Challenges Affecting Women PhD Candidates for Completion of Doctoral Educations: A Synthesis of the Literature

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Abstract

Higher education for women is critical to the development of human capital and the overall sustainable socio-cultural and economic development of any country. However, women PhD candidates confront a number of challenges in gaining entrance to and completing their higher education. The most typical issue for women PhD candidates is juggling numerous roles. Combining family responsibilities, career commitments, and academic requirements has a significant impact on women PhD students, resulting in stress. One of the most difficult challenges for women PhD candidates, particularly mothers, throughout their PhD studies is managing maternal and family matters in universities where the motherhood role is not recognized. Women PhD candidates require emotional, economical, mothering, and housekeeping support, as well as educational areas of life to help them take on their duties and obligations. Primarily the student's family members, university teachers, or classmates may provide all of these supports. As a result, following the discussion of dropout for doctoral students, this review paper reflects on issues affecting the completion of PhD studies for women PhD candidates. This review is a systematic overview of the existing literature, which includes books, articles, and other online literatures related to the study. The literature was obtained through Scopus, ERIC, ISI web of knowledge, academia, web of science, digital library, and Google scholar. It aims to identify the obstacles that prevent women from completing doctoral degrees. Social isolation, loneliness and stress, inappropriate socioeconomic conditions, supervision relationship, and simultaneous management were identified as challenges. To emphasize the importance of PhD mother students' responsibilities, assistance and education for acquiring the abilities to perform these roles, as well as university structure, should be family friendly.

Key words: dropouts of doctoral studies; women doctoral students; problems in doctoral studies; social isolation; supervisor relationship

Introduction

Higher education for women has a crucial role in the development of human capital and the overall sustainable social, cultural, and economic growth of any society. Higher education enables qualified women to become leaders in society and role models for young females. With a higher education, women can choose their field of competence, allowing them to participate more fully in family and communal life. Furthermore, this enables them to contribute to policy concerns of economic, social, and cultural growth (Shaukat & Pell, 2015). Because there are enormous benefits to expanding the number of female PhD students and potential female doctoral degree holders, higher education should provide supportive environments that assist women, particularly mothers, in

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successfully completing their doctoral studies. Despite the primary relevance of doctoral study for academic practices, completing a PhD education successfully is a difficult task (Pyhältö, Toom, Stubb, & Kirsti, 2012).

Women pursuing PhD degrees in scientific education face a number of hurdles that may jeopardize their ability to complete their degrees. One major issue is the existence of gender bias and preconceptions, which may result in unequal treatment, fewer resources, and lower expectations when compared to their male counterparts. Balancing work and home life is another typical challenge, with cultural expectations and family duties sometimes putting additional strain on women during their doctoral programs (Ampaw & Jaeger, 2011). In science education, a lack of representation and role models can contribute to feelings of isolation and stymie progress. Moreover, implicit prejudice in appraisal and progression processes might have an impact on women's professional paths. Workplaces that are hostile, as well as unequal access to research opportunities and funding sources, add to the difficulties they encounter. Family planning and child-rearing obligations can also provide special challenges for female PhD applicants, possibly interfering with their capacity to concentrate on academic pursuits (Amponsah et al., 2013). Furthermore, many students suffer from imposter syndrome, which can weaken their confidence and self-belief. Women may struggle to find direction and encouragement in their academic career due to a lack of female mentors and supportive networks (Dabney et al., 2016).

Furthermore, because of the convergence of gender and other variables such as race, ethnicity, religion, or handicap, women from minority groups confront added hurdles. Academic institutions and policymakers must implement diversity and inclusion initiatives, provide mentorship and networking opportunities, foster supportive work environments, and advocate for policies that address the unique needs of women in academia in order to address these issues and promote inclusivity in science education. Women PhD applicants can be better supported in their pursuit of doctoral education in science by providing a more egalitarian and encouraging environment (Brown & Watson, 2010).

There are numerous obstacles impeding timely women's progress toward degree completion, adding to the potential loss of women in academic careers that is far too great to be tolerated by students, institutions, society, and government (Moghadam, Khiaban, Esmaeili, & Salsali, 2017). One barrier preventing women from completing their studies and earning their doctorates is a lack of female motivation. Other problems include a shortage of female leaders, female lecturers, female research project supervisors and administrators in science-related departments, and a lack of social, emotional, and financial support. Doctoral degrees are widely acknowledged to be an expensive procedure, and students typically enroll later in life, when family responsibilities are greater. Thus, while family sacrifices are necessary, they put strain on the family. As a result, dropping out is typically a deliberate decision made by some students after weighing the costs and rewards (Hockey, 1994; Ali & Kohun, 2007).

Perceptions of issues encountered by PhD candidates during their studies vary (Pyhältö, Toom, Stubb, & Kirsti, 2012). Among the factors commonly associated with degree completion time were the availability of funding resources, the nature of the advising relationship, individual student concerns about marital, family, or health problems, and the extent to which students receive research preparation and opportunities (Maher, Ford, &

Thompson, 2004). Other aspects that contribute to the entire doctoral experience include the supervisory relationship, doctoral students' and supervisors' personal attitudes about research and supervision, and the scholarly community (Pyhältö, Toom, Stubb, & Kirsti, 2012).

Researchers must investigate other challenges encountered by doctorate students, as the welfare of doctoral students is clearly tied to their academic engagements. Furthermore, effective resources are required to increase students' abilities to overcome the issues encountered (Pyhältö, Toom, Stubb, & Kirsti, 2012). Women pursuing PhD studies confront a number of challenges that impact their time to completion for a variety of reasons. Even though women are encouraged to study and flourish in STEM (Science, Technology, Engineering, and Mathematics) subjects, there is a mismatch between their educational achievements and their total representation in these fields. Furthermore, there is concern that women have systematically higher dropout rates in more male-intensive STEM programs. Some schools refuse to provide on-campus day care, maternity leave, sick leave, and other basic human rights to PhD students and researchers, citing low STEM enrollment as an excuse (Bondarescu, Balakrishna, Moran, & DeSilva, 2018). So boosting the number of women in these sectors is a critical issue. Some of the issues leading to the inability to recruit more women in STEM fields include societal factors, poor advising, early education classroom conditions, and institutional frameworks (Blackburn, 2017).

The gender difference in PhD program completion rates was found to be greater in areas dominated by men, such as physics, chemistry, mathematics, and engineering. The main issue for women is managing maternal and family matters, especially in universities where the motherhood role is rarely acknowledged (Moghadam, Khiaban, Esmaeili, & Salsali, 2017). Women have higher expectations from their families and are typically burdened with many tasks in marriage because they are often the primary carers in their home (Lasodea & Awotedua, 2014). Despite the promise of impressive higher wages upon completion of doctoral studies, women momentarily lack the ability to earn at their full potential while in graduate school. Delays in degree progress result in societal costs in fields where competent women with terminal degrees are in limited supply. Furthermore, women's low contribution in professional roles is strongly related to the amount of time they spend studying (Moghadam, Khiaban, Esmaeili, & Salsali, 2017). This review focuses solely on difficulties linked to concurrent management, social isolation, loneliness, and stress, unsuitable socioeconomic situations, and the supervision relationship. As a result, following covering dropout for doctorate students, this review paper reports on issues impacting completion of PhD studies for women PhD candidates. The current systematic review only concerned with the sub-Saharan Africa region. This area was chosen due to the fact that it is area that have a big number of women PhD candidates who faced with challenges of completing their PhD studies (Wet & Mkwananzi, 2014). The research question, "What are the challenges affecting women for completing doctoral educations?" served as the basis for the study's findings and conclusion.

Research based theory

According to the behavioral learning theory, which focuses on how students learn, this study was based on that idea. The core tenet of behaviorism is the notion that all actions are learned through interactions with the environment. Inborn or inherited factors have an impact on behavior, according to this learning theory, which also claims that behaviors are learned from the environment. Education professionals must understand behaviorism because it affects how students

act and behave in the classroom and contends that teachers have direct control over their students' behaviour (Burhanuddin et al., 2021). According to this theory, the large number of family obligations and altered family dynamics prevent female doctoral students from finishing their coursework. According to behaviorism, the teacher plays a key role in the learning process by directing learning through drill and practice, habit breaking, and punishment/reward as well as modifying the learner's behavior. On the other hand, the learner's activity whether thinking or acting − is limited to the "behavior" framework and is controlled by the stimulus-response-reinforcement process (Burhanuddin et al., 2021). The behaviorism

During the initial search, the authors looked journals and books and selected the literature based on the factors linked to Challenges preventing women from completing PhD educations. The papers that were not related on Challenges affecting women for completion of PhD educations were removed. The pieces that we are not discussing were also eliminated, leaving 38 items. During the in-depth research of the study's theme, 15 articles were deleted since they exclusively discussed Challenges Affecting Women in Education. Following that, the 23 publications were maintained based on how they discussed Challenges preventing women from completing PhD educations. As shown in Tables the checklist that outlines the quality of

Figure 1 Behaviorism learning theory

theory diagram is depicted in Figure 1.

Research Methodology

The 123 published readings whose common conclusions expressed that the factors associated to Challenges affecting women for completion of PhD educations were collected, critically assessed, and characterized. The studied materials were gathered from electronic records such as Scopus, ERIC, ISI web of knowledge, academia, web of science, digital library, and Google scholar.

the reviewed literature, the number of papers analyzed, searched for, and possibly related as well as relevant articles is shown in Table 1. Only 23 articles were used in this review because they met the analysis criteria, as shown in Table 2, which also details the process of analysing the papers used. The Figure 2 represents the diagram showing the selection process of the reviewed article.

Table 1   Systematic review process

S/N	Database	Search results	Analysed articles	Possible relevant articles	Relevant articles
1	ERIC	13	11	10	3
2	Academia	12	10	10	3
3	ISI web of knowledge	14	12	12	2
4	Web of science	21	20	18	4
5	Scopus	13	10	10	5
6	Digital library	23	21	15	2
7	Google scholar	27	23	6	4
	Total			23 (without duplicates)	

Table 2   The process of analysing the used paper in this review

S/N	Papers	Number
1	Searched from Scopus, ERIC, ISI web of knowledge, academia, web of science, digital library, and Google scholar	123
2	Duplicates then deleted	32
3	Based on the fact that they are not Challenges affecting women in education	53
4	Based on the fact that they do not contain challenges that affect women to complete PhD studies	15
5	They talk about Challenges affecting women for completion of doctoral educations	23
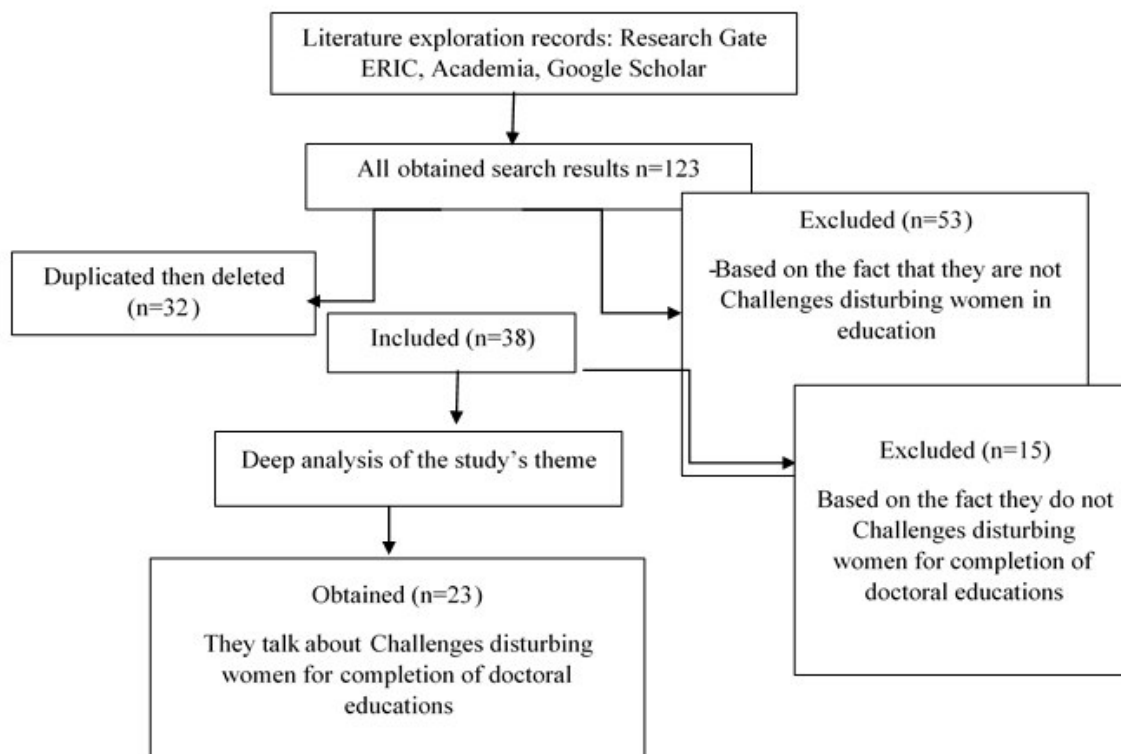
Figure 2: Diagram showing the selection process of the reviewed article.

Results

Dropout for women doctoral students

In most cases, doctoral faculties tighten entrance rules for doctoral programs to include only students who can resist the pressures of doctoral study (Lovitts B. E., 2001). PhD students are among the best and brightest students because of the stringent selection procedure for students' recruitment in doctoral programs (Ali & Kohun, 2006). Doctoral students are often strong performers with prior academic experiences that include several honors and other proof of recognized high achievement (Lovitts, 2001). Despite efforts to tighten entrance requirements in a handful of PhD programs, dropout rates remained high (Lovitts B. E., 2001; Lovitts & Nelson, 2000).

It is difficult to determine the actual number of students that drop out of PhD programs at colleges and universities each year for a variety of reasons. One of the many reasons is that students may drop out at various phases of the program. Another factor is that the length of time required to complete a PhD degree is not always specified. As a result, some students may spend years after finishing their course work waiting to complete their dissertation. Finally, there are no national statistics or public data on doctoral attrition (Lovitts, 2001). In spite of these challenges, several studies point to a specific number that they estimate as the percentage of students dropping out at various phases of PhD programs. The majority of the research evaluated put the percentage of PhD students dropping out of the program after they begin at 50%. (Lovitts, 2001; Ali & Kohun, 2006).

Some doctoral faculty believe that the main causes for students dropping out of PhD programs are the students' backgrounds. Barbara Lovitts (2001) has a different take on the reasons for drop-out among doctoral candidates. According to the author, what happens to students when they arrive at university is more important than their background features (Lovitts B. E., 2001; Ali & Kohun, 2006). Some of the reasons cited for the high percentage of doctorate student dropout are related to the student's life, financial concerns, and family duties. Others are related to the nature of the PhD program and its differences from earlier studies and programs successfully completed by the student. A third set of considerations blames the program's design for not creating a proper atmosphere for students to successfully complete their degree (Lovitts, 2001; Hawlery, 2003; Ali & Kohun, 2006). It was stated that the large number of PhD students who do not complete their degrees is due to a lack of knowledge of the system and its processes rather than a lack of intelligence (Hawlery, 2003). High drop-out rates among doctoral students, as well as high levels of distress during their studies, have been linked to issues with supervision, resources, an imbalance between research work and private life, a lack of adequate academic writing skills (Authors1,2021), learning, workload, frequent evaluation, and a competitive environment (Pyhältö, Toom, Stubb, & Kirsti, 2012; Bireda, 2015). The section that follows discusses some of the issues that prevent women PhD candidates from making meaningful progress and completing their programs.

Problems affecting the time completion of doctoral studies

There are various issues with women's PhD completion time for a variety of reasons. Several factors associated with degree completion duration have been reported in various research studies. Individual student worries about marital, familial, and health difficulties, the availability of funding resources, the character of the advising

relationship, and the amount to which students receive research preparation and opportunity are among these influences (Maher, Ford, & Thompson, 2004). The review paper's authors only concentrated on issues related to concurrent management, social isolation, loneliness, and stress, inappropriate socioeconomic circumstances, and supervisory relationships. This is as a result of the primary reasons why women stop pursuing doctoral degrees (Islam & Pavel, 2011).

Simultaneous management

To be able to complete their many obligations as a mother and student, almost all female students, particularly mothers, must cultivate their control over situations. Furthermore, these students must understand both planning and sacrificing. When roles overlapped, however, motherhood activities gained precedence (Moghadam, 2017). According to the findings, when women encountered uncertain conditions, they had to choose their homes and children over their academics. Furthermore, student mothers stated that the quality of their educational responsibilities is diminished since they spend the majority of their time at home with their children and family issues (Moghadam, 2017). As a result, expecting women to finish their education at the same rate as men would have overlooked a number of factors.

Social isolation

Doctoral programs differ between countries, institutions, and disciplines. Doctoral programs are distinguished by their structure, development method, and instructional elements, among other things. The doctoral experience is an emotional and difficult journey of becoming a scholar, and worry, uncertainty, social isolation, and loneliness may occur at various phases while completing a doctoral degree. The PhD experience can also be described as an emotional and multifaceted journey toward becoming a scholar (Janta, Lugosi, & Brown, 2014).

Despite variances in doctoral program structure (Nsanganwimana, 2018), creation process, and taught elements among nations, institutions, and fields, students pursuing PhD programs may experience anxiety, uncertainty, loneliness, and social isolation (Janta, Lugosi, & Brown, 2014). One of the main variables contributing to PhD student dropout that is often overlooked while developing most doctoral programs is the emotional aspect. Students are left alone to deal with their emotional concerns.

According to research findings, PhD student dropout is primarily associated with feelings of social isolation (Ali & Kohun, 2006; Hawlery, 2003) and stress (Lovitts B. E., 2001; Ali & Kohun, 2007). Social isolation is defined as the absence of significant social connections (Jairam & Kahl, 2012; Ali & Kohun, 2006). This social isolation is frequently exacerbated by common characteristics of PhD programs, such as being in a new, unfamiliar, and stressful setting (Ali & Kohun, 2007). Social isolation is one of the ignored emotional experiences that most doctorate students have during their PhD studies, which leads to failure or delay in completing the doctoral program (Lewis, Ginsberg, Davies, & Smith, 2004).

Loneliness and stress

Students' loneliness, which has a significant impact on their psychological health and well-being, contributes to dropout among PhD students (Janta, 2014). In fact, a lack of social connection made PhD students miserable, notwithstanding their good development and positive relationships with their supervisors. For international PhD students, isolation and loneliness are exacerbated by additional culture shock symptoms such as dread, insomnia, confusion, and despair (Janta, 2014). Furthermore, the problem of loneliness during the PhD journey may lead to a loss of crucial information. As a result, among the methods utilized to address the loneliness

problem include the provision of shared office space for PhD candidates in one discipline, communication, and networking (Janta, Lugosi, & Brown, 2014; Bireda, 2015; Bamgboje-Ayodele, Ye, Almond, & Sakulwichitsintu, 2016). Doctoral students' stress levels are also enhanced by large demands on their time, energy, intelligence, endurance, patience, and organizational skills (Ali & Kohun, 2007; Bireda, 2015). Stress was identified as the primary impediment to good simultaneous management of the roles of mother and student by mother students. Desperation, nostalgia, guilt for neglecting their children, exhaustion, physical pressure, a great deal of stress, and constant worry for their children and their studies were all present. Furthermore, these mother students felt selfish for not properly caring for their children and shame for abandoning his children (Moghadam, Khiaban, Esmaeili, & Salsali, 2017).

Inappropriate socio-economic conditions

Moghadam et al. (2017) discovered that concerns associated to inappropriate socioeconomic situations were prevalent problems for all participants in their study on maternity challenges and well-being as well as the studentship role among Iranian women. The authors discovered that some student moms prefer to continue working while studying or to seek a part-time job to cover the major and secondary expenditures of their education, as well as the costs of transportation, dwelling renting, food, and child care. Indeed, these many obligations present additional obstacles for both student mothers and their families as a whole (Bireda, 2015; Moghadam, Khiaban, Esmaeili, & Salsali, 2017).

Supervision relationship

Students must be dedicated to their studies in order to pursue a doctorate. Otherwise,

completing this PhD journey may be challenging. The achievement is attributed not only to the effort put in by students, but also to the effort put in by supervisors and university faculty members throughout the PhD process. As a result, this effort should be used properly in order to train skilled doctors (Pyhältö, Toom, Stubb, & Kirsti, 2012). Postgraduate supervision research studies can help us understand the nature of the supervisory relationship. While postgraduate supervision is a process that requires complicated intellectual and interpersonal skills, the supervisory relationship is characterized as a difficult and complex environment where emotions and conflicts can arise (Wendy & Pillay, 2014).

Doctoral students' sense of connection and likelihood of perseverance are mostly dependent on solid ties with their advisors (Berry, 2017). In fact, advisers play diverse and critical roles in doctorate students' experiences, mentoring and developing them professionally. Furthermore, advisors connect students to resources within the institution and assist them in developing professional and personal networks (Berry, 2017). Students' emotions during their studies are influenced by comments from their supervisors and other members of the scholarly community, which contributes to their study persistence when encountering hurdles and problems (Pyhältö, Toom, Stubb, & Kirsti, 2012; Bireda, 2015). Indeed, supervisors are regarded as one of the most influential variables defining their experiences. However, the quality and timeliness of their supervisor's input, instruction, encouragement, and motivation were mentioned as major concerns in research (Bireda, 2015). Even while various elements support effective completion of a doctoral study, most researchers agree that finishing a doctoral study is a process that mostly depends on the quality of research supervision (Lovitts

B. E., 2001; Bireda, 2015). (Lovitts B. E., 2001; Bireda, 2015).

Actually, the effectiveness and quality of research supervision support that doctorate students receive from their supervisors is important to their PhD path (Bireda, 2015). As a result, failing to provide doctoral students with enough support and shared control may result in ongoing negative friction between students and the learning environment. Furthermore, this friction may cause problems in the well-being of kids. Despite a high selection of undergraduate students, mental suffering may have a detrimental impact and lead to dropout (Pyhältö, Toom, Stubb, & Kirsti, 2012).

Supervisors must pay more attention to the individualized study strategies proposed by researchers. Furthermore, PhD students must be encouraged to think about their personal goals in their studies. Doctoral students' study experiences will be more meaningful to them if they have an active role in completing their studies towards a doctorate (Pyhältö, Toom, Stubb, & Kirsti, 2012). It has been stated that doctoral candidates may delay becoming PhD holders if they rely on their supervisor's availability and complete assistance. As a result, rather than relying on someone else's judgment, PhD students must take action to become self-sufficient. Furthermore, inadequate supervision, such as failing to read student works and failing to attend supervisory sessions, may have an impact on their future careers (Ndanguza & Mutarutinya, 2017). According to the authors' experience as former PhD students, supervisors want to guide their supervisees towards their own area of competence rather than allowing them to make their own choice (Ndanguza & Mutarutinya, 2017).

Relevance of the study and its contribution to existing literature

The findings of this study will be valuable to educators, particularly those looking for a meaningful strategy to aid students in reaching their full potential in the study of students' completion of PhD studies. According to the study's findings, university staff will develop motivation, self-confidence, and a positive view of women PhD candidates. Information will be generated in order to improve educational planning, decision-making, curriculum development, teaching and learning, the use of instructional media, and school organization in encouraging women PhD candidates to keep their learning and continue having focus. Women PhD candidates will be motivated to take ownership of their education if they are encouraged to think critically, evaluate themselves, and improve the quality of their efforts. Various scholars will also add this study's findings to the present literature on women PhD candidates learning approaches for future use, and further research can be done.

Limitations of the study

This study was limited by the inaccessibility of some papers that were commercial.

Conclusions

While providing an overview of challenges affecting completion of PhD studies for women PhD candidates, only a few issues contributing to the delay or failure of completion of doctoral studies by women PhD candidates were highlighted. Universities are taking various measures and attempts to establish a family-friendly environment for these students, but there is still much to be done to assist these students in coping with the problems of numerous obligations. Different issues for PhD students have been highlighted in the literature; however, only a handful addressed issues specific to women doctoral students, particularly mothers. Among the issues addressed in this review study are concurrent management, improper socioeconomic situations, social isolation, loneliness, and stress and supervision

relationships. To underline the relevance of Women PhD candidates' duties, assistance and education for obtaining abilities to perform these roles, as well as the structure of universities, should be family friendly.

Recommendations

Many factors, such as personal illness and the death of family members, are beyond the control of colleges. However, some activities within their control can be made to boost the likelihood that both female and male students will complete their degrees on time. Female doctoral students must be provided with comprehensive orientation in order to satisfy expectations as PhD students and cope with the nature of education. Students should be informed about various support systems at institutions during orientation meetings.

During orientation programs, admitted women PhD candidates should be given additional attention through counselling assistance. Supervisors, instructors, and administrators should be instructed on how to deal with women PhD candidates in their daily lives without being harsh or violent. Formalized student mentorship systems developed by institutions are recommended to help female PhD candidates receive academic updates, social, and psychological support from their peers. Through these mentoring arrangements, experienced PhD students who are making good progress in the program can share their expertise and experience with colleagues who are experiencing problems and delays.

A forum for this aim should be established in order to provide additional social support and facilitate experience exchange among female graduate students and female professors. In terms of supervision, colleges should assess how advising obligations are conducted in their PhD programs. At the faculty level, updated program information must be

delivered on a regular basis to ensure that all students are properly informed. Various obstacles impeding timely women's progress toward degree completion add to the potential loss of women in academic careers, which is far too high for students, institutions, society, and government to bear. Because there are enormous benefits to expanding the number of women PhD students and potential women doctoral degree holders, higher education should provide supportive environments to assist women in coping with their challenge. Furthermore, there is a need to provide chances and imaginative solutions to assist women in meeting the hurdles given by their laudable quest. There is a need for colleges with PhD programs to establish counselling centres to assist women doctoral students in developing coping techniques for dealing with various responsibilities and psychological and emotional challenges. For women PhD candidates, reducing the impact of confronted problems may be achieved by offering counselling intervention to improve their stress management abilities due to many duties connected to home life and education. Policies and other initiatives in place to assist women and girls in staying on track academically should be made flexible and dynamic. It has been said that teaching a female is equivalent to educating a complete nation.

As a result, higher-level officials should consider how to secure a large number of females in higher education by providing them with the appropriate assistance. To summarize, there is a need to improve our understanding of PhD students' experiences, challenges, and how such problems affect their degree progress and time completion. To lower female dropout rates, more women must be recruited into PhD programs, and more female-friendly conditions must be created. Furthermore, having supporting instructors

and mentors and fostering supportive behaviours would be beneficial methods.

Data Availability Statement

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request

Conflict of interest

There is no conflict of interest to disclose

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