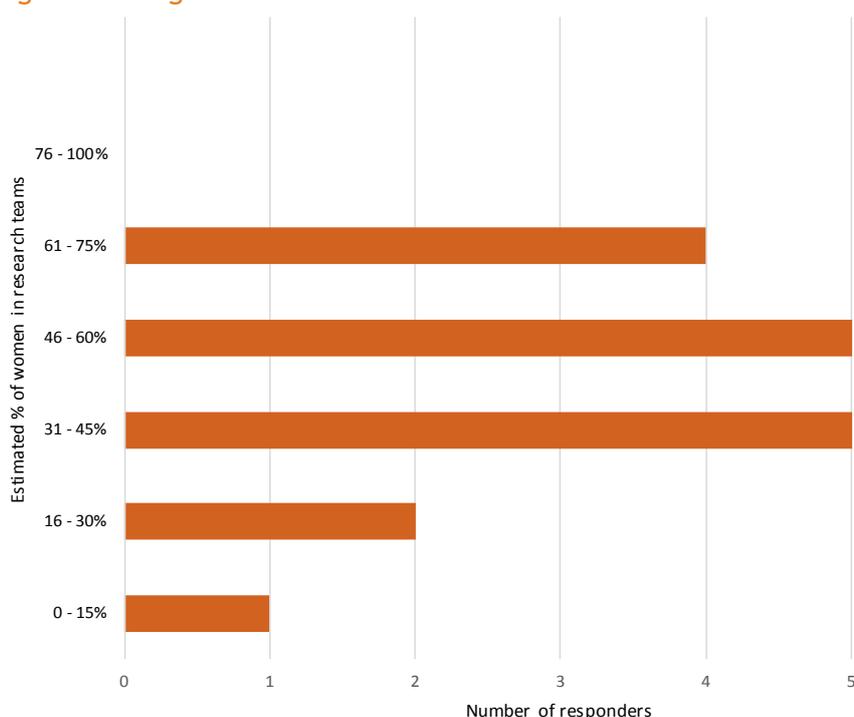
Opportunities for professional development

Limited or inaccessible development opportunities, particularly in LMIC's, can contribute to perpetuating existing inequities in academia. The majority of survey responders reported they did have opportunities for professional development within their institutions, depicted in Figure 8.

Figure 8: Opportunities for career development.
Q: Does your institution provide you with opportunities to develop your career? (n=17)

■ Yes   ■ No   ■ Not Sure
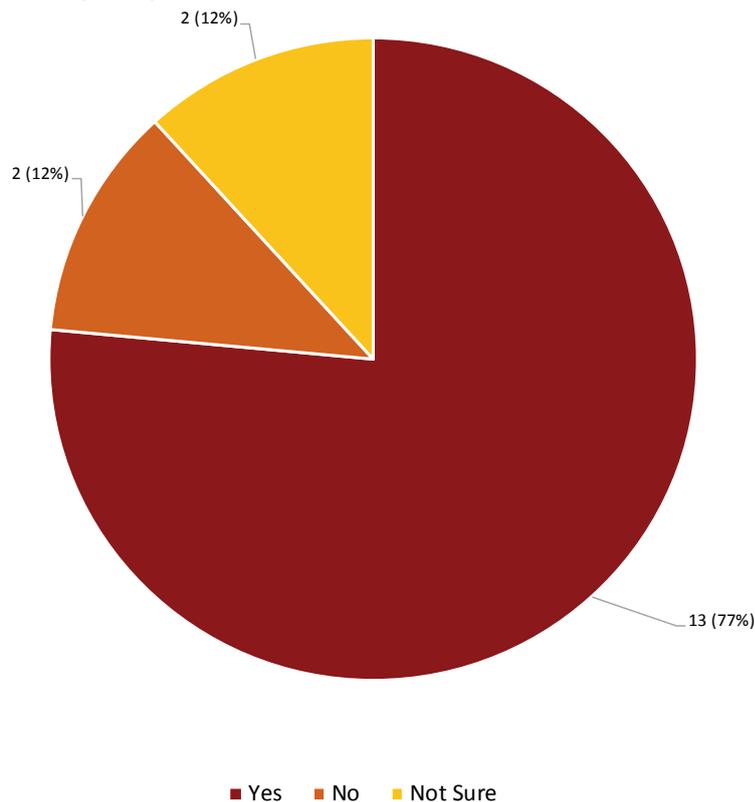
Some respondents noted the specific types of support they had received including mentorship from senior staff in their institutions (n=2), in house training (n=1), and government sponsored training (n=1). When asked if they had opportunities to develop professional/scientific skills through SHARE 83% of respondents (n=14) responded yes (Figure 9). Examples included attending a scientific writing workshop (n=2), gaining new laboratory technical skills (n=1) and networking with global experts (n=1).

Figure 9: Development opportunities through SHARE
Q: Have you have any opportunities to develop your professional or scientific skills through the SHARE programme? (n=12)

3 (18%)

14 (82%)

■ Yes ■ No
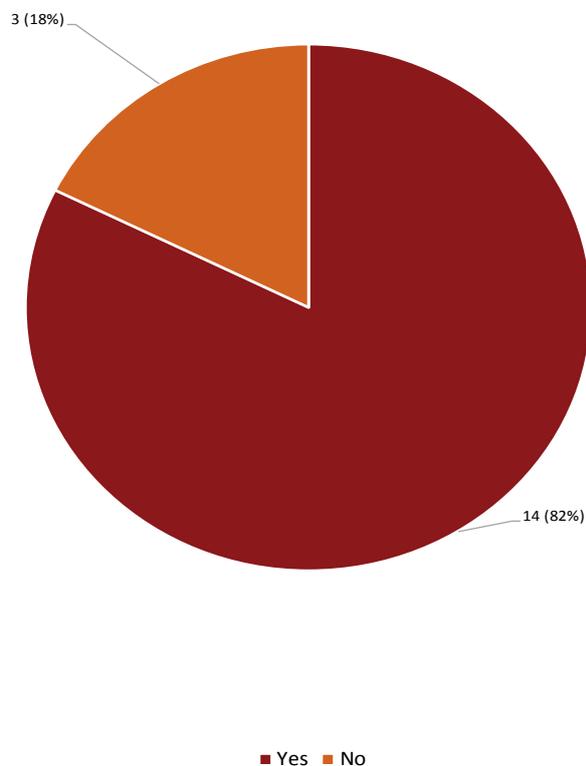
Perceptions of gender in science

Most respondents stated that they felt their gender had no impact on their career as a scientist (71%, n=12). Most respondents said that they would be equally likely to advise men or women to pursue a career in science (88%, n=15). Individual responses regarding how gender has affected their careers were only from women (perhaps suggesting that the men surveyed did not see gender as a factor in

their careers) and included the following examples:

• A female academic staff member stating that she believes her gender may have increased her chances of becoming a part of SHARE; perhaps in reference to SHARE's explicit focus on including women in science.

• A female academic staff member stated that lack of respect from male counterparts affects her work.

• A female academic staff member stated that she does not think that she would have progressed differently had she been a man.

• A female research fellow stated that she feels pressure and judgement from society about pursuing higher education while also wanting to start a family. She noted that women pursuing academic careers in her context often experience issues with work/life balance.

• A female MSc graduate stated that there should be more specific opportunities to advance the scientific careers of women.

Discussion from gender workshop

The survey results were shared at the SHARE consortium annual meeting in June 2017, providing an opportunity to discuss these challenges as a group. The discussion ranged across several key themes; the constraints of working in academia, unconscious bias and organisational policies.

SHARE partners noted restrictions of academia including age requirements on grants which mean staff have to make difficult choices about progressing their career, starting a family or trying to do both. The project driven nature of academia and short-term contracts also came up as a key barrier to job security which also affects work/life balance. Low pay for academic roles in LMIC countries was noted as a key challenge which can make it hard to start a family and to cover costs such as childcare. It was also noted that the challenges of a demanding research career apply to everyone but are exacerbated in low income contexts and have a particular impact on women.

Unconscious bias was discussed as a key issue – WaterAid highlighted that they offer a course on this. The group discussed how particular disciplines are biased to different demographics, which can make it difficult to recruit from a diverse range of candidates. One respondent suggested that interventions for gender equality start at primary/secondary school to ensure professions are open to everyone and reduce inequalities later.

The Centre for Infectious Disease Research Zambia (CIDRZ) shared that they have HR policies such as positive discrimination to ensure that gender equality is considered. Maternity and paternity leave came up as a key challenge with staff noting that most countries do not offer paternity leave and women taking time off for maternity leave spend less time working than male counterparts, which potentially affects longer term career progression. Resource constraints in LMIC countries mean that organisations may find it difficult to offer family friendly policies and there is not always government support available.

Partners also discussed social norms noting that these often mean women are expected to do the majority of childcare. It was noted that even in contexts where more paternity leave is available (such as the UK) there are challenges around men utilizing this. Cultural norms were also discussed with one Tanzanian participant noting different expectations around travelling on business trips and staying late at work, with this seen as more negative for women than men.

6. Conclusion

Monitoring female authors on publications provides a good proxy indicator for understanding the extent of the gender gap in the science within SHARE's focus countries. Monitoring publications can help to understand the challenge of progression in academia - but increasing representation in publications alone will not solve broader issues around gender inequality.

The contextual data available raises questions about how realistic it is to achieve gender parity in academia in low and middle-income contexts. It is positive to note that SHARE has achieved greater gender parity on publications than is typical globally. While SHARE has exceeded the national average percentage of women engaged in academia globally (of 28%), there remains an uneven split between LMIC and HIC authors. The SHARE consortium seeks to increase and improve the inclusion of LMIC authors, with a focus on women. SHARE's targets align with the SDGs targets around gender equality, but future research programmes may wish to consider aligning their targets with women's current participation in academia in their focus countries, and seeking to improve upon this reality.

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