

Provision of Personal Protective Equipment and Sanitary Facilities to Female Construction Workers

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Abstract

The health and safety of women in construction in the form of the provision of personal protective equipment (PPE) and sanitary facilities to female workers in South Africa was explored in this study. This specific focus is largely overlooked in the South African context. The study explored, through a qualitative approach, the perspectives and experiences of female construction workers (end-user) on the provisions of sanitary and personal protective equipment. The main source of data collection was through semi-structured interviews and further supported with site observations to triangulate the interview responses. The key findings of the study revealed that the availability of PPE for females in the certain parts of the construction industry in South Africa has improved as women are provided with female size PPE. However, quality and advanced gender sensitive PPE still needs attention. Sanitary facilities at established sites are generally up to standard. However, female workers still share these facilities with their male counterparts. Sanitary facilities at unestablished sites still need attention. Participation of women in construction will struggle to increase, as long as these issues persist.

Keywords

Equality, Construction, Female, Health and Safety.

1. Introduction

The specific needs of individuals should be considered, in relation to personal protective equipment (PPE) and sanitary facilities, that are sized and designed precisely, for a workforce that is increasingly made up of women (Hsiao et al., 2016; Milligan, 2019; Oo and Lim, 2020). Through a scientometric review and meta-analysis of publications on the health and safety for women in construction, Mariam et al., (2021) found that the USA, South Africa and Australia had conducted more research on women's health and safety in construction than other countries. There were, however, only four publications per country for South Africa and Australia. There is thus a scarcity of research in the South African context on health and safety provisions for women working in construction.

Personal protective equipment (PPE) is designed to protect the body and is worn for protection against health and safety hazards within the work environment (Wagner et al., 2013). The safety-oriented design and production of PPE are critically important for the protection of all workers regardless of their gender, age or disability (Hsiao et al., 2016; Milligan, 2019; Oo and Lim, 2020). Studies have found that the poor provision of personal protective equipment emphasise the anthropometric differences that lead to ill-fitting PPE. (Hsiao et al., 2016; Milligan, 2019), that may allow hazardous material to come in contact with the user of the PPE (Mohd Amir Shazwan and Ee, 2018). Protective gear including fall protection harnesses are often too large and require adjustments to fit women and may hook on to objects on site (Cannon and Shah, 2019). Providing PPE that is tailor-made for women in the construction workforce is critical for ensuring their safety and providing an inclusive environment that promotes their well-being and success (Cannon and Shah, 2019; Milligan, 2019).

Recent studies have also recognized that the health burden associated with absent or poor sanitation facilities falls disproportionately on women (Winter and Barchi, 2016). Ness (2012); Thenguzhali and Veerachamy (2015) and Wong et al., (2020) argue that many of the problems that female construction workers face, are made more severe than in other industries by the construction industry's temporary, dynamic, and decentralized nature. Temporary

sanitary facilities at construction sites are usually unisex without privacy and not well maintained (Ojo et al., 2019). Women have, thus, been inhibited access to sanitary facilities at construction sites (Ojo et al., 2019).

There is not enough research on gender sensitive health and safety in construction, especially from the local context of South Africa. Furthermore, there is not enough research, highlighting the problem from an end-user perspective. Based on this gap, there is need to collect more data from the field, directly from the workers, to further explore this area. Figure 1 below demonstrates the study's perspective of determining whether the female construction site workers' health and safety provisions of personal protective equipment and sanitary facilities are gender sensitive.

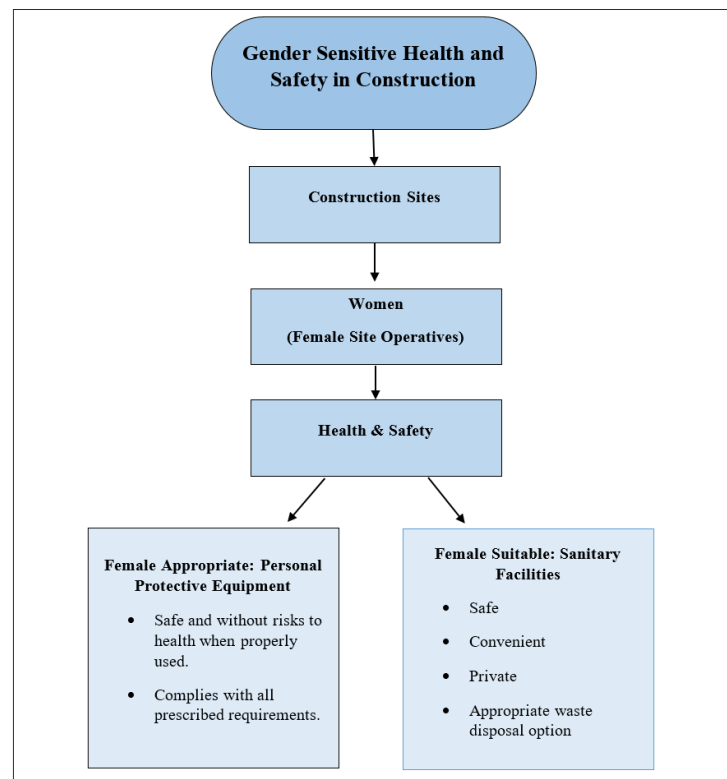


Figure 1. Research Standpoint *Source: Researcher's Own*

1.1 Research Question

What are the experiences and perceptions of female construction site workers regarding the provision of personal protective equipment and sanitary facilities on sites?

1.2 Research Objectives

- To establish the perceptions of female construction workers, in certain South African construction companies, on the adequacy and appropriateness of personal protective equipment and sanitary provisions on site.
- To investigate the experiences of female construction workers, in certain South African construction companies, in utilizing personal protective equipment and sanitary facilities on site.
- To propose possible improvements to the provisions of personal protective equipment and sanitary facilities, from the perspective of the female construction workers.

2. Literature Review

Relevant literature for this study was only sourced from journals and conference papers, as these are considered more reliable sources of literature review and provide detailed information compared to other sources (Mariam et al., 2021). This literature covered: Construction science and technology, Occupational health and safety, Women in construction,

Personal protective equipment & Sanitary facilities. The age range of the literature was mainly between 2018 and 2021, with a few 2017 and older. The significant themes identified using the theoretical framework of the study were: (1) Health and safety issues in the construction industry, (2) Health and safety problems for women in construction, (3) Personal protective equipment for women in construction and sanitary facilities for women in construction. These themes are elaborated on below:

2.1 Health and Safety Issues in the Construction Industry

Occupational health is defined as, the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations (Hooda and Mehta, 2020). The Occupational Health and Safety Act (1993) in Section 8, states that, “Every employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of his employees”. These duties include; “taking such steps as may be reasonably practicable to eliminate or mitigate any hazard or potential hazard to the safety or health of employees, before resorting to personal protective equipment” and “providing such information, instructions, training and supervision as may be necessary to ensure, as far as is reasonably practicable, the health and safety at work of his employees; enforcing such measures as may be necessary in the interest of health and safety”

Given its temporary, dynamic, and decentralized nature, the high number of fatal and nonfatal occupational injuries and work-at-heights, outdoor operations and complicated on-site plants, construction is one of the most hazardous and accident-prone activities (Ness, 2012; Thenguzhali and Veerachamy, 2015; Wong et al., 2020). At a worldwide level, the probability of a fatality and that of an injury in the construction industry are three times and two times more likely than the average in all other industrial sectors, respectively (Wong et al., 2020). South Africa is no exception to the poor health and safety record, that the global construction industry has (Legodi and Chelule, 2016). The possibility of a fatality is five times more likely than in a manufacturing industry, whereas the risk of a major injury is two and a half times higher (Hooda and Mehta, 2020). These statistics are worrying as, number of fatalities in the industry is disproportionate when compared to the size of the workforce and to other industries (Mroszczyk, 2015).

In addition to encountering general problems of health and safety in the construction sector even more severely than their male counterparts, women also face health and safety issues unique to them (Curtis et al., 2018). Poor and unhygienic working conditions also affect the health of the female workers (Sinha et al., 2017). Globally, 17% of all work-related fatalities are in the construction sector. So far as women construction workers are concerned their conditions are even worse (Thenguzhali and Veerachamy, 2015). Women have unique health and safety needs as construction work exposes them to high risks of injuries and fatalities (Mariam et al., 2021).

2.2 Personal Protective Equipment for Women in Construction

Section 10(1) of the of the Occupational Health and Safety Act (1993) reads, “Any person who designs, manufactures, imports, sells or supplies any article for use at work shall ensure, as far as is reasonably practicable, that the article is safe and without risks to health when properly used and that it complies with all prescribed requirements.” (Occupational Health and Safety Act, 1993, page 8). The safety-oriented design and production of PPE are critically important for the protection of all workers regardless of their gender (Oo and Lim, 2020). In the Table 1, Wong (2020) lists categories and functions of PPE/C commonly used in the construction industry:

Table 1. PPE/C commonly used in the Construction Industry
Source: Wong (2020)

PPE/C	Function
Safety helmet	Avoidance of head injury.
Eye protectors	Eye protection from dust, particles, flying chips, smoke and chemical splattering.
Ear protectors	Ear protection from high levels of noise.
Mask and respirator	Protection from inadequate oxygen supply, presence of toxic gases, harmful particles and virus in the air.
Protective gloves	Avoidance of hand injury.
Safety belts	Fall protection for working at heights
Safety footwear	Avoidance of foot injury and slipping on wet floors
Protective clothing	Physical protection and increase of comfort levels

Everyone, from managers to frontline workers must use personal protective equipment (PPE) when they walk onto a construction work site (Hsiao et al., 2016). PPE needs to be individually adapted, and that it must meet the specific needs and characteristics of each end-user including man, woman, young worker as well as people with disabilities (Oo and Lim, 2020). Improperly fitting PPE could lead to serious injuries or death. As it would allow hazardous material to come in contact with the user of the personal protective equipment (Mohd Amir Shazwan and Ee, 2018; Oo and Lim, 2020).

Uncomfortable work tools expose women to unsafe ergonomic conditions (Mariam et al., 2021). Many tradeswomen note a lack of available personal protective equipment designed for women's bodies (Curtis et al., 2018; Behm, 2019). Most of the anthropometric data used for PPE templates are derived from studies on military personnel or the general employed population from the 1950-70s, when women were poorly represented (Kaur and Mittar, 2015; Hsiao et al., 2016; Milligan, 2019). Anthropometry, the science that defines a person's size, form and functional capacities, is critical to preventing occupational injuries and designing effective PPE (Milligan, 2019). PPE is not a one-size-fits-all (Cannon and Shah, 2019).

2.3 Sanitary Facilities for Women in Construction

The lack of access to adequate sanitation has been a particularly persistent problem that is associated with negative health consequences (Winter and Barchi, 2016; Kayser et al., 2019). Recent studies have also recognized that the health burden associated with absent or poor sanitation facilities falls disproportionately on women (Winter and Barchi, 2016). One of the most pervasive yet common forms of gender discrimination experienced daily by girls and women around the world is their inadequate access to a private, comfortable, and convenient toilet (Schmitt et al., 2018).

Ness (2012), Thenguzhali and Veerachamy (2015) and Wong et al., (2020) argue that many of the problems that female construction workers face, are made more severe than other industries by the construction industry's lack of adequate sanitary facilities. Most of the time, the construction companies do not provide any, or even proper sanitation on sites (Thenguzhali and Veerachamy, 2015). Kaur and Mittar, (2015) and Ojo et al., (2019) identify inhibited access to basic facilities, as barriers that threaten the representation, health and safety of women in construction. Temporary sanitary facilities are usually unisex without privacy and not well maintained resulted in unclean facilities (Ojo et al., 2019).

Schmitt et al., (2018); Jones and Slater, (2020), describes an adequate toilet for women as: a safe and conveniently located toilet, separated by gender, which provides privacy, a culturally appropriate waste disposal option, water and soap available for washing one's hands, suitable drainage and a 'safe space' away from men both during the day and night. In addition, actual consultation with girls and women regarding their sanitation needs is relatively rare (Schmitt et al., 2018). According to the Regulations relating to health and safety of employees at work, the employer is required to provide adequate toilet and washing facilities (Nghitanwa and Zungu, 2017).

2.4. The South African Perspective

When the South African construction industry is scrutinised, it is found that, since 2008, the industry contributed approximately 9% of the GDP (Ofori, 2015; Mojekwu et al., 2016; Krugell Chris et al., 2017). South Africa is no exception to the poor health and safety record, that the global construction industry has (Legodi and Chelule, 2016). The South African construction industry is the third most hazardous, only exceeded by the agricultural and manufacturing sectors. Although there were interventions by various stakeholders to deal with this problem, the results remain unacceptable as accidents continue to persist in the construction industry. (Krugell Chris et al., 2017; Khoza and Haupt, 2021). Most fatalities reported in the South African construction sector are a result of falling from heights, slipping, moving machinery and vehicles (Legodi and Chelule, 2016). Findings from a survey carried out in Cape Town, South Africa reveals that back pain among workers in construction companies occurred at a rate 25% more than in the developed countries which leads to absenteeism and low productivity (Nghitanwa and Zungu, 2017). In South Africa, a clear obligation to all parties is imposed by the Construction Regulation 2014 on construction projects and owners of assets, clients, their agent, the designers, the principal contractors, contractors, and owners of the structure (Khoza and Haupt, 2021). The private sector, government and unions have shown their commitment in addressing the matter, through the Construction Health and Safety Accord signed in August 2012 that aims to improve the status of health and safety in the construction industry (Krugell Chris et al., 2017).

Gender as an individual factor is one of the several factors that have been identified as contributors to occupational injuries and accidents (Legodi and Chelule, 2016). Construction Industry Development Board (CIDB) (2020) report on the status of the South African construction industry, states that women's contribution to the construction work force has been about 13% over the past 10 years. This undesirable gender employment inequality has economically worsened women's construction health and safety (Chikafalimani et al., 2021). Women have unique health and safety needs as construction work exposes them to high risks of injuries and fatalities (Mariam et al., 2021). Women are more than capable than men of finding appropriate solutions to meet their own construction health and safety challenges. However, these challenges have been compounded with minimal participation of women in construction (Chikafalimani et al., 2021).

Provision of Personal Protective Equipment is important in ensuring OHS at workplaces, especially, when properly selected and used by workers, as they provide protection against risks (Nghitanwa and Zungu, 2017). Equipment, tools and personal protective equipment for work is designed only to fit the male body leaving women with the dilemma of finding comfortable PPE with the right fit. Uncomfortable work tools expose women to unsafe ergonomic conditions (Mariam et al., 2021). Although poor working conditions could expose both men and women to health hazards, women are more likely to experience additional stressors specific to their gender or them just being women (Mariam et al., 2021). According to the Regulations relating to health and safety of employees at work, the employer is required to provide adequate toilet and washing facilities (Nghitanwa and Zungu, 2017). Employers do not seem to be complying with the regulations, as even at a critical time, Amoah and Simpeh, (2021) noted in their study that one of the main problems, was the supply of poor PPEs by contractors, regarding the implementation challenges of COVID-19 safety measures on project sites.

2.4 Theoretical Framework

Based key literature relevant to this study such as, Helgeson, (2015); Barnes, (2020); Fajarwati et al., (2020); Occupational Health and Safety Act, (1993); Hooda and Mehta, (2020); Delgado et al., (2018); Shaohui Dang et al., (2019); Chikafalimani et al., (2021). Figure 2 demonstrates the theoretical framework of this study. The main bodies of knowledge are gender; construction science and technology; health and safety. From these main bodies of knowledge, three secondary bodies of knowledge are derived as shown in Figure 2. These include; 1: Women in construction - derived from, gender and construction science and technology. 2: Health and safety in construction - derived from, construction science and technology and health and safety. 3: Gender sensitive health and safety - derived from gender and health and safety. The focus of this study is on the unsuitable and poor provisions for the women in construction specifically on the provision of personal protective equipment and sanitary facilities to female construction workers on sites.

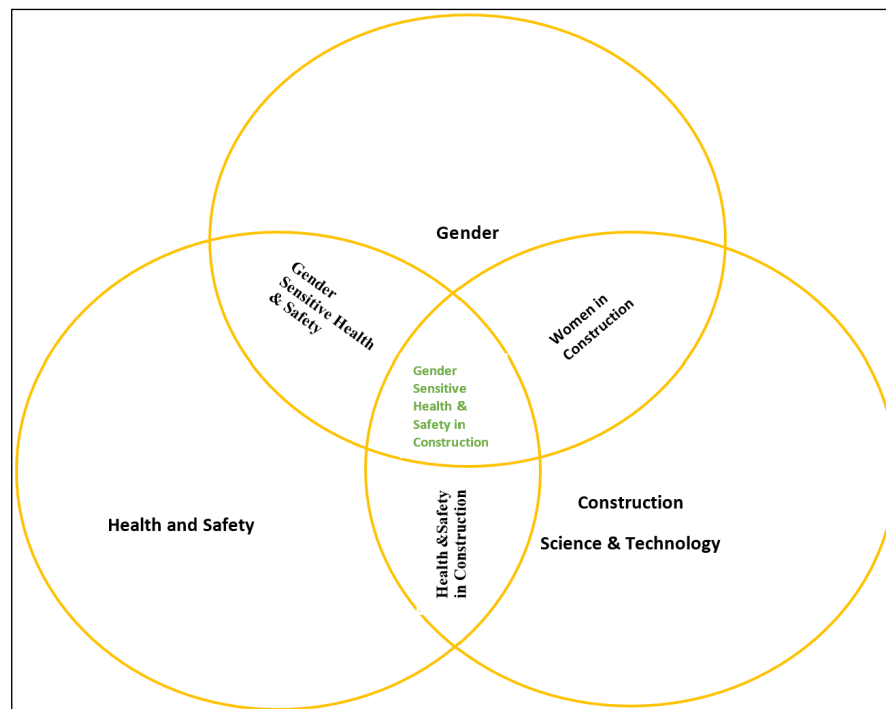


Figure 2. Theoretical Framework Source: Researcher's Own

3. Methods

Qualitative research relates to ideas, perceptions, opinions, beliefs, experiences, attitudes, behaviour, and interactions of the person being studied (Creswell, 2012). This approach was deemed appropriate for the research. Semi-structured interviews were used as they are an effective method for data collection of qualitative, open-ended data; to explore participant thoughts, feelings and beliefs about a particular topic; and to delve deeply into personal and sometimes sensitive issues (DeJonckheere and Vaughn, 2019). Creswell and Creswell, (2017) and Yin, (2017) describe qualitative observation as a suitable instrument for when a researcher is required to gain knowledge on the behavior and activities of individuals at the research site. Non-participatory participant observations were, thus, conducted as an additional source of data method for triangulation purposes.

Prior to the process of sampling respondents and sites, a list of 30 top skills development levy (SDL) paying companies was obtained. High levy paying represents a higher number of employees and a greater possibility of female site workers' existence. A systematic sampling technique was used to select six companies who were approached and all were willing to participate. Not all, however, had female construction site workers, reducing the sample to two companies who were relevant for the research.

Creswell and Creswell, (2017) advocate that 5–25 semi-structured/In-depth interviews are adequate. Due to the small number of women in construction, purposive sampling was used with a targeted sample size of 15 respondents. The participants were female construction workers who had recent experience in actively working at construction sites. From the anticipated 15 respondents, 11 female workers agreed to participate. The participants represented three trades namely, electrical, bricklaying and plumbing.

The interview questions were developed from the objectives. Ethics clearance was obtained from the School of Mechanical Industrial and Aeronautical Engineering Ethics committee. Consent from companies was in writing and consent from the workers was verbal. The research received 100% consent, all contacted female site workers agreed to participate. Additional females (managers and quantity surveyors) agreed to participate in the research, however, they did not represent the target population, and were declined. The interviews lasted between 12 to 20 minutes. Gomes et al., (2016) indicated that, worker in the lower level of the hierarchy, have recurrent fear that if they express

criticisms, it could be used against them. The respondents were eager and willing to participate, however were not comfortable with recordings and consenting in writing. The one barrier experienced by the researcher with respondents was being compelled to decline two participants due to language barrier.

Complete participant observation was the second data collection tool used as a way to support results of the interview process and to reduce the risk of systematic biases, raised by Flick, (2017). Non-participative observations were done in an unobtrusive way (Saunders et al., 2015; Creswell and Creswell, 2017). The adopted structure was from the components of the AEIOU (A – Activities, E – Environments, I – Interactions, O – Objects, U – Users) framework proposed by Berkeley et al., (2012), which best suited the objectives of the research. The provisions of personal protective equipment and sanitary facilities were covered under activity. The use of personal protective equipment and existence of sanitary facilities were covered under environment, objects and users. Observing interactions would not have assisted with the objectives of the research and therefore interactions were not considered.

Observation relating to PPE was done at site 1 in Pretoria Central. As the site was a high security area, access for site observation was limited. Observation of sanitary facilities was done at site 2 in Selby South. Observation of PPE was done at site 3 in Midrand, while sanitary facilities could only be observed from a distance.

4. Results

4.1 Respondent information

The demographic information of the participants is presented in Table 2 below.

Table 2. Respondent demographic information

	Age	Province	Education	Experience	Occupation	Duties
1	31	Limpopo	Diploma in Electrical Engineering	6 years	Electrical engineer	Service transformers and generators. electrical maintenance
2	27	Mpumalanga	Electrical Engineering N6	1 year	Electrical engineer	Electrical Maintenance (substations)
3	28	Limpopo	Matric, N2 Bricklaying, N6 Electrical	3 years	Bricklayer	Mixing Mortar, Bricklaying
4	28	Venda	Matric	3 years	Bricklayer	Building structures
5	31	Limpopo	N2 Electrical Engineering	3 years	Bricklayer	Mixing of mortar
6	31	Limpopo	N4 Electrical Engineering	3 years	Bricklayer	Building structures
7	32	Limpopo	Grade 11	3 years	Electrician	Wiring installation
8	26	Limpopo	Matric, Firefighting Certificate	1 year	Electrician	Wiring installation
9	32	Limpopo	Matric, Traffic Policing	3 years	Electrician	Installation of DB and maintenance
10	32	Eastern Cape	Grade 11	3 years	Plumber	Sinks and baths installation
11	27	Eastern Cape	Matric, Artisan	5 years	Plumber	Installation of pipes, drainages, sinks, geysers, baths

The demographics demonstrates work experience to be between three and six years. This gave assurance that information shared was likely to be experiences not older that three years. The breakdown also demonstrates that respondents were not originally born in Gauteng, therefore representing other provinces. The respondents are

reasonably literate and experienced. 73% of the respondents have post school qualifications and the 27% are pursuing post school studies.

The researcher conducted field observation to triangulate the respondents. All observations for this study were done in Gauteng. Observation only relating to PPE worn by respondents was done at site 1 in Pretoria Central. Site 1 was a high security area and therefore access was limited for site observation, however the interviews were permitted.

4.2 CAQDAS (Computer Assisted Qualitative Data Analysis Software – Atlas.ti) Analysis

Atlas.ti was used to identify possible key concepts and suggested relationships from coding the units of data. Based on the analysis of the respondent transcripts through a word cloud analysis, sentiment analysis and code analysis from Atlas.ti. Emergent themes were; fit, quality, size(s), cut, tears and fade in relation to PPE. Themes for sanitary facilities were; present, sometimes, bushes and hire. The reports further revealed that, most of the participants responded in a neutral sensation that did not attach feelings when providing insight.

4.3 Adequacy and Appropriateness of PPE and its Usage

With regards to the perception participants have on the provisions of PPE, 10 of the 11 participants indicated that they received properly fitting PPE and only one participant indicated the provided PPE was ill-fitting. Observations confirmed the female workers wore PPE that visibly fit properly, their safety boots even had a touch of pink. The one participant that was dissatisfied with the fit indicated that, “you get supplied with two pairs of the same size, from the same supplier but the pairs are different”. This indicates that manufacturers have improved on accommodating female workers, in terms of appropriate PPE sizes that are easily accessible. The one participant that was not satisfied, could be a result of a mistake of male and female sizes that ended up being provided to her. These findings do not support those of Behm, (2019); Cannon and Shah, (2019) and Oo and Lim, (2020) who found that, women have a challenge with finding PPE that fit properly in most trades and construction is no exception. South African researchers such as Mariam et al., (2021) and Nghitanwa and Zungu, (2017) noted similar findings.

On the other hand, results regarding the utilization of PPE indicated that eight of the 11 participants raised issues of poor quality of the PPE provided, while two participants refrained from commenting, while the remaining participant reported a pleasant experience in utilising the PPE. The issues raised were mainly regarding the work suits where the pants did not use stretch material. The participants further elaborated that, the non-elasticity could be an issue should the participants need to climb a ladder, gain weight, or fall pregnant. The quality and design of the work suits led to them easily tearing between the thighs and the jackets tearing under the arms. The issues of poor quality were raised by participants 1,2,5,6,7,9,10 and 11. Now that the female workers are generally provided with fitting PPE, they are now able to test the PPE and have reported the quality and design of the PPE to be below acceptable standard. The quality of the PPE provided by construction companies requires further investigation.

4.4 Adequacy and Appropriateness of Sanitary Provisions and their usage

In relation to results on the utilization of sanitary facilities, six of the 11 participants initially reported a pleasant experience on the utilisation of sanitary facilities and upon further probing, the participants disclaimed that their experiences were simply based on established construction sites with sophisticated infrastructure. Four participants who had worked at developing sites, reported an unpleasant experience. Only 1 participant opted not to comment. Participants 1,7,8,9,10 and 11 were the participants that reported a pleasant experience. However, the participants further reported that although they are provided with appropriate toilets, the participants still needed to share them with their male counter parts. Participant 3,4,5 and 6 that reported an unpleasant experience, elaborated that unestablished sites at times do not provide sanitary facilities. Participants would need to walk to a nearby mall to relieve themselves and if there is no mall nearby, they would need to knock at neighbouring houses or relieve themselves in the bushes. On days that the unestablished sites provided mobile toilets, the toilets were in a bad state. The participants therefore still preferred to use bushes and to rather throw used sanitary towels on the ground rather than to leave the work sites or use the mobile toilets at the site. The female site workers do not think sanitary facilities at developing construction sites, are appropriate. These findings support those of Ness (2012); Thenguzhali and Veerachamy (2015) and Wong et al., (2020) who argue that one of the challenges for women workers is the dearth of adequate sanitary facilities at most worksites (bathrooms that are clean, available, accessible, and private). South

African literature from Nghitanwa and Zungu, (2017); Mariam et al., (2021), is corroborated with the results of this study. The female workers in the selected sites, thus, confirmed that sanitary provisions were inappropriate.

Thenguzhali and Veerachamy, (2015), Kaur and Mittar, (2015) and Ojo et al., (2019), noted that most of the time, construction companies do not provide any, or even proper sanitation on sites. The researchers further found that, temporary sanitary facilities are usually unisex without privacy and not well maintained. These findings are consistent with findings of this study, as result obtained regarding the utilization of sanitary facilities during the study are identical to literature.

4.5 Proposed Improvements

Participants 1,2,5,6,7,9,10, and 11, stressed that manufacturers need to improve the quality of the work suits, making them more durable and practical for their unique needs. By providing thick socks for the safety boots, stretching and strong material for work suits to accommodate their gender needs. Participants 3 and 11, emphasized the need to improve the frequency of the distribution and replacement of the PPE. Wagner et al., (2013); Milligan, (2019), suggest that there is room for improvement to the design of PPE. This conclusion is supported by the findings of this study, the female construction site workers stressed the need to improve the design and quality.

Regarding possible improvements to sanitary facilities. Participants 1,2,6,8,9,10 and 11, suggested that companies need to take responsibility for ensuring sanitary facilities are always available. The companies should provide gender separated toilets (whether mobile or immobile) with water, toilet paper and washing liquid. Fines and compulsory random sites inspections by independent parties could assist to resolve the sanitary issues experienced by the female workers. Literature (Ojo et al., 2019; Schmitt et al., 2018; Jones and Slater, 2020) provide the specifications for adequate sanitary facilities for women on construction sites. These specifications are corroborated by the suggested improvements proposed by the female workers in this study.

5. Conclusion

Results suggest the need to address the quality of the PPE, mainly referring to materials used. Materials which should accommodate the gender sensitivity needs of the women in construction. Gender sensitivity mentions the design improvements to accommodate rapid weight gain, weight loss and other practicalities that would allow workers to move around comfortably while safely performing their duties. The results further suggest the workers are satisfied concerning the fit of their PPE, mentioning the cuts are now gender specific. Results on sanitary facilities, however, suggest that health for the women in construction continues to be compromised. The provision of toilets at developing sites remains poor. Results suggest there has not been any movement to improve the status quo and therefore confirm relevant literature findings. The tendency is that established construction sites that require extensions/renovations had toilets that were largely satisfactory to the workers although there were concerns on privacy. This was most concerning as construction companies could use established sites as reasons to exclude women in construction from unestablished sites and only place the women in construction at established sites. It is therefore recommended that future studies, focus on health and safety for women in construction at unestablished sites.

The construction industry, however, needs a bigger workforce to work more efficiently and effectively (Cannon and Shah, 2019). Women are a resource that can assist in addressing this problem. Women must then feel safe and welcome at construction sites, if they are to choose a career in construction. Ultimately, when the safety of women is addressed, the safety of everyone is also improved.

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