

ORIGINAL RESEARCH ARTICLE

Perceived and real barriers to workplace empowerment among women at Saudi universities: A cross-sectional study

DOI: 10.29063/ajrh2021/v25i1s.3

Awad M Al-Qahtani¹, Heba A Ibrahim^{2,3}, Wafaa T Elgzar^{2,4}, Hanan Abd Elwahab El Sayed⁵, Tulip Abdelghaffar⁶, Rania I Moussa^{7,8}, Aisha R Alenzy⁹

Department of Family Medicine, College of Medicine, Najran University, Najran, KSA¹; Department of Maternity and Childhood Nursing, Nursing college, Najran University, KSA², Department of Obstetrics and Woman Health Nursing, Benha University, Benha, Egypt³, Department of Obstetrics and Gynecologic Nursing, Damanhour University, Damanhour, Egypt^{3,4} Assistance Medical Science Department, Community College, Tabuk University, Saudi Arabia⁵; Consultant of Vice rector for development and quality, Najran University, KSA⁶; Department of Nursing administration, Damanhour University, Damanhour, Egypt⁷; Department of Nursing administration, Taiff University, Taiff, KSA⁸; Department of Medical surgical Nursing, Nursing college, Najran University, KSA⁹

*For Correspondence: Email: wafaa.elgzar@nur.dmu.edu.eg; Phone: 00966545969866

Abstract

Academic women in the Arab world, especially Saudi women, have numerous barriers inhibiting their leadership power at the workplace. The current study explores the perceived and real barriers to workplace empowerment among women at Saudi universities. A descriptive cross-sectional study was carried out at 15 Saudi governmental universities. A multistage cluster sampling technique was followed to select (5587 participants) The data collection started from the beginning of April to the beginning of September 2020. SPSS 23.0 was used to analyze data using descriptive statistics. Multiple linear regression was used to identify the real barriers to women empowerment at the workplace. The study showed that 52.1% of the study participants had moderate workplace empowerment, and only 10.2% have a low level. Regarding perceived barriers to workplace empowerment, 42.6% of the participants agree that male dominance was a barrier. Moreover, 36.2% of the participants agreed and strongly agree that the customs and traditions are a barrier to women empowerment at the workplace. Multiple linear regression showed that age, followed by years of experience ($p < 0.000$), were the most significant demographic predictors of women empowerment at the workplace. Moreover, positive attitude, high self-esteem, and good knowledge ($p < 0.000$) were considered other variables that positively predict women's empowerment at the workplace. The experience of gender-based violence ($p < 0.000$) was a negative predictor of women empowerment at the workplace. The study concluded that around 62.3% of Saudi female academics and administrative staff have moderate or low workplace empowerment at Saudi Universities. Male dominance is perceived as the highest barrier. (*Afr J Reprod Health 2021; 25[1s]: 26-35*).

Keywords: Barriers, workplace empowerment, Saudi women

Les femmes universitaires du monde arabe, en particulier les femmes saoudiennes, ont de nombreux obstacles à leur pouvoir de leadership sur le lieu de travail. L'étude actuelle explore les barrières perçues et réelles à l'autonomisation sur le lieu de travail des femmes dans les universités saoudiennes. Une étude transversale descriptive a été menée dans 15 universités gouvernementales saoudiennes. Une technique d'échantillonnage en grappes à plusieurs degrés a été suivie pour sélectionner (5587 participants). La collecte des données a débuté du début avril au début septembre 2020. SPSS 23.0 a été utilisé pour analyser les données à l'aide de statistiques descriptives. Une régression linéaire multiple a été utilisée pour identifier les véritables obstacles à l'autonomisation des femmes sur le lieu de travail. L'étude a montré que 52,1% des participants à l'étude avaient une autonomisation modérée en milieu de travail et que seulement 10,2% ont un faible niveau. En ce qui concerne les obstacles perçus à l'autonomisation sur le lieu de travail, 42,6% des participants conviennent que la domination masculine était un obstacle. De plus, 36,2% des participants étaient d'accord et tout à fait d'accord pour dire que les coutumes et traditions sont un obstacle à l'autonomisation des femmes sur le lieu de travail. La régression linéaire multiple a montré que l'âge, suivi des années d'expérience ($p < 0,000$), étaient les prédicteurs démographiques les plus significatifs de l'autonomisation des femmes sur le lieu de travail. De plus, une attitude positive, une haute estime de soi et une bonne connaissance ($p < 0,000$) ont été considérées comme d'autres variables qui prédisent positivement l'autonomisation des femmes sur le lieu de travail. L'expérience de la violence sexiste ($p < 0,000$) était un prédicteur négatif de l'autonomisation des femmes sur le lieu de travail. L'étude a conclu qu'environ 62,3% des universitaires et du personnel administratif

saoudiens ont une autonomisation modérée ou faible sur le lieu de travail dans les universités saoudiennes. La domination masculine est perçue comme le plus grand obstacle. (*Afr J Reprod Health* 2021; 25[1s]: 26-35).

Mots-clés: Barrières, autonomisation sur le lieu de travail, femmes saoudiennes

Introduction

Women empowerment is an essential component of any community transformation process. Efforts to empower women in Saudi Arabia were scattered until the evolution of the 2030 vision, which emphasized the important role that women can play in different work fields. Saudi society has many traditions that limit women's participation in different social activities and work fields. These fields include but are not limited to engineering, practice law, veterinary., etc. However, feminine participation is essential for the benefit of the woman herself, family, and community. Gender inequity practiced in Saudi Arabia have no root in Islamic rules or law, rather, it is deeply rooted in customs and traditions¹. Even if the woman is employed, she is prohibited from assuming a higher administrative position because of male dominance². Recently, few women have begun to take leadership and managerial positions, especially in higher educational institutes. Although of this an improvement, women administrative and academic leaders are still facing many barriers that limit their administrative power³.

In the workplace, female academic and administrative staff are challenged by both perceived and real barriers. Perceived barriers include lack of professional development opportunities, violence against women, absence of administrative support, male dominance, customs, and traditions^{4,5}. Real barriers to workplace empowerment greatly differ from one job to another based on the job requirements and opportunities. For academic and administrative staff in Saudi universities, the real barriers may include education, years of experience, age, self-esteem, women empowerment knowledge, and attitude, etc.

The negative attitude toward women's empowerment at the workplace is a crucial barrier to her creativity and leadership. Therefore, improving women's attitudes toward workplace empowerment is an essential step that helps them reach their maximum potentials. *Fernandez and Moldogaziev* studied the relationship between employee empowerment attitude and their performance. They concluded that empowerment in

the workplace is greatly influences job satisfaction and creativity. They further elaborated that a positive attitude toward empowerment has a direct relation to the workplace empowerment level⁶.

Self-esteem influences the perception of work conditions, decision making in daily life, personal growth, and coping strategies that a person can choose in different situations. People who have high self-esteem and self-worth are more likely to recognize stress as an opportunity for personal growth⁷. Low self-esteem is linked to past experience of gender based violence. Gender-based violence is a commonly seen phenomenon in different workplaces. In Saudi Arabia, psychological and verbal violence are common barriers to women's empowerment at the workplace. Kaphle *et al.* deeply investigated the role of gender-based violence on the occupational environment safety. They concluded that 77.9% of their participants were exposed to psychological violence at the workplace. In addition, 74.4% were exposed to verbal violence and threats⁸.

Al-kayed investigated women leaders' challenges at Saudi universities. He concluded that male dominance is a significant barrier to Saudi women's empowerment in managerial positions as woman decision making power is greatly restricted from the male boss. She acts only as an executive manager in the female section. If she tries to make an opposite decision, she might be punished through verbal violence. Gender segregation policy in Saudi universities seriously restrain women leaders as they have to take approvals for all critical decisions regarding their departments and career development from their male boss. In addition, they have limited access to resources and opportunities, which is under men's control^{9,10}.

Women assuming leadership and administrative positions are crucial to enhance gender equity by empowering them to make independent decisions in their departments. It can be achieved through providing more opportunities for female leaders, conducting leadership development and organizing mentoring programs, allowing flexible work schedules, and fostering women's networks^{11,12}. Empowerment and local development will make women more observable in vital positions

and help them shape their universities' administrative bodies¹³.

To eliminate perceived and real workplace empowerment barriers, women should be empowered in all her life dimensions Al-Qahtani *et al.* determined three main dimensions for women empowerment in higher educational institutes. These dimensions are personal, social/relational, and environmental/workplace empowerment¹⁴. Empowerment in the workplace means increasing employee self-efficacy, giving a chance for decision-making, delegating authority, motivation, and accountability for their decisions¹⁵. The main sub-dimensions of women empowerment at the workplace are access to education, knowledge, resources and support, opportunity and promotion, participation in political life, and psychological empowerment¹⁴. Therefore, the current study explores the perceived and real barriers to workplace empowerment among women at Saudi universities.

Methods

Research design and setting

A descriptive cross-sectional study was carried out at 15 Saudi governmental universities.

Sampling

A multistage cluster sampling technique was employed to select about 50% of the Saudi governmental universities (15 Universities). KSA was divided into five sections; from each one, a cluster sampling technique was followed to select about three universities. A cluster sample was followed to select colleges from each university; then, a convenience sample was followed to select the participants.

The total sample size was calculated according to the following formula.

$$n = \frac{(df)(t^2)PqQ}{d^2} = \frac{(15)(1.96)^2 0.5 \times 0.5}{(0.05)^2} = 5762$$

Where; n = sample size, df= design effect of cluster sampling, t= the parameter related to the precision of getting the maximum sample, size (1.96 for an error risk of 5%) were the normal curve cuts off an area at the tails (100 equals the desired confidence level of 95%), p= expected prevalence of having

high women empowerment at the workplace (estimated proportion of an attribute that is present in the population), q= 1-p the expected proportion of women who have moderate or low women empowerment, d= maximum tolerable error (the desired level of precision)

Inclusion criteria

Saudi female faculties or administrative staff in governmental Saudi Universities who accepted to participate in the study.

Data collection tool: a questionnaire composed of three parts was used for data collection.

Part I: Socio-demographic data; it was developed by the researchers to collect socio-demographic data such as age, marital status, educational level, residence, years of experience, mother' education, and nationality.

Part II: Likert scale to assess perceived barriers for women's empowerment at the workplace. The researchers developed it after reviewing the related literature. It is composed of six statements rated on a five-point Likert scale ranged from strongly disagree (1) to strongly agree (5). The instrument was tested for content validity by a jury of five experts in the field; then it was tested for reliability using the Cronbach alpha coefficient test ($r= 0.75$)

Part II: Women empowerment scale for Saudi women in higher education institutes.

Al-Qahtani *et al.* developed this scale to evaluate women empowerment in higher educational institutes. The scale comprises three main dimensions for women empowerment, personal empowerment, social/relational empowerment, and environmental/workplace empowerment.

The scale is revealed to be valid with high reliability ($r=0.955$). In this study, the third dimension only was used to assess women empowerment at the workplace. This dimension incorporates six sub-domains: access to education, knowledge, resources and support, opportunity and promotion, participation in political life, and psychological empowerment at the workplace. The six subdomains related to workplace empowerment composed of 16 items scored on a 5-point Likert scale. The total score ranged from 16 to 80. The participant is considered to have high, moderate, or

low workplace empowerment if her score ranged from 16 to 37, 38 to 58, and 59 to 80, respectively¹⁴.

Data collection procedure

This study is a part of a project entitled "Based on vision 2030: Evaluation of women empowerment at Saudi universities and designing needs-based training packages". The data collection started from the beginning of April to the beginning of September 2020. After completing the necessary approvals, the principal investigator and co-investigators assigned data collectors in each university to help in data collection. The data collectors disseminated and collected the questionnaires. The responsibility of the data collector was to ascertain the completeness of the collected data. Based on the previous sample size calculation, 5762 questionnaires were collected; 175 were excluded from statistical analysis due to incomplete or incongruent data. Data analysis was conducted on 5587 responses.

Data analysis

Statistical analysis was performed using SPSS Version 23.0. The participants' basic data, level of women empowerment at the workplace, and perceived barriers were analyzed using descriptive statistics. The multiple linear regression (Enter model) was used to identify the real barriers to women empowerment at the workplace.

Results

The participants' demographic characteristics are shown in Table 1. The participants' mean age was 36.40±8.19 years, while 50.0% were between the age group of 30-<40 years. More than two-thirds of the participants were single (65.0%), and the majority of them (80.5%) from city residents. Concerning the participants' educational level, 21.1% had Ph.D., and 63.3% were working as academic staff. The mean years of experience in the workplace was 9.95±6.99. Regarding the mother's nationality, most of them (87.35) had Saudi mothers.

Table 2 illustrates that more than one-third of the participants had a high level of access to education

Table 1: Demographic characteristics of study participants (N= 5587)

Variable	Number	Percentage
Age		
– 20-<30 years	1437	25.7
– 30-<40 years	2796	50.0
– 40-<50 years	1084	19.4
– 50 -60 years	270	4.8
Mean ±SD	36.40±8.19	
Marital status		
– single	1478	26.5
– married	3630	65.0
– widow	119	2.1
– divorced	360	6.4
Residence		
– City	4497	80.5
– Governorate	900	16.1
– village	190	3.4
Educational level		
– Bachelor	2354	42.1
– Master	1655	29.6
– PhD	1178	21.1
– Post-doctoral	400	7.2
Occupation		
– Academic staff	3535	63.3
– Administrative staff	2052	36.7
Years of experience at workplace		
– < 10 years	2915	52.2
– 10- 20	2233	40.0
– > 20	439	7.9
Mean ±SD	9.95±6.99	
Mothers educational level		
– Illiterate	1565	28.0
– Read and write	1426	25.5
– Middle education	1156	20.7
– High education	1440	25.8
Mother's Nationality		
– Saudi	4877	87.3
– Non-Saudi	710	12.7

and knowledge, 41.6% and 32.15, respectively. At the same time, more than one-half of them had a moderate level of access to resources and support and access to opportunity and promotion, 57.2%, and 55.7%, respectively. Around one-fifth (20.9%) of the participants had a low level of participation in political life. Around half of the participants had a high level of psychological empowerment in the workplace. Regarding total workplace empowerment, more than one-half (52.1%) of them had a moderate level, and only 10.2% had a low level.

Table 2: The level of women empowerment at the workplace among study participants (N= 5587)

Variable	Low		Moderate		High	
	N	%	N	%	N	%
Access to education	599	10.7	2664	47.7	2324	41.6
Access to knowledge	830	14.9	2963	53.0	1794	32.1
Access to resources & support	870	15.6	3198	57.2	1519	27.2
Access to opportunity & promotion	917	16.4	3114	55.7	1556	27.9
Participation in political life	1170	20.9	3360	60.1	1057	18.9
Psychological empowerment at workplace	249	4.5	2604	46.6	2734	48.9
Total workplace empowerment	570	10.2	2911	52.1	2106	37.7

Table 3: Perceived barriers for women empowerment at the workplace among study participants. (N= 5587)

Perceived barriers	Strongly disagree		Disagree		Neutral		Agree		Strongly agree	
	N	%	N	%	N	%	N	%	N	%
- Customs and traditions	310	5.5	600	10.7	1080	19.3	2029	36.3	1568	28.1
- Lack of professional development opportunities	219	3.9	309	5.5	969	17.3	2065	37.0	2025	36.2
- Violence against women	230	4.1	730	13.1	1448	25.9	1884	33.7	1295	23.2
- Absence of administrative support	470	8.4	608	10.9	1287	23.0	1836	32.9	1386	24.8
- Male dominance	50	.9	170	3.0	636	11.4	2376	42.5	2355	42.2
- Woman personality and belief	290	5.2	419	7.5	1346	24.1	2046	36.6	1486	26.6

Table 4: Regression coefficient between workplace empowerment and selected variable (N= 5587)

variables	Standardized Coefficients			95.0% Interval for β	Confidence Interval for β
	β	t	P value		
Demographic variables					
- age	0.207	13.889	0.000**	0.147	0.196
- years of experience	0.133	6.948	0.000**	0.385	0.215
- educational level	.032	2.285	0.022	0.055	0.714
R²	0.480				
F(p)	81.10(0.000**)				
Other variables					
- Knowledge about woman empowerment	0.130	8.703	0.000**	0.615	0.972
- Attitude toward women empowerment	0.192	12.918	0.000**	0.474	0.644
- Self-esteem	0.130	10.778	0.000**	0.377	0.261
- Gender-based violence	-0.112	-9.003	0.000**	-0.639	-0.995
R²	0.413				
F(p)	288.22(0.000**)				

** P significant at ≤ 0.001

Table 3 shows that nearly an equal proportion of the study participants agrees (42.5%) and strongly agreed (42.6%) that male dominance was a barrier for women empowerment at the workplace. Moreover, about two-thirds of the participants agree and strongly agree that the customs and traditions were a barrier for women empowerment at the workplace, 36.3%, and 28.1%, respectively. Simultaneously, 36.2% and 26.6% of

the participants reported "strongly agree" that lack of professional development opportunities and woman personality and belief, respectively, are major barriers for women empowerment at the workplace.

Table 4 portrays women empowerment predictors at the workplace. The multiple linear regression showed that age ($b=0.207$, $t=13.889$, $p=0.000$), followed by years of experience ($b=0.133$, $t=6.948$,

$p=0.000$), are confirmed as the most significant demographic predictors of women empowerment at the workplace. Moreover, the positive attitude ($b=0.192$, $t=12.918$, $p=0.000$), high self-esteem ($b=0.130$, $t=10.778$, $p=0.000$), and good knowledge ($b=0.130$, $t=8.703$, $p=0.000$), are considered other variables that positively predict women empowerment at the workplace. On the contrary, the experience of gender-based violence ($b= -0.112$, $t= -9.003$, $p=0.000$) is a negative predictor of women empowerment at the workplace.

Discussion

Academic women in the Arab world, especially Saudi women, have difficulties inhibiting their career development. These challenges impede academic and administrative ingenuity in their workplaces to achieve personal and professional goals¹⁶. Therefore, exploring the barriers to women empowerment at the workplace is a key administrative requirement for organizational commitment and development. Thus, the present study examined the perceived and real barriers to workplace empowerment among women at Saudi universities.

The present study explored the level of women empowerment at the workplace. The study findings illustrated that more than one-third of the participants had a high level of access to education and knowledge. These findings seem logical because Saudi higher educational institutes provide open access to electronic educational resources as Saudi electronic library with international database collaboration. Besides, all the academic staff have the chance to study abroad with the financial support from their universities. For females, the male relatives should travel with her, which may restrict the female traveling chances. Similar results were reported by Al alhareth *et al.*¹ who reviewed the female higher education in KSA. They stated that although higher education chances are widely available for Saudi females, they are not enough to meet the requirement. The KSA requires a large number of highly educated females to work in different fields. Recently, the role expected from the females in the light of the 2030 vision necessitates standardized, high-quality educational chances. Besides, Al-mssallem explored the role of Saudi

women education in their empowerment level according to the 2030 vision; they recommended that Saudi female staff contribute significantly to the research field if they are supported by access to research centers and university laboratories¹⁷.

In addition, more than half of the current study participants had moderate access to resources and support and access to opportunity and promotion. In the same line, *Al Ghamdi* investigated the impact of women empowerment on the administrative creativity among Saudi academic leaders. They illustrated that female academic leaders had limited authority scope¹⁸. Being a female may limit their access to resources and opportunities, which makes professional growth challenging. In most Saudi universities, there is male dominance over resources and opportunities distribution. Furthermore, *Bani-Hani et al.* explored administrative empowerment among Jordanian women. They concluded that women in leadership positions had limited access to training programs and other university resources. They also had little academic empowerment concerning professional growth¹⁹. It is worth mentioning that Saudi Arabia and Jordan share many customs and traditions related to women.

Surprisingly, less than one-quarter of the current study participants had a low level of empowerment to participate in political life. In KSA, male guardianship over female restrict her participation in social and political activities. Even if she wants to complete her education, get a job, or travel, she has to have the male guardian's consent. In this regard, Quamar examine Saudi women's participation in municipal elections. They reported that only one-fifth of the female voters participated actually in the elections process. They further elaborated that although women may have high internal empowerment to participate in political life, they are restricted by many barriers. These barriers include but are not limited to restriction in mobility, education, and work²⁰. Quamar's results are relatively different from the current study as the present study participants are academic and administrative staff who are highly educated, financially independent, and have freedom of mobility.

Psychological empowerment for women in leadership positions means giving them the power

to think, the opportunity to act without restriction, and a self-confidence to believe in their capabilities in making change equally to male leaders in higher educational institutes²¹. The present study found that around half of the study participants had a high psychological empowerment level in the workplace. These results reflect the significant impact of the 2030 vision on Saudi women empowerment at the workplace. In this regard, O'Neil and Cummings emphasized the importance of women empowerment in building their self-confidence, improving decision-making abilities, having economic independence, and participating in political life activities²². Also, the previously discussed Bani-Hani *et al.* elaborated that women empowerment in the workplace is an essential component of their professional growth. They further added that an effort should be made to enhance women's access to self-development opportunities¹⁹.

The present study evaluated both perceived and real barriers to women empowerment at the workplace. As observed, most participants agree and strongly agree that male dominance was a perceived barrier for women empowerment at the workplace. These findings were consistent with at least two other studies. First, a study conducted by Al-kayed evaluated Saudi women managers' leadership challenges in the governmental universities. Their results indicated that Saudi academic staff had many challenges and obstacles in their career development. The most significant barriers identified by their participants were gender inequity concerning laws, policies, and male dominance in leadership positions¹⁰. Second, Tønnessen investigated the relation between male guardianship and violence in Saudi Arabia. He concluded that male guardianship and dominance are the most critical challenges to Saudi women empowerment that may hinder their political life contribution and violate their human rights²³.

Furthermore, the current study found that around one-third of the participants strongly agreed that a lack of professional development opportunities and customs/traditions were a significant perceived barrier for women empowerment at the workplace. Al-Asfour *et al.* studied the barriers facing Saudi women's career development. They

reported that the lack of self-development opportunities is a significant barrier for professional development among Saudi women. They also explained that customs and traditions impose on women certain work fields and administrative positions²⁴. For example, in most Saudi universities, the higher administrative positions are restricted to males. Recently 2030 vision motivated the governmental universities to hire females as university managers as in Saudi electronic university and princess Nourah Bint Abdulrahman University. Additionally, AlAhmadi explored leadership challenges for Saudi women. They reported that Saudi women are less empowered and have many cultural restraints that hinder their administrative and professional creativity⁹.

Regarding the real barriers to workplace empowerment, a multiple linear regression showed that age followed by years of experience were confirmed as the most significant predictors of women empowerment at the workplace. This goes in the same line with Menon *et al.* who evaluated women empowerment in urban Bangalore, India. They found that women's job enables her economic independence and makes her highly empowered compared to housewives. They further added that older women are more empowered than younger age women²⁵. Also, the previously mentioned study by Al Ghamdi supported the present study findings. They showed a positive relation between years of experience, administrative position, and psychological empowerment at the workplace¹⁸. In other words, the greater the years of experience, the higher psychological empowerment at the workplace for female academic leaders.

Women empowerment in the workplace is greatly enhanced by high knowledge and self-esteem. In this regard, the present study found that self-esteem and good knowledge are significant predictors of woman empowerment. In accordance, Permawonguswa *et al.* investigated the role of self-esteem, emotional empowerment, and self-concepts in the readiness for knowledge sharing in different electronic health systems. They reported that self-esteem is a unique and important predictor of psychological empowerment, and it can be greatly enhanced by increasing knowledge and economic independence²⁶. In the same line, Agarwal *et al.* explored the factors influencing the degree of

women empowerment in India. They concluded that women's empowerment needs to be grown and enhanced through several factors. The first and most important factors identified by their participant is high self-esteem and knowledge²⁷. Therefore, enhancing self-esteem and providing access to higher education is essential to empower Saudi women and increase their contribution in the community workforce.

Gender-based violence has a distractive effect on both the physical and psychological aspects. In the workplace, violence may be expressed in the form of neglected women's opinion, limiting higher administrative positions to men, verbal abuse, control over resources, etc. The current study results revealed that gender-based violence is a strong negative predictor of women empowerment at the workplace. Al Dosary explained the impact of domestic violence in the Saudi community. They found that around three-quarters of the studied women had experienced psychological violence at one point in their life. In addition, near to two-thirds of them experienced physical abuse. They further added that all types of gender-based violence greatly destroy the women's self-esteem and self-confidence, and in accordance, she will be less empowered²⁸. All forms of violence are distractive to all humans, especially females; it limits creativity and positive contribution to community development. Finally, enhancing women empowerment at the workplace and exploring its real and perceived barriers is very important as if workplace barriers are identified, it can be easily managed. Removing workplace barriers can enhance women's technical and administrative creativity. It is the first step towards Saudi leaders and a better future for Saudi women.

Ethical Approval

The deanship of scientific research ethics at Najran University approved this project before its submission to the ministry of education. Another approval was obtained from the ministry of education, KSA. The included universities were contacted formally to gain their approval for data collection. Each participant was informed about the research goal, and informed consent was taken. All data was confidential and was used for the research purpose only.

Conclusion

The study results concluded that 52.1% of the participants had a moderate workplace empowerment level, and only 10.2% had a low level. The most agreed perceived barriers for women empowerment at the workplace are male dominance, customs and traditions, lack of professional development opportunities, and woman personality and belief. Regarding the real barriers, multiple linear regression showed that age followed by years of experience are confirmed as the most significant positive demographic predictors of women empowerment at the workplace. Moreover, positive attitude, high self-esteem, and good knowledge are considered other variables that positively predict women's empowerment at the workplace. Experience of gender-based violence is found as a negative predictor of women empowerment at the workplace.

Contribution to the Database and Implication

The present study finding enrich the database with the perceived and real barriers to women empowerment at the workplace. The availability of such data will direct future researches to explore new ways to empower women in the workplace. Furthermore, the availability of such data will help stakeholders provide evidence-based women empowerment strategies at their institution. Thus, women empowerment efforts will be more efficient.

Acknowledgements

The authors extend their appreciation to the Deputyship for Research and Innovation, Ministry of Education in Saudi Arabia, for funding this research work through project number SS-493 (through the initiative of social sciences number of the contract "4600000111")

Competing Interests

The authors declare they have no conflict of interest.

Contribution of Authors

Al-Qahtani- The conception and design of the study and analysis and interpretation of data, drafting the

article and revising it critically for important intellectual content, final approval of the version to be submitted. *Ibrahim*- Drafting the article and revising it critically for important intellectual content, final approval of the version to be submitted. *Elgzar*- Drafting the article or revising it critically for important intellectual content, final approval of the version to be submitted. *El Sayed* contributed in data collection and in writing the first draft. *Abdelghaffar*- The conception and design of the study and analysis and interpretation of data, drafting the article and revising it critically for important intellectual content, final approval of the version to be submitted. *Moussa*- The conception and design of the study, drafting the article or revising it critically for important intellectual content, and final approval of the version to be submitted. *Alenzy*- drafting the article and revising it critically for important intellectual content, and final approval of the version to be submitted.

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