Gender Inequity in Cardiovascular Care - Global Perspective

Zamzamy Raniah E¹, Kinsara Abdulhalim J²

Abstract

In the last decades, promotion of women's health has become a growing field for health professionals. Although global society has recognized the importance of providing women with appropriate health services to maintain healthy families and communities, women are still underserved in every segment of health systems worldwide. The inequity in health services for women results from a lack of knowledge, stigma, and social norms for women. This gender inequity exists in every segment of the health system worldwide. In this paper, a review of online global research on an important health issue for women has been conducted. The findings indicate that women with cardiovascular disease are struggling with gender inequity in health services throughout the world. Recommendations for addressing this dilemma require more investment in research into women's health; empowering women to have a role in decision making, and in global collaboration to replicate successful models and programs for women's health.

Introduction

This paper provides data about women with cardiovascular disease to emphasize inequity of treatment. Cardiovascular disease accounts for more than half of women's deaths globally.¹

The definition of gender equality states that the processes for decision making and resource usage should provide the same initial level of opportunities and access for both male and female patients.²

Gender analysis of medical investigations and procedures carried out has been used to pinpoint and treat health inequalities that have resulted either from the different social norms and roles of women and men, or from the imbalanced authority in their relationships and the effects of these inequalities on their health.³⁻⁴

Gender inequity in social, economic, and environmental circumstances has led to huge disparities and inequalities for health outcomes for both genders; especially for women. Therefore, making more effort to improve gender equity and to reach for gender sensitivity is a core principle for women's health. Women's overall health is a result of the interaction of multiple factors that create a cycle of health, wellness, illness, and disability. The aim of this literature review is to introduce examples of how pandemics, chronic diseases, and physical disabilities are related to one another, and how they influence the nature of the health services available and cultural reactions towards women.

The most visible areas in which women face health disparities are due to cultural norms, medical bias, and health-policy ignorance. The awareness of gender equity varies according to countries and cultures.

Methods

This systemic review was conducted using two search engines: Google Scholar and Summon. The studies were not limited to a specific country or race because of the aim of attaining a global view of women's health issues with respect to the health care services they receive. There was random selection for countries: random names of countries from each region were used with the key words until appropriate articles were found. All publications included were written in English and complied with the inclusion criteria of original research, studies, and meta-analyses for cardiovascular diseases and gender inequity.

Results

Studies of cardiovascular disease in Finland and Brazil have shown the disparity between women and men; women being consistently under diagnosed and undertreated compared with men.⁵⁻⁹ Women face difficulties in getting the help they need to prevent death from cardiovascular disease.^{1,8,10} The causes have ranged from differences in presenting symptoms to insufficient care during hospitalization period after surgery; where the death rate is high for women.^{8,11-14}

Until recently, women were not included in clinical trials, which led to misdiagnosis and mistreatment of heart disease in women.9,15-16 For example, a meta-analysis for clinical trials of aspirin therapy to reduce the risks of cardiovascular disease-related deaths only included 20% female participants. Such a percentage cannot establish a strong dataset about the impact of this medication on women.17 Another example is coronary artery bypass graft surgery, with clinical trials for this procedure excluding women.¹⁸ Most symptoms of cardiovascular disease in women appear in advance of hospitalization and chest pain. These symptoms include edema, shortness of breath, lightheadedness, dry cough, and exhaustion.¹⁰⁻¹³ Due to these variations women are disadvantaged from the high technological procedures for diagnosis or treatment of cardiovascular disease.19

Although women are at higher risk of developing heart disease than men, there is still ignorance about the

¹Research Coordinator, King Abdullah International Medical Research Center / King Saud bin Abdulaziz University for Health Sciences, Research Office – MNG-HA; ²Associate Professor of cardiology, King Saud bin Abdulaziz University for Health Sciences, COM-J. King Abdul Aziz Medical City. King Faisal cardiac center - MNG-HA Received: 21.09.2017; Accepted: 19.04.2018

possibility of death from cardiovascular disease; especially for young women, due to the presence of estrogen.13,20-²¹ Estrogen inhibits the formation of atherosclerosis and artery spasm, causes vasodilation, and improves endothelial function and so enhances the functioning of blood vessels.8,22-23 In Asia and Australia, the risk of dying from cardiovascular disease is higher for women; especially for smokers and ex-smokers.²⁴ A study in Europe indicated that women have a lower risk of developing cardiovascular disease but women who smoke have a higher risk of disease than nonsmokers.²⁵ Death from cardiovascular disease in women is linked to high concentrations of triglyceride.9,26 A study in Saudi Arabia indicated that the prevalence of cardiovascular disease is lower in females than in males.27 However, the number of female participants in this study was very small as compared with the number of male participants, which is more evidence of the lack of research into women's cardiovascular health. There is some evidence for gender bias and inequity in using technological diagnostic methods and surgical procedures for women who have problems with heart disease.6,8,28

Health services for women with heart disease should address every segment of health and wellbeing. However, rehabilitation programs for female patients with cardiovascular disease in Iran are more effective than for male patients.²⁹

Reproductive health faces significant limitations in addressing women with cardiac diseases; since contraceptives may negatively impact reproductive health. There is poor communication between health care providers and their female cardiovascular patients regarding reproductive health concerns and precautions.^{12,30} More attention in this area is needed to ensure that the reproductive health needs of this group of women do not affect their cardiovascular health.

In Indonesia, there is a gender behavior pattern that needs to be addressed regarding the awareness and prevention of cardiovascular disease. Women are responsible for the health of families and for maintaining the household. Thus, they may not have the time to take care of themselves.³⁰

Mental health is an important factor

in preventing heart disease. Japanese women who have mental health problems have a higher mortality rate from stroke and coronary heart disease than men.³¹⁻³² Women in Sweden showed a strong link between stress and angina (33). Moreover, American women who suffer from stress have a higher risk of developing pseudo myocardial infarction and coronary heart disease.34-³⁵ Therefore, maintaining accessible and effective mental health services for women is important to decrease the risk and the burden of cardiovascular disease.¹⁶ This global perspective provides supporting evidence that there is an urgent need to maximize efforts to prevent cardiovascular disease in women.

Discussion

Social and cultural norms create various gender stereotypes for both men and women. Health inequity for women is the result of these stereotypes; since it impacts women's ability to access health care services and shapes the negative attitude of some health care providers towards those women. Collaborative work across health and social care is the key factor to promote women's health and eliminate gender inequity.

Barriers and Factors for Health Inequity

This huge gap in treating women's health issues effectively is due in part to lack of research and also to the absence of policy to support gender-based medicine and gender sensitivity. In the 1970s, women were excluded from clinical trials because it was claimed that factors such as the menstrual cycle and menopause would change the response to the medicine. In addition, the possibility of pregnancy would increase the responsibilities of the researchers. It was assumed that there was no difference between men and women in the responses to a drug and any pathology it might cause, owing to the lack of knowledge of female physiology.36-37

Another factor in the lack of genderbased research is that policy makers are ignorant about the gender differences between men and women, which lead to different health needs; even though several studies have indicated the need for a more gender-based approach to research and treatment. Existing plans to fund health care systems that address the unique problems faced by women seeking health services are not effective and the poor health outcomes for women subsequently impact the SES for women.^{19,38} Government should support working women by creating policies that support good health and quality of life, such as appropriate prenatal and dependent health-care leave policies.³⁸ More women than men live in poverty and women are more likely to be unable to afford health care or to get treatment.⁷

However, the cardiovascular health disparity in women is mainly due to inadequate knowledge about women and cardiovascular diseases.³⁹⁻⁴⁰ In addition, insufficient efforts are being made to increase women's awareness of cardiovascular disease.⁴¹⁻⁴²

Recommendations

There is an urgent need to implement more strategies and models to minimize the gap in gender equity in health. The Center for Disease Control and Prevention has designed a Well-Integrated Screening and Evaluation for Women Across the Nation (WISEWOMEN) program for screening and prevention. The program has been shown to have a significant impact in promoting the health of populations at risk.43-44 Another successful model in the US is Heart Truth, which uses social media to reach women and increase their awareness of cardiovascular disease.45 The search did not find any successful models for promoting women's cardiovascular health in Africa or the Middle East.

The Institute of Gender and Health in Canada has identified the national health priorities through brainstorming and interviewing sessions with the public and professionals. Combining these data with research reviews and analysis methods will increase national and international knowledge about the impact of sex and gender on health and ultimately influence policy, leading to implementation of programs to address gender inequity.⁴⁶

It is important that staff are trained in gender sensitivity and that institutes practice it. Appropriate training should be initiated after gender analysis guidelines have been used to evaluate for gender sensitivity.⁴ More research into the

genetic, physiological, and behavioral differences between sexes and genders is required. In addition, any research should consider cultural differences within different communities and ethnicities. It is critically important that governments should implement policies that include more women in decision making in health care systems to minimize gender inequity. The media and other organizations in society should be encouraged to participate in supporting women; especially vulnerable groups of women who suffer from cardiovascular disease. In addition, vulnerable subgroups such as the elderly, pregnant women, teenagers, and those with low income must be considered. Governments and other organizations should recruit more volunteers to engage the public with these vulnerable groups, and to eliminate the stigma and barriers that prevent society from reaching out to help. National and international collaboration will be needed to initiate these measures.

Limitations

It was difficult to find studies carried out in a number of different countries.

Conclusion

The inequity in health services that women face globally is directly linked with the knowledge and understanding of sex and gender by health professionals, governments, and society. Women are always at risk as they live under different types of inequity, even in the most developed countries. The lack of effort towards empowerment and limited knowledge of women's needs have a strong impact on current levels of health inequity. For society to be healthy, we must first have healthy women, and therefore strong global advocacy and collaboration is needed.

Acknowledgement

We would like to thank Dr Rodriguez Daniel, PH.D Associate Professor of Public Health, Philadephia, USA for his help in Concept and revising the article.

References

- Pilote L, Dasgupta K, Guru V, Humphries KH, McGrath J, Norris C, et al. A comprehensive view of sex specific issues related to cardiovascular disease. CMAJ 2007; 176:S1-44.
- Canadian Association of Advancement of Women and Sport and Physical Activity. Cited (2015). Available from http:// www.caaws.ca/

- New Zealand's International Aid and Development Agency. Cited (2015). Available from http://www.aid.govt.nz/sites/ default/files/Gender%20Analysis%20Guideline.pd
- 4. World Health Organization. Cited (2015). Integrating gender perspectives in the work of WHO: WHO Gender Policy.
- Castanho VS, Oliveira LS, Pinheiro HP, Oliveira HC, de Faria EC. Sex differences in risk factors for coronary heart disease: a study in a Brazilian population. BMC Public Health. 2001; 1:3: Epub 2001 Apr 3.
- Michou SM, Kähönen M, Lehtimäki T, Nikus K, Viik J, Niemelä K, et al. Age and gender biases in secondary prevention of coronary heart disease in a Finnish university hospital setting. *Clinical Drug Investigation* 2007; 10:673-81.
- Mosca L, Benjamin EJ, Berra K, Bezanson JL, Dolor RJ, Lloyd-Jones DM, et al. Effectiveness-based guidelines for the prevention of cardiovascular disease in women–2011 update: a guideline from the American Heart Association. J Am Coll Cardiol 2011; 57:1404-23.
- Vaccarino V, Rathore SS, Wenger NK, Frederick PD, Abramson JL, Barron HV, et al. National Registry of Myocardial Infarction Investigators. Sex and racial differences in the management of acute myocardial infarction, 1994 through 2002. N Engl J Med 2005; 353:671-82.
- Roeters van Lennep JE, Westerveld HT, Erkelens DW, van der Wall EE. Risk factors for coronary heart disease: implications of gender. *Cardiovasc Res* 2002; 53:538-49.
- Gulati M, Cooper-DeHoff RM, McClure C, Johnson BD, Shaw LJ, Handberg EM, et al. Adverse cardiovascular outcomes in women with nonobstructive coronary artery disease: a report from the Women's Ischemia Syndrome Evaluation Study and the St James Women Take Heart Project. Arch Intern Med 2009; 169:843-50. doi: 10.1001/ archinternmed.2009.50
- Blum A, Sirchan R, Keinan-Boker L. Gender effects on acute heart failure. *International Journal of Clinical Medicine* 2011; 2:254-9.
- Hansen S. Mental health issues associated with cardiovascular disease in women. *Psychiatr Clin North Am* 2003; 26:693-712.
- Miller CL. Symptom reflections of women with cardiac disease and advanced practice nurses: a descriptive study. *Prog Cardiovasc Nurs* 2003; 18:69-76.
- Tunstall-Pedoe H, Kuulasmaa K, Amouyel P, Arveiler D, Rajakangas AM, Pajak A. Myocardial infarction and coronary deaths in the World Health Organization MONICA Project. Registration procedures, event rates, and case-fatality rates in 38 populations from 21 countries in four continents. *Circulation* 1994; 90:583-612.
- Society for Women's Health Research and FDA. Dialogues on Diversifying Clinical Trials: Successful Strategies for Engaging Women and Minorities in Clinical Trials. Cited (2015). Available form http://www.fda.gov/downloads/ ScienceResearch/SpecialTopics/WomensHealthResearch/ UCM334959.pdf
- Weidner G1, Cain VS. The gender gap in heart disease: lessons from Eastern Europe. Am J Public Health 2003; 93:768-70.
- Berger JS, Roncaglioni MC, Avanzini F, Pangrazzi I, Tognoni G, Brown DL. Aspirin for the primary prevention of cardiovascular events in women and men: a sex-specificmeta-analysis of randomized controlled trials. JAMA 2006; 295:306-13.
- Vaccarino V1, Abramson JL, Veledar E, Weintraub WS. Sex differences in hospital mortality after coronary artery bypass surgery: evidence for a higher mortality in younger women. *Circulation* 2002;105:1176-81.
- Cruz I, Serna C, Real J, Galindo G, Gascó E, Galván L. Ischemic heart disease and primary care: identifying genderrelated differences. An observational study. BMC Fam Pract 2008; 9:60. doi: 10.1186/1471-2296-9-60.
- Babiker FA, De Windt LJ, van Eickels M, Grohe C, Meyer R, Doevendans PA. Estrogenic hormone action in the heart: regulatory network and function. *Cardiovasc Res* 2002; 53:709-19.
- Bush TL, Barrett-Connor E, Cowan LD, Criqui MH, Wallace RB, Suchindran CM, et al. Cardiovascular mortality and noncontraceptive use of estrogen in women: results from the Lipid Research Clinics Program Follow-up Study. Circulation 1987; 75:1102-9.
- Leonardo F1, Medeirus C, Rosano GM, Pereira WI, Sheiban I, Gebara O, et al. Effect of acute administration of estradiol 17 beta on aortic blood flow in menopausal women. *Am J Cardiol* 1997; 80:791-3.
- Mendelsohn ME, Karas RH. Molecular and cellular basis of cardiovascular gender differences. *Science* 2005; 308:1583-7.
- 24. Woodward M, Lam TH, Barzi F, Patel A, Gu D, Rodgers

A, et al. Asia Pacific Cohort Studies Collaboration. Smoking, quitting, and the risk of cardiovascular disease among women and men in the Asia-Pacific region. Int J Epidemiol 2005; 34:1036-45.

- Conroy RM, Pyörälä K, Fitzgerald AP, Sans S, Menotti A, De Backer G, et al; SCORE project group. Estimation of ten-year risk of fatal cardiovascular disease in Europe: the SCORE project. *Eur Heart J* 2003; 987-1003.
- Stensvold I, Tverdal A, Urdal P, Graff-Iversen S. Non fasting serum triglyceride concentration and mortality from coronary heart disease and any cause in middle aged Norwegian women. *BMJ* 1993; 307:1318-22.
- Al-Nozha MM, Arafah MR, Al-Mazrou YY, Al-Maatouq MA, Khan NB, Khalil MZ, et al. Coronary artery disease in Saudi Arabia. Saudi Med J 2004; 25:1165-71.
- Steingart RM, Packer M, Hamm P, Coglianese ME, Gersh B, Geltman EM, et al. Sex differences in the management of coronary artery disease. N Engl J Med 1991; 325:226-30.
- Sarrafzadegan N, Rabiei K, Shirani S, Kabir A, Mohammadifard N, Roohafza H. Drop-out predictors in cardiac rehabilitation programmes and the impact of sex differences among coronary heart disease patients in an Iranian sample: a cohort study. *Clin Rehabil* 2007; 21:362-72.
- Chor J, Oswald L, Briller J, Cowett A, Peacock N, Harwood B. Reproductive health experiences of women with cardiovascular disease. *Contraception* 2012; 86:464-9. doi: 10.1016/j.
- Iso H, Date C, Yamamoto A, Toyoshima H, Tanabe N, Kikuchi S, et al. Perceived mental stress and mortality from cardiovascular disease among Japanese men and women: the Japan Collaborative Cohort Study for Evaluation of Cancer Risk. *Circulation* 2002; 106:1229-36.
- Dewi FS, Weinehall L, Ohman A. Maintaining balance and harmony': Javanese perceptions of health and cardiovascular disease. *Glob Health Action* 2010; 3.doi: 10.3402/gha.v3i0.4660.
- Hällström T, Lapidus L, Bengtsson C, Edström K. Psychosocial factors and risk of ischaemic heart disease and death in women: a twelve-year follow-up of participants in the population study of women in Gothenburg, Sweden. J Psychosom Res 1986; 30:451-9.
- Rugulies R. Depression as a predictor for coronary heart disease. a review and meta-analysis. Am J Prev Med 2002; 23:51-61.
- Sharkey SW, Lesser JR, Zenovich AG, Maron MS, Lindberg J, Longe TF, et al. Acute and reversible cardiomyopathy provoked by stress in women from the United States. *Circulation* 2005; 111:472-479.
- Auerbach JD1, Figert AE. Women's health research: public policy and sociology. J Health Soc Behav 1995; Spec No:115-31.
- Holdcroft A. Gender bias in research: how does it affect evidence based medicine? JRSoc Med 2007; 100:2-3.
- World Health Organization. Milestones in health promotion: statements from global conferences. Cited (2015). Available from http://www.who.int/healthpromotion/Milestones_ Health_Promotion_05022010.pdf
- Alfredsson J, Stenestrand U, Wallentin L, Swahn E. Gender differences in management and outcome in non-STelevation acute coronary syndrome. *Heart* 2007;93:1357-62.
- Perelman J, Mateus C, Fernandes A. Gender equity in treatment for cardiac heart disease in Portugal. Soc Sci Med 2010; 71:25-9. doi: 10.1016/j.
- Maas AH, Appelman YE. Gender differences in coronary heart disease. Netherlands Heart Journal 2010; 18:598-603.
- 42. Mosca L, Jones WK, King KB, Ouyang P, Redberg RF, Hill MN. Awareness, perception, and knowledge of heart disease risk and prevention among women in the United States. American Heart Association Women's Heart Disease and Stroke Campaign Task Force. Arch Fam Med 2000; 9:506-15.
- Will JC, Farris RP, Sanders CG, Stockmyer CK, Finkelstein EA. Health promotion interventions for disadvantaged women: overview of the wisewoman projects. J Womens Health (Larchmt) 2004; 13:484-502.
- 44. Moran B, Walsh T. Cardiovascular Disease in Women. *Nursing for Women's Health* 2013; 17:63-68.
- Long T, Taubenheim A, Wayman J, Temple S, Ruoff B. "The Heart Truth:" Using the Power of Branding and Social Marketing to Increase Awareness of Heart Disease in Women. Soc Mar Q 2008; 14:3-29.
- Stewart M, Kushner KE, Gray J, Hart DA. Promoting gender equity through health research: impacts and insights from a Canadian initiative. *Glob Health Promot* 2013; 20:25-38. doi: 10.1177/1757975913476903.