ISSN: 2320-2882

www.ijcrt.org

IJCRT.ORG



INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Breaking Barriers And Empowering Girls: A Study On The Impact Of Education On Gender Equality And Women's Empowerment In Bangladesh

Salehin Mahbub¹, Arik Morshed², H M Atif Wafik³, Farhana Sharmin⁴

¹Lecturer, Department of Natural Science, The International University of Scholars, Dhaka, Bangladesh.
¹Asst. Professor, Department of Business Administration, The International University of Scholars, Dhaka, Bangladesh.
¹Asst. Professor, Department of Business Administration, The International University of Scholars, Dhaka, Bangladesh

¹Lecturer, The International University of Scholars, Dhaka, Bangladesh.

Abstract: This study focuses on the impact of education on gender equality and women's empowerment in Bangladesh, with a specific emphasis on breaking barriers and empowering girls. The introduction highlights the historical oppression of women and the need for women's empowerment in today's world. Bangladesh's progress in improving women's lives and gender equality is acknowledged. The background outlines the historical low social status of women and the existing gender disparities in education, marriage, and the workplace. The statement of the problem identifies the research's objective to examine barriers to girls' education and explore how education can promote gender equality and women's empowerment. The significance of the study lies in its potential to contribute to policy-making and gender discourse. The objectives of the research include assessing the current state of gender equality, examining the link between education and empowerment, identifying barriers to girls' education, and analyzing education's role in challenging gender roles. The research methods involve a literature review and qualitative data collection through interviews and observations of key stakeholders in Bangladesh. This discussion focuses on the status of girls' education in Bangladesh and the challenges it faces in achieving gender equality and women's empowerment. While progress has been made in increasing female literacy and enrollment,

¹ Lecturer, Department of Natural Science, The International University of Scholars, Dhaka, Bangladesh.

²Asst. Professor, Department of Business Administration, The International University of Scholars,

³ Asst. Professor, Department of Business Administration, The International University of Scholars, Dhaka, Bangladesh.

⁴ Lecturer, The International University of Scholars, Dhaka, Bangladesh.

economic vulnerability, patriarchal norms, and limited access in rural areas continue to hinder girls' education. The study emphasizes the importance of women's empowerment and the positive impacts it has on individuals, families, and society as a whole. The recommendations include implementing gender-sensitive policies, raising awareness, engaging communities, providing financial support, and improving educational infrastructure to ensure equal opportunities for girls in Bangladesh. Achieving these goals will contribute to the overall development of the country and foster a more inclusive and equitable society.

Keywords: Women Empowerment, Gener Equality, Girls' Education, Government Policies, United Nations Millennium Development Goal (MDG).

1.0 Introduction

Until the last century, women in many societies were denied basic human rights and their social status was low. This treatment of women not only affected their own lives, but it also hindered the healthy development of families, societies, and countries. Empowering women has become a necessity in today's world, and it is crucial for ensuring a more equitable and just society. Women's empowerment is not only a moral imperative but also a strategic one, as it leads to increased economic growth, reduced poverty, and improved health outcomes for families and communities (Jain, 2021). Bangladesh has made remarkable progress in improving the lives of women and girls over the past 20 years. Maternal mortality has fallen by more than two-thirds since 2000 and continues to decline. Bangladesh also has advanced regulations to protect women's rights and privileges, and with more women being educated, female labor market participation continues to expand (Gender Equality and Women's Empowerment | Bangladesh, 2023). Today, women empowerment has become a common concept in all corners of the world and many seminars, conferences and meetings on women empowerment are often held in metropolitan cities and other cities (Reza & Yasmin, 2019). It is disheartening that boys and girls are treated differently all over the world, with boys often given more importance than girls. This led to unfair treatment of girls and women and led to gender discrimination. Gender discrimination starts at home, where families may prefer a son over a daughter, or may favor their sons over their daughters. This bias is perpetuated by patriarchal societies where men are seen as superior and in control of the lives of the women in their families. This study will focus on the impact of education on gender equality and women's empowerment in Bangladesh and breaking the different barriers to empower the girls or women.

2.0 Background of the study

Until the last century, the social status of women was very low in many societies. Women were expected to take care of the household and children only, with the dominant male family member making all major decisions in their lives. Women were denied the right to inherit their father's or family's property and were discouraged from education. According to the United Nations, 40% of girls in South Asia and sub-Saharan Africa marry by their 18th birthday, highlighting the serious disadvantage faced by girls in these regions. In addition, girls face pays and workplace disparities in many parts of the world. Laws regarding marriage, divorce and custody of children, inheritance and other issues also continue to show large differences between boys and girls. Girls and boys should have equal importance and opportunities, and women should have the

freedom to make their own choices and decisions. We must break the patriarchal systems that perpetuate gender discrimination and ensure that women have equal access to education, employment and other opportunities. This study revealed the impact of education and other facilities on girls by breaking the social, economic and other barriers in Bangladesh.

3.0 Statement of the Problem

Breaking Barriers and Empowering Girls and impact of Education on Gender Equality and Women's Empowerment in Bangladesh is likely to focus on examining the current state of gender equality and women's empowerment in Bangladesh, particularly in the context of education. The aim of the study is to examine the existing barriers that prevent girls from accessing education and the factors that contribute to gender gaps in educational opportunities. In addition, they seek to understand how education can be a catalyst for promoting gender equality and empowering women in various aspects of their lives.

4.0 Significance of the Study

Gender inequality remains a critical issue in many parts of the world, including Bangladesh. This research focuses on understanding the role of education in removing barriers and promoting gender equality, which is essential to achieving a fairer and more just society. By specifically examining the impact of education on girls, the research recognizes the unique challenges and barriers they face in accessing education and opportunities. Empowering girls through education can lead to a more inclusive and prosperous society. Education is a powerful tool for women's empowerment. Through education, women can gain knowledge, skills and confidence, enabling them to be more actively involved in various areas of life, including the economy, politics and social development. Educated women can contribute significantly to the social and economic development of a country. By studying the impact of education on women's empowerment in Bangladesh, the research sheds light on how investment in education can lead to positive outcomes for the nation as a whole. The findings of this study may have practical implications for policy makers and organizations working to promote gender equality and women's empowerment. Understanding the link between education and empowerment can help shape more effective policies and interventions. Research on this topic can contribute to the existing body of knowledge on gender equality, women's education and empowerment, and help bridge gaps in understanding and inform future studies. Finally, this research has the potential to contribute significantly to the discourse on gender equality and women's empowerment, with particular relevance to the Bangladeshi context, while offering broader insights applicable to other regions facing similar challenges.

5.0 Objectives of the Study

1. To assess the current state of gender equality in Bangladesh, particularly focusing on educational opportunities and barriers faced by girls and women.

2. To examine the relationship between education and women's empowerment in Bangladesh and examine how access to education affects women's economic, social and political empowerment.

3. To identify the key challenges and barriers that prevent girls from accessing and completing education in Bangladesh, such as socio-cultural norms, economic factors and institutional barriers.

4. To analyze the impact of education in breaking down traditional gender roles and stereotypes and its role in promoting a more just society.

6.0 Research Methods

Before conducting primary research, researchers usually conducted a thorough review of the existing literature on the topic. Qualitative data were collected through interviews with key stakeholders such as government officials, educators, community leaders, and girls and women who have experienced or are currently experiencing the education system in Bangladesh. The researchers analyzed relevant documents, policy documents, reports and educational materials to gain insight into the government's approach and initiatives regarding education and gender issues in Bangladesh. Observational methods were used to observe and record interactions in the learning environment. This involved observing classrooms, school events or community meetings to understand gender dynamics and the extent of girls' participation in educational activities.

7.0 Literature Review

Reza & Yasmin (2019) said in their study that women around the world are resourceful economic agents who overcome stubborn gender barriers to support the health, education and economic survival of their families. Empowerment of women is a developing and most debated issue all over the world. Women's empowerment is a universal concept and a multidimensional approach and is not an easy or straightforward process. It is a time that is a process of women's awareness, alternatives, resources, voice, agency and participation. The empowerment of women depends on the cultural, social, economic and political aspects of the country. Half of the population of Bangladesh are women, and their economic participation has increased significantly.

Jain (2021) explored the meaning, concept and definition of women empowerment. Overall, women's empowerment is essential to achieving a fairer and more just society. It is not only a moral imperative, but a strategic one as it leads to increased economic growth, reduced poverty and improved health outcomes for families and communities. By empowering women, we can break down the barriers that have prevented them from reaching their full potential and create a better world for all.

Kabeer (2005) explained that gender equality and the empowerment of women is the third of the eight Millennium Development Goals. It is an intrinsic rather than an instrumental goal, which is explicitly valued as an end in itself rather than as a tool to achieve other goals. Importantly, the translation of this goal into the goal of closing the gender gap at all levels of education in the given time period is disappointingly narrow. However, the indicators for tracking progress towards the goal are somewhat broader: (i) closing the gap between men and women in education at all levels; (ii) increasing the share of women in wage employment in the non-agricultural sector; (iii) and increasing the proportion of seats occupied by women in national parliaments.

McCleary-Sills et al. (2015) discussed the benefits of education are thus transmitted across generations and to communities as a whole. Where girls have greater educational and economic opportunities, they are more likely to take advantage of those opportunities than to have children in their teens. Yet a number of structural, social and financial barriers prevent girls from enrolling in and completing both primary and secondary school.

Klugman et al. (2014) explored that education is not only a human right, but also a powerful tool for women's empowerment and a strategic investment in development. Girls' education has a clear multiplier effect; educated women are healthier, participate more in the formal labor market, earn more income, have fewer children, and provide their children with better health care and education compared to women with little or no education.

Islam & Jirattikorn (2023) examined the underrepresentation of women in STEM education in Bangladesh and suggests ways to increase their participation to help achieve the Sustainable Development Goals (SDGs) of ensuring quality education for all. Less attention is paid to the relationship between women's participation in general education and their representation in STEM subjects. Although the number of students at the tertiary level has increased, their representation in STEM fields remains slow for various reasons - e.g. societal perception, insufficient infrastructure, e.g. equality in education, measures directly aimed at increased participation of women in STEM education are lacking.

Pitt et al., 2006) revealed the effects of rapid increases in gender parity in primary schooling in Bangladesh and Malawi on gender inequities in schools and communities. Based on an analysis of comparative case studies of marginalized communities, we argue that educational initiatives focused on achieving gender parity provide limited evidence that girls' educational experiences modeled significantly different gender norms than in communities, or that by being educated, girls experienced a transformation of the inequitable gender relations they faced in society.

Chisamya et al. (2012) studied the effects of rapid increases in gender parity in primary education in Bangladesh and Malawi on gender inequalities in schools and communities. Based on an analysis of comparative case studies of marginalized communities, we argue that educational initiatives aimed at achieving gender parity provide limited evidence that girls' educational experiences modeled significantly different gender norms than in communities, or that education transformed girls from the inequitable gender relations they faced in society. Dejaeghere & Lee (2011) used a capabilities-based approach as an analytical framework to understand what influences girls' and boys' educational well-being and empowerment in a rural district in Bangladesh. They draw on critical feminist perspectives on empowerment to illustrate how gender inequalities are perpetuated in structures and norms in communities and schools. They argued that specific conditions can differentially marginalize or empower, and these conditions have persistent gender patterns. The conditions of a safe, supportive and quality educational environment promote opportunities for empowerment and well-being, and conversely, the lack of these conditions can marginalize children from achieving well-being through education.

Zafarullah & Nawaz (2019) found that Bangladeshi women are making steady progress towards empowerment through a gradual increase in female labor force participation, particularly in the garment manufacturing sector. The expanding arena of microfinance also provides an opportunity for a growing number of women to run productive small-scale businesses that also provide informal employment to unemployed women in rural areas. However, social and cultural constraints and apparent conservatism are daunting challenges for women entrepreneurs, and women in formal employment continue to suffer discrimination, harassment and adverse working conditions.

8.0 Discussion

Girls' Education in Bangladesh

In a developing country like Bangladesh, which is one of the most promising emerging economies, it is absolutely essential to invest in nurturing the workforce of tomorrow. Achieving universal primary education is the second United Nations Millennium Development Goal (MDG). However, the rate of male and female enrollment in education will lead one to believe that Bangladesh is far behind its contemporaries. For example, Sri Lanka's literacy rate in 2016 is 92 percent, the highest literacy rate in South Asia. India's literacy rate is 74 percent. Bangladesh has a literacy rate of 70 percent as of 2016, and while the number itself is close to India's, there is a huge difference in economic factors such as population to consider (Amin & Nuzhat, 2016). It is very important to know the status of women in education because women make up almost half of our population. The analysis found that the female literacy rate increased by 41.8% to 55.7% from 2001 to 2011. Therefore, the enrollment rate of female students at the secondary level increased by 46.23% to 51.96% from 2001 to 2011, and in 2011 there were 25 successful 3 female students. it was 88.88%. On the other hand, in 2003 the pass rate of female students was 38.14% and in 2012 it was 79.19% at the HSC level. The Government of Bangladesh has taken various initiatives to improve the status of women in education. In the field of education, various projects are underway to improve education. Document analyzes revealed that 57% of SEQAEP beneficiaries are female students. On the other hand, female students receive a scholarship from HSFSP and SESP (Salahuddin et al., 2014).

Gender Roles and Girls' Education

In Bangladesh, patriarchy is highly prevalent in all phases of society. Under this system, the father or, in his absence, another older man is considered the head of the household. As a result, decisions about girls' participation in education and other activities are mostly driven by the head of the household within family relationships.

Economic Vulnerability and Girls' Education

In rural Bangladesh, a large number of people live below the poverty line, which also affects girls' educational attainment. Current research found that for economic reasons, a large number of parents considered educating girls as a waste of funds. Girls were found to be treated only for reproductive and domestic tasks within family boundaries. A large number of participants from socio-economically disadvantaged families expressed that poor social status and traditional culture were important factors in girls' educational attainment.

Aspirations of Women for Post-Marital Education

The most women described education, both school and training, or married women as ordinary. Women who were not forced to stop their education by family members eventually stopped their education because they were overloaded with household responsibilities. Women were more likely to have educational aspirations if they had any type of desire to generate income.

Men's support to women's access to education

After marriage the husband had key decisions about whether their wives continued their education. Typically, men were expected to control household resources and work outside the home to support the family, including the ability of all family members. Even when husbands emigrated to work abroad, wives were expected to consult with their husbands about educational options. Expectations of support or restriction from men informed women's aspirations as well as the extent to which men allowed wives to pursue education. Many women expected their husband's support or restraint even before she did so explicitly.

The Importance of Women Empowerment

The healthy development of families, societies, communities and countries requires empowerment women. Empowerment of women refers to reducing gender gaps and providing equal opportunities to women work, earn and make decisions. It means giving women more power to fulfill their desires, to achieve financial means independence and gain social recognition. There are different definitions for women's empowerment. According to Wikipedia, it is "the process by which women develop and reshape what they can be, do, and achieve in Huff post describes it as "a process of increasing capacity individuals or groups to make decisions and transform those decisions into desirable actions and outcomes." World Vision Australia defines women's empowerment as promoting women's self-esteem, the ability to determine one's choices and the right to influence social change for oneself and others. Women empowerment means giving women every opportunity and facility they deserve to get the most out of themselves. It includes a woman's sense of selfworth, her right to have and make choices, her access to opportunities, and resources and her power to control her life inside and outside the home. Women's empowerment needs improvement in various aspects of life, including emotional, social, political, educational, medical and economic.

Benefits of Women Empowerment

Empowerment of women benefits not only individual women, but also has a positive impact on families, companies and countries. It enables women to live with dignity and self-respect, which in turn increases their self-worth and self-confidence. When women are empowered, they are better recognized and appreciated, which leads to their increase their social value and status. Empowering women empowers them to make financial decisions and makes them financially independent and independent reducing their dependence on men. Gender discrimination is eliminated, paving the way for a more equal society. In addition, better health and medical facilities lead to better health for women and improved health for their children and family. When women are employed, they contribute to the family's income, leading to an increase in per capita income and improving the standard of living of the family. Moreover, an educated woman is more likely prioritize the education of their children and thus contribute to the improvement of literacy in the country. Finally, women can play a major role in protecting and preserving the environment and achieving sustainable development growth targets. By empowering women, society benefits from their knowledge, skills and abilities.

Impact of Education on Gender Equality and Women's Empowerment in Bangladesh

Education has played a key role in promoting gender equality and empowering women in Bangladesh. Over the years, the country has made significant progress in expanding educational opportunities for both boys and girls, which has had a positive impact on various aspects of gender equality and women's empowerment. Access to education has led to a significant increase in female literacy in Bangladesh. As more girls attend school, they develop basic skills and knowledge that enable them to be more actively involved in different areas of life. Education has opened up economic opportunities for women in Bangladesh. Educated women are more likely to enter the workforce and secure better-paying jobs, contributing to their economic independence and reducing their dependence on male family members. Education plays a vital role in increasing health awareness and family planning. Educated women tend to have better knowledge of health procedures, which leads to improved health outcomes for mothers and children. One of the significant consequences of girls' education is the reduction of child marriage. When girls stay in school, they are less likely to marry at a young age, giving them more control over their lives and choices. Education equips women with the necessary skills to participate in decision-making processes at the family, community and societal levels. This increased participation contributes to a more inclusive and fair society. Education challenges traditional gender norms and stereotypes. When girls and women have access to education, they are better equipped to question and challenge societal expectations that limit their opportunities and roles. Education is associated with reduction of gender-based violence. Educated women are more aware of their rights and better equipped to protect themselves from abuse and exploitation. Education has also contributed to the increased political participation of women in Bangladesh. Educated women are more likely to get involved in politics, defend their rights and hold leadership roles in various sectors.

Despite these positive impacts, challenges remain, in rural and marginalized areas, access to education, especially for girls, may still be limited due to socio-economic factors, cultural norms and infrastructure limitations. Continued efforts to improve educational opportunities and remove barriers for girls and women are critical to further advancing gender equality and women's empowerment in Bangladesh.

9.0 Findings of the Study

1. Bangladesh has made progress in achieving universal primary education, which is the second United Nations Millennium Development Goal (MDG). However, the rate of male and female enrollment in education suggests that the country lags behind its regional counterparts, such as Sri Lanka and India.

2. The female literacy rate in Bangladesh increased from 41.8% to 55.7% between 2001 and 2011. There has been an improvement in the enrollment rate of female students at the secondary level as well.

3. Economic reasons play a significant role in limiting girls' access to education in rural Bangladesh. Many parents consider educating girls as a waste of funds and expect them to focus on reproductive and domestic tasks.

4. Patriarchy is deeply entrenched in Bangladeshi society, with decisions about girls' education often driven by the male head of the household. This can lead to limited opportunities and choices for girls and women.

5. Women who are not forced to stop their education may still face challenges due to household responsibilities. However, many women aspire to receive education and generate income for themselves.

6. Husbands often have a significant say in whether their wives continue their education. Men's support or restriction can impact women's educational aspirations and opportunities.

7. Women's empowerment is crucial for the development of families, societies, and countries. Empowered women have better self-esteem, financial independence, and decision-making abilities.

8. Women's empowerment not only benefits individual women but also has positive effects on families, companies, and countries. It leads to more equal societies, improved health outcomes, increased income, and better education for children.

9. Education has played a vital role in promoting gender equality and women's empowerment in Bangladesh. It has led to increased female literacy, economic opportunities, health awareness, reduced child marriage, and increased political participation of women.

IJCRT2308038 International Journal of Creative Research Thoughts (IJCRT) www.ijcrt.org a323

10. Despite progress, challenges persist in providing equal access to education for girls, especially in rural and marginalized areas. Socio-economic factors, cultural norms, and infrastructure limitations continue to hinder girls' education.

10.0 Recommendations of the Study

The government should develop and implement gender-sensitive policies and programs that specifically target the barriers faced by girls in accessing education. These policies should address socio-economic factors, cultural norms, and infrastructural limitations. Launch awareness campaigns that emphasize the importance of girls' education and its positive impacts on families, communities, and the nation. These campaigns should target parents, communities, and religious leaders to change the perception that educating girls is a waste of resources. Engage with local communities to gain their support and involvement in promoting girls' education. Community leaders, including religious leaders, can play a significant role in influencing attitudes towards girls' education. Provide financial incentives or scholarships to girls from economically disadvantaged backgrounds to encourage their enrollment and retention in schools. This can help alleviate economic reasons that limit girls' access to education. Education should not only focus on academic knowledge but also on developing skills and awareness that empower girls and women to make informed decisions about their lives, health, and finances. Provide gender sensitivity training to teachers and school staff to create a supportive and inclusive learning environment for girls. This can help reduce biases and stereotypes that may affect girls' educational experiences. Involve male family members in promoting girls' education. Highlight the benefits of educated women in the family and society and encourage fathers and husbands to support their daughters' and wives' educational aspirations. Invest in improving educational infrastructure, particularly in rural and marginalized areas, to ensure that schools are accessible and safe for girls. Establish and support non-formal education initiatives that cater to the needs of girls who may not be able to attend regular schools due to cultural or other constraints. Regularly monitor and evaluate the progress of initiatives aimed at promoting girls' education. Use data to identify gaps and areas for improvement, and make necessary adjustments to policies and programs.

11.0 Conclusion

In conclusion, girls' education in Bangladesh has improved, female literacy rates and secondary enrollment have increased. However, problems persist due to economic vulnerability, patriarchal norms and limited access in rural areas. Empowerment of women is essential for the overall development of the country and supporting girls' education plays a vital role in achieving this goal. To further promote gender equality and women's empowerment, the government should implement gender-sensitive policies, raise awareness, engage communities and provide financial support. Improving educational infrastructure and creating an inclusive learning environment are also essential steps to ensure equal opportunities for girls in Bangladesh.

- Amin, S. B., & Nuzhat, M. (2016, August 17). Female education in Bangladesh. The Daily Star. https://www.thedailystar.net/op-ed/politics/female-education-bangladesh-1270750
- Chisamya, G., DeJaeghere, J., Kendall, N., & Aziz Khan, M. (2012). Gender and Education for All: Progress and problems in achieving gender equity. International Journal of Educational Development, 32(6), 743–755. https://doi.org/10.1016/j.ijedudev.2011.10.004
- Dejaeghere, J., & Lee, S. K. (2011). What Matters for Marginalized Girls and Boys in Bangladesh: A Capabilities Approach for Understanding Educational Well-Being and Empowerment. Research in Comparative and International Education, 6(1), 27–42. https://doi.org/10.2304/rcie.2011.6.1.27
- Gender Equality and Women's Empowerment | Bangladesh. (2023, April 6). U.S. Agency for International Development. https://www.usaid.gov/bangladesh/gender-equality-and-womens-empowerment
- Islam, N., & Jirattikorn, A. (2023). Breaking gender barriers in STEM education for achieving the SDG of quality education in Bangladesh. Development in Practice, 0(0), 1–7. https://doi.org/10.1080/09614524.2023.2229965
- Jain, D. N. K. (2021). Breaking Barriers: Empowering Women for a Better World. International Journal of Innovative Research in Science, Engineering and Technology (IJIRSET), 10(5), 5719–5723.
- Kabeer, N. (2005). Gender equality and women's empowerment: A critical analysis of the third millennium development goal 1. Gender & Development, 13(1), 13–24. https://doi.org/10.1080/13552070512331332273
- Klugman, J., Hanmer, L., Twigg, S., Hasan, T., McCleary-Sills, J., & Santamaria, J. (2014). Voice and Agency: Empowering Women and Girls for Shared Prosperity. World Bank Publications.
- McCleary-Sills, J., Hanmer, L., Parsons, J., & Klugman, J. (2015). Child Marriage: A Critical Barrier to Girls' Schooling and Gender Equality in Education. The Review of Faith & International Affairs, 13(3), 69–80. https://doi.org/10.1080/15570274.2015.1075755
- Pitt, M. M., Khandker, S. R., & Cartwright, J. (2006). Empowering Women with Micro Finance: Evidence from Bangladesh. Economic Development and Cultural Change, 54(4), 791–831. https://doi.org/10.1086/503580
- Reza, M. H., & Yasmin, N. (2019). Empowering Women: Empowering Bangladesh. Open Journal of Women's Studies, 1(1), 15–23.

© 2023 IJCRT | Volume 11, Issue 8 August 2023 | ISSN: 2320-2882

Salahuddin, M., Khatun, R., & Bilkis, S. (2014). Present Situation of Female Education in Bangladesh: An Overview of Last Decade (SSRN Scholarly Paper 3372022). https://papers.ssrn.com/abstract=3372022

Zafarullah, H., & Nawaz, F. (2019). Pathways to women's empowerment in Bangladesh: Employment and microfinance as interventions. Asian Education and Development Studies, 8(4), 387–404. https://doi.org/10.1108/AEDS-11-2018-0168

