Educational Administration: Theory and Practice
2024, 30(5), 6496 - 6502
ISSN: 2148-2403
https://kuey.net/

Research Article

Knowledge About Health And Human Rights Among Saudi Medical Students: Towards A New Era In Medical Education

Samia. M. Al-Amoudi[1*], Jawaher. R. Al-Ahmadi[2], Souzan. M. Kafy[3], Sarah. M. Bugshan[4], Maram T. Alkhatieb[5], May.S. Kadi[6], Sulafa. T. AlQutub[7], Naabeel. S. Bondagji[8]

[1*1*]Founder of Health Empowerment and Health Rights Unit, Department of Obstetrics and Gynaecology Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia
[2] Department of Family Medicine, Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia., Member of Health Empowerment and Health Rights Unit.
[3] Department of Obstetrics and Gynaecology, Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia., Member of Health Empowerment and Health Rights Unit.
[4] Nursing Department, King Abdulaziz University Hospital, Jeddah, Saudi Arabia., Member of Health Empowerment and Health Rights Unit.
[5] Division of General Surgery, Department of Surgery, Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia., Member of Health Empowerment and Health Rights Unit.
[6] Department of Community Medicine, Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia.
[7] Department of Family and Community Medicine, College of Medicine, University of Jeddah, Saudi Arabia; Member of Health Empowerment and Health Rights Unit; Member of Advisory Committee for Health Empowerment and Health Rights Unit.
[8] Department of Obstetrics and Gynaecology, Faculty of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia., Member of Advisory Committee for Health Empowerment and Health Rights Unit.

Corresponding Author: Samia. M. Al-Amoudi
Email: dr.samia_amoudi@hotmail.com

Citation: Samia. M. Al-Amoudi, et.al (2024), Knowledge About Health And Human Rights Among Saudi Medical Students: Towards A New Era In Medical Education, *Educational Administration: Theory and Practice, 30(5), 6496 - 6502 Doi:* 10.53555/kuey.v30i5.3967

ARTICLE INFO

ABSTRACT

Objectives: Medical curricula in Saudi Arabia have limited focus on health and human rights. This study evaluated a health rights education course's impact on medical students' awareness of health empowerment and rights.
Methods: An intervention was conducted at a Western Saudi Arabian medical faculty with 5th-year students in their Obstetrics and Gynecology rotation. They were assessed using a questionnaire about health empowerment, reproductive health rights, and rights of vulnerable groups. It was administered preintervention, early post-intervention, and in the rotation's last week. Anonymity and voluntary participation were emphasized.
Results: 181, 158, and 225 students participated in the three respective assessments. Both post-intervention assessments revealed increased awareness of health empowerment, reproductive health rights, and health rights. There were gender differences, with females showing heightened awareness of health empowerment and certain women's rights, while males had more knowledge about HIV rights.
Conclusion: Introducing health and human rights in medical curricula enhances students' knowledge, narrows gender differences in reproductive health rights, and underlines healthcare providers' role in fostering patient empowerment and observing patient rights.

Keywords: Education, Health Rights, Health Empowerment, Law, Human rights, Saudi Arabia

Introduction

The World Health Organization (WHO) defines health education as “any combination of learning experiences designed to help individuals and communities improve their health by increasing their knowledge or influencing their attitudes”.[1] Health education provides opportunities to acquire the necessary information and skills required to make health decisions.[2]

In 2000, the United Nations (UN) provided a detailed elaboration of state responsibilities to protect, promote, and fulfill the right of individuals to the “highest attainable standard of physical and mental health,” as stipulated in Article 12 of the International Covenant on Economic, Social and Cultural Rights (ICESCS).[3] Under Article 44 of the ICESCS, General Comment 14 requires that states "provide appropriate training for health personnel, including education on health and human rights.” The World Medical Association (WMA)
considers human rights and medical ethics to be an “integral part of the work and culture of the medical profession,” and therefore, the “teaching of Medical Ethics and Human Rights should be included as an obligatory course in their curricula”.[4] Furthermore, it is important to distinguish bioethics from human rights. That is, bioethics principles are codes of conduct that regulate clinical encounters with individual patients; hence, they do not attempt to define health and well-being.[5,6]

The first medical school in Saudi Arabia was established in 1969 by the Ministry of Education and was named King Saud University. King Abdulaziz University (KAU) Faculty of Medicine followed in 1975. Thereafter, various medical schools were established in different regions of the Kingdom.[7] Medical students in Saudi Arabia have little opportunity, if any, to learn human and health rights and legal aspects of medical practice. Local data suggest that the current medical curricula failed to cover issues related to policies and procedures of the Ministry of Health (MOH), which include women’s rights, reproductive health rights, rights of vulnerable groups, e.g., disabled, elderly, and cancer patients, and others are lacking in our curricula.[8] Hence, medical students and healthcare providers lack awareness and empowerment in policies and procedures that are established by the MOH to protect health rights in general and women’s health rights in particular.[9,10] This reflects the unmet need by the medical community for curricular reforms that integrate general and specific health rights.[8]

Healthcare providers need to learn law and health rights policies and procedures not only to protect themselves from litigation but also to ensure better respect for patient rights and safety to meet the goals and standards of healthcare practice.[11] Patient rights and safety are major topics in modern medical research and practice, both in Saudi Arabia and globally. Nevertheless, the 2014 Jeddah Declaration on Patient Safety reported “a high burden of unsafe care and poor compliance with even the minimal levels of safety in health care” in the Eastern Mediterranean region.[12] More critically, inadequate awareness about rules and regulations in health care rights contributes to increased morbidity and mortality.[13]

As a member state of the UN, the government of Saudi Arabia released a voluntary national review in 2018, which reported the progress made by the Kingdom regarding the UN 2030 Agenda for the 17 Sustainable Development Goals (SDGs).[14] The SDGs comprise several goals and targets related to promoting health, gender equality, and the ability to make decisions about one’s own health.[15] The Saudi national vision 2030 includes multilevel goals, and two of the overarching objectives state the government's direction to strengthen the Islamic and national identity and offer a fulfilling and healthy life for all the citizens. Furthermore, third-level objectives included actions to support values of equity and empowering citizens through the welfare system.[16] In line with the national and international visions, the Faculty of Medicine of KAU was the first among the universities in Saudi Arabia and Gulf Cooperation Council (GCC) countries to introduce health empowerment and human rights in its curricula in 2016. The present study evaluated the effectiveness of the health rights education course implemented in the KAU Faculty of Medicine by assessing the levels of awareness and knowledge among KAU medical students about health empowerment and health rights rules and regulations before and after the course uptake.

Methods Design and Setting

A prospective pre-post-intervention design study was conducted at the Faculty of Medicine of KAU, Jeddah, Saudi Arabia, from September to December 2016. Ethical and administrative approvals were obtained from the Dean of the Faculty of Medicine and the research ethics committee of KAU (Ref.No. 489-16). The study was designed and conducted in compliance with the universal ethical standards of confidentiality and freedom of participation.

Population

The study involved all 5th-year medical students (N=380) who were undergoing the Obstetrics and Gynecology rotation during the study period. For any assessment time, convenience sampling was used to include all eligible students who were present during the assessment session. Thus, 181 students attended the first session of the education program (lecture) and underwent the pre-intervention assessment. Of the 181 who attended the intervention lecture, 158 participated in the early post-intervention assessment. On the

other hand, 225 students out of the total 380 eligible students participated in the delayed post-intervention assessment. The participants' flowchart is presented in **Figure 1**.

Intervention

The intervention consisted of educational content that covered the most important issues related to health empowerment and health rights, in addition to typical responses to all pre-intervention assessment questions. The intervention was delivered in two steps, using two complementary sessions via a lecture and a tutorial, respectively.

1. The lecture session

An oral presentation in the English language, using pre-designed PowerPoint slides, was delivered during the first week of the Obstetrics and Gynecology rotation at the conference room of the Faculty of Medicine of KAU.

The lecture duration was approximately 45 minutes and contained the most important information related to health empowerment and health rights, and was further supported by information about law and health rights regulation policy in Saudi Arabia. Additionally, responses and detailed explanations were provided for all the pre-intervention assessment questions.

2. The tutorial session

The tutorial was carried out during the last week of the Obstetrics & Gynecology rotation. Students were divided into four groups. The tutorial included six problem-based cases for discussion, each being designed to cover a unique health rights dilemma and was discussed by the group for 20 min. During the tutorial, misconceptions and poor attitudes toward health empowerment and health rights were identified and discussed. The whole tutorial lasted two hours, during which each group had the opportunity to discuss all six problem-based cases. It is to be noted that some of the students who did not attend the lecture attended the tutorial.

Tools

Arabic, self-administered, four-part questionnaire was used for the three assessments. The questionnaire was pre-tested and validated in a previous study.[8] The first part of the questionnaire covered demographic data such as gender, marital status, etc. The second part assessed self-reported awareness about health empowerment and health rights in general and eventual exposure and sources of information. It included five close-ended questions such as "have you ever heard of health empowerment?", "Have you seen any educational materials about health rights in the hospital?", "Does the system in Kingdom of Saudi Arabia support the rights of the Disabled?" etc. The third part assessed the students' perceptions and attitudes about the health rights impact of health and whether the rights of vulnerable individuals, including disabled persons and the elderly, are supported by the Saudi system (three items). The fourth part assessed the students' knowledge about reproductive health rights and comprised five close-ended questions such as "do women need guardian approval for Hospital admission?", "does a woman have the right to sign medical consent for herself in cesarean delivery?" etc. For all items of the questionnaire parts 2, 3, and 4, three answering options were provided for each question, including "yes," "no," or "I do not know."

The questionnaires were distributed to the participants as hard copies and were administered and collected anonymously, with respect to voluntary participation and confidentiality. Given the sensitiveness of the study topic, the principles of anonymity and voluntary participation were emphasized to enhance the reliability of the responses and, notably, to prevent social desirability bias.

Comparative approach

The questionnaire was administered three times as follows: before the lecture session (pre-intervention assessment); immediately after the end of the lecture (early post-intervention assessment); and during the last week of the Obstetrics & Gynecology rotation (delayed post-intervention assessment). The evaluation of the intervention efficacy was based on the comparison between pre- versus post-intervention assessments considering the overall levels of knowledge and awareness of the student and not the paired changes. This is based on the hypothesis that an efficacious intervention would induce a significant increase in the overall students' level of health empowerment and health rights knowledge and awareness, regardless of the intrasubject improvement. Furthermore, a paired analysis would be incompatible with the abovementioned principles of anonymity and voluntary participation.

Statistical methods

Descriptive statistics were carried out to present the patterns of answers to the different questionnaire parts and items. Frequencies and percentages were used for categorical variables, while mean and standard deviation (SD) were used for continuous variables such as age. Early and delayed post-intervention demographics and assessments were compared to pre-intervention time using Chi-square or Fisher's exact test for categorical variables, as applicable and independent t-test for continuous variables. An alpha level < 0.05 was considered for significance. The statistical analysis was conducted using Stata version 14.2.

Results

Participants' characteristics in the three assessment sessions

One hundred and eighty-one students completed the pre-intervention questionnaire, while 158 and 225 completed the early and delayed post-intervention assessments, respectively. The comparisons of demographic characteristics between the three groups are presented in Table 1. The mean age of the participants in all three groups was comparable, ranging from 22.1 years in pre-intervention group to 22.4 in delayed post-intervention group; however, due to a higher variance in pre-intervention group (SD=1.39) the comparisons with the two other groups was statistically significant ($p<0.05$). Furthermore, the male proportion was relatively lower in delayed post-intervention (46.7%) compared with pre-intervention (55.8%), but the result was not statistically significant ($p=0.067$). Otherwise, no notable differences between the preintervention and post-intervention groups in terms of nationality and marital status. These findings support the comparability of the three groups in terms of demographic factors.

Early impact of the intervention on awareness and perceptions about health rights and health empowerment

There was a remarkable increase in self-reported awareness level about health empowerment (39.8 % to 89.2%; $p<0.001$) and health rights (53.6% to 91.8%; $p<0.001$), as well as in self-reported exposure to health rights explanation by a doctor (26.0% to 48.7%; $p<0.001$) and inclusion of health rights in the medical curriculum (61.3% to 89.2%; $p<0.001$) from pre- to early post-intervention assessment, respectively. Likewise, there was an increase in the awareness rate about both the disabled (from 50.3% to 77.2%) and the elderly (from 45.3% to 73.4%) rights, and this was statistically significant ($p<0.001$), from pre- to delayed postintervention assessment, respectively. However, we observed high awareness rates about the importance of health rights knowledge in improving one's health in the pre-intervention assessment (91.2%), which further increased in early post-intervention to 97.5% but without statistical significance ($p=0.075$) (Table 2).

Delayed efficacy of the intervention in improving awareness and perceptions about health rights and health empowerment

With reference to pre-intervention, delayed post-intervention assessments showed a significant increase in the awareness rate regarding all five items of the questionnaire's part 2. This included self-reported awareness about health empowerment (39.8% to 75.1%; $p<0.001$), health rights (53.6% to 79.6%; $p<0.001$), and whether the medical curriculum contains health rights material (61.3% to 81.3%; $p<0.001$), from pre- to delayed postintervention assessment, respectively. Additionally, more students declared being exposed to health rights concepts by a doctor (26% to 42.2%; $p=0.002$) or by means of educational materials in the hospital (25.4% to 43.6%; $p<0.001$), from pre- to delayed post-intervention assessment, respectively. Regarding perceptions, there was an increase in the awareness rate about both the disabled (from 50.3% to 64.9%; $p=0.002$) and the elderly rights (from 45.3% to 61.8%; $p<0.001$). Similar to early post-intervention, there was no significant change in the awareness levels about the importance of health rights knowledge in improving one's health ($p=0.075$) (Table 2).

Delayed efficacy of the intervention in improving knowledge about reproductive health rights

We observed a significant improvement in knowledge levels regarding 4 out of 5 items related to reproductive health rights from pre- to delayed post-intervention assessments. Regarding the need for a guardian approval for a woman's hospitalization or medical care, the rate of the correct answer (No) increased from 37.0% and 45.9% to 64.9% and 74.2%, respectively ($p<0.001$). Likewise, regarding the woman's right to sign a consent for herself regarding cesarean delivery, the percentage of correct answers (yes) increased from 61.3% to 71.0% ($p=0.050$). Finally, knowledge about the existence of HIV rights in Saudi Arabia increased from 29.3% to 44.9% ($p<0.001$) (Table 3).

Gender differences in awareness and knowledge about health rights, health empowerment, and reproductive health rights

In pre-intervention assessments, we identified a marked disparity between male and female respondents in terms of health empowerment awareness, with females demonstrating superior comprehension (55.0% compared to 27.7%, $p<0.001$). Moreover, concerning the updated regulation which eliminates the requirement for guardian consent during a woman's hospitalization, females exhibited a notably higher accuracy rate (47.5%) compared to their male counterparts (28.7%, $p<0.001$). This trend persisted when addressing the necessity of guardian approval for general medical care, with 55.0% of females correctly identifying the current guidelines compared to 38.6% of males ($p=0.022$). (Table 4). However, in delayed post-intervention assessment, no significant difference was observed regarding the awareness about health empowerment; however, a difference remained regarding the need for a guardian approval for hospital admission, where males had a lower correctness rate (58.1%) compared with females (70.8%), and this was statistically significant ($p=0.025$). On the other hand, males had a higher level of knowledge (52.4%) about

the existence of specific health rights for HIV patients in Saudi Arabia compared with females (38.3%), and this was statistically significant (p=0.045).

Discussion

Our study assessed the introduction of human and health rights in the curriculum of a Saudi medical school. To offer the best quality of healthcare, universities should invest in learning resources that provide medical students with current information and expertise. Courses on human rights inherent to healthcare must be part of the curriculum of all medical schools worldwide, as building knowledge has the potential to change society and empower advocacy. Additionally, the assessment process is essential for determining whether medical students integrated the key notions and whether the educational content met the global standard of quality. The findings from the present study are motivating and inspiring overall, although they raise some concerns and observations.

The intake of the educational intervention improved overall students' awareness and knowledge about health and human rights both in early and delayed post-intervention assessments. Additionally, we observed a significant increase in awareness about the rights of the disabled and elderly and their inclusion in the Saudi system as an effect of the intervention. Such as issue is directly connected to equity in healthcare. In other regions of the world, like the USA, research suggests that a significant proportion of physicians are unaware of their legal obligations toward disabled patients; and hence, they need to be educated regarding the rights of disabled people.[17] Another survey among 714 American doctors revealed that only 40.7% were very confident in their capacity to provide disabled patients with equal quality care.[18] This raises interrogations about Saudi physicians' awareness of disabled patients' rights, indicating the relevance of probing into the issue. Likewise, Alamri and al. have suggested in a literature review about physicians' attitudes toward elderly patients that more studies are warranted to inform evidence-based practice regarding their health rights in Saudi Arabia.[19] It can be assumed that, because of the recent introduction of health rights in the medical curricula, the new generations of Saudi physicians will have a higher awareness about both disabled and elderly patients' rights than their older peers.

One of the interesting observations in baseline assessments was that medical students were familiar with the importance of health rights knowledge in improving one's health, probably due to the intuitive nature of the concept. In comparison with the study that was done in the same institution, KAU, one year prior to the inclusion of patient health rights in the curricula of health schools, Saudi medical students had a poor understanding of health rights.[8] Our study revealed that the intervention and assessments showed an overall increase in awareness of health empowerment in both males and females, awareness of health rights, and reproductive health rights, both in short and long terms.

While the intervention improved the knowledge of students with regards to reproductive health rights and enabled the reduction of gender discrepancy, a significant lack of knowledge remained among male students in the delayed post-intervention assessment regarding whether women still needed guardian approval for hospital admission. This gender difference could be explained by sociocultural norms that are related to women's legal and social status in Saudi Arabia. Male students are likely to be less aware of the reform that involved the guardianship system, which used to require the agreement of a male relative before a woman could be provided with a significant healthcare service, besides other administrative procedures related to employment, education, or travel.[20] On the other hand, female medical students might be more knowledgeable about the new reform voiding the requirement of a guardian approval for the hospital admission. Female students may perceive more easily the potential consequences of limitations on autonomy for health decisions in critical situations, for example, refusing the transfer of a pregnant woman to the hospital to give birth without a guardian's permission.[21] Such lack of knowledge among physicians may have a direct impact on women's safety and contributes to morbidity and mortality. Therefore, strengthening medical students' comprehension of reproductive health rights is crucial to enhance gender equity in healthcare and protecting Saudi female patients' rights. Generally speaking, sexual and reproductive health is subject to a substantial lack of knowledge and several misconceptions among the general Saudi population, which is imputable to the lack of access to reliable information and adequate education and awareness-raising material.[22,23] Although not contradictive Islamic values, in essence, formal sex education is controversially debated in traditional and conservative societies and is often opposed by protective views, notably against the exposure of children and adolescents to a knowledge that is regarded as 'dangerous'.[24] Consequently, we noted lack of official sexual and reproductive health education in schools in the majority of Muslim countries.[25] Another pathway for sexual and reproductive education can be achieved by involving healthcare providers in sex education programs, which would enhance the physicians' ability to deal with patients' sexuality issues and enhance the sexual and reproductive health education of Saudi women.[25,26]

Another statistically significant gender difference in knowledge was observed in the delayed post-intervention assessment; that is, male medical students had a higher level of knowledge about the existence of specific health rights for HIV patients in Saudi Arabia compared with females. In agreement with this finding, a recently published cross-sectional study that evaluated general knowledge of HIV among the general population in the Kingdom of Saudi Arabia found that men had a higher knowledge score than

women.[27] The gap in knowledge could be linked to the higher prevalence of HIV cases among males, which account for 90% of total cases,[28] and which results in a greater concern about the disease among the male groups. However, such an explanation may not apply to highly educated medical students, as evidence from another study revealed that the physician's gender was not statistically associated with HIV knowledge in Saudi Arabia.[29] Nevertheless, there is no published research study investigating the Saudi physicians' knowledge of HIV patients' rights to date. We recommend future studies to examine the gender differences in knowledge about reproductive health and HIV patients' rights among both medical students and physicians in Saudi Arabia.

Limitations

Our study has few limitations. We suspect a slight lack of clarity of communication between the participants and investigators, as a small proportion of the students were likely to not understand that the lecture they had attended was included in the curriculum. This questions us whether students may have experienced other miscommunications which would have impacted their understanding and their answers to the assessments. The second limitation is the time course for the assessments, as an evaluation of the information intake in a longer term might have revealed other findings. The third limitation is related to the self-assessed awareness and knowledge concerning some items of the questionnaire, which may be subject to social desirability bias. Nonetheless, the significance of our study is in demonstrating the extent of the knowledge gap regarding health and human rights and laws in Saudi Arabia and to highlight the unmet and urgent need to implement effective education programs for medical students to promote and protects these rights towards a vision of excellence in healthcare, in line with the Kingdom's vision and ongoing reforms.

Conclusion

The inclusion of health and human rights in the formal medical curricula is vital to enhance the quality of care for our population. The implementation of relevant content during the gynecology and obstetrics rotation enabled the improving the students' knowledge and alleviating the gender disparity, notably regarding reproductive health rights. Given the ongoing reforms and the current status of knowledge among the general population, healthcare providers as more than ever responsible for enhancing the health empowerment of their patients and promoting rules and regulations of the Ministry of health that protect the patients' rights. The new era of medical education should entitle physicians and healthcare providers with the mission and progressive vision towards values of equity, safety, and autonomy for patients to achieve excellence in healthcare.

Acknowledgments

We thank all the medical students who participated in this study.

Declaration of interest

No conflicts of interest.

References

1. Orbell S, Schneider H, Esbitt S, Gonzalez JS, Gonzalez JS, Shreck E, et al. Health education. In: Encyclopedia of behavioral medicine. New York, NY: Springer New York; 2013: 917–918.
2. Gold RS and Miner KR. Report of the 2000 Joint Committee on Health Education and Promotion Terminology. J Sch Health. 2002;72:3–7.
3. Hertel S, Minkler L. International covenant on economic, social, and cultural rights. In: economic rights. 2009: 385–394. Available from: https://www.ohchr.org/en/instrumentsmechanisms/instruments/international-covenant-economic-social-and-cultural-rights (accessed on 30Sep-2023).
4. WMA Resolution on the Inclusion of Medical Ethics and Human Rights in the Curriculum of Medical Schools World-Wide – WMA – The World Medical Association. Available from: https://www.wma.net/policies-post/wma-resolution-on-the-inclusion-of-medical-ethics-and-humanrights-in-the-curriculum-of-medical-schools-world-wide/ (accessed 30-Sep-2023).
5. Iacopino V. Teaching human rights in graduate health education. Health and human rights: the Educational Challenge Boston: François-Xavier Bagnoud Center for Health and Human Rights. 2002;21–42. Available from: https://www.hrea.org/wp-content/uploads/2020/11/Teaching-Human-Rights-in-GraduateHealth-Education.pdf)accessed 30-Sep-2023)
6. Benatar SR and Fox RC. Meeting threats to global health: A call for American leadership. *Perspect Biol Med*. 2005;48:344–361.

7. Harrell GT. Medical education in Saudi Arabia. *Ann Intern Med*. 1976;85:677-678.
8. Al-Amoudi SM, Al-Harbi AA, Al-Sayegh NY, Eldeek BS, Kafy SM, Al-Ahwal MS, et al. Health rights knowledge among medical school students at King Abdulaziz University, Jeddah, Saudi Arabia. *PLoS One*. 2017;12:e0176714.
9. Alghanim SA. Assessing knowledge of the patient bill of rights in central Saudi Arabia: a survey of primary health care providers and recipients. *Ann Saudi Med*. 2012;32:151–5.
10. El-Sobkey SB, Almoajel AM, Al-Muammar MN. Knowledge and attitude of Saudi health professions' students regarding patient's bill of rights. *Int J Health Policy Manag*. 2014;3:117-122.
11. Williams PC and Winslade W. Educating medical students about law and the legal system. *Acad Med*. 1995;70:777–786.
12. World Health Organization. Report on the regional consultation on improving quality of care and patient safety in the Eastern Mediterranean Region, Jeddah, Saudi Arabia, 9-11, June 2014. World Health Organization. Regional Office for the Eastern Mediterranean. 2015. Available at https://iris.who.int/handle/10665/253402 (accessed on 29-Sep-2023).
13. Al-Amoudi SM. Health empowerment and health rights in Saudi Arabia. *Saudi Med J*. 2017;38:785-787.
14. Sustainable development knowledge platform. United Nations Department of Economic and Social Affairs. Saudi Arabia. 2018. Available from: https://sustainabledevelopment.un.org/memberstates/saudiarabia (accessed on 29-Sep-2023).
15. Galati AJ. Onward to 2030: sexual and reproductive health and rights in the context of the Sustainable Development Goals. Guttmacher Institute, 2015;18.
16. Saudi Vision 2030. KSA Vision 2030 Strategic objectives and vision realization programs. Saudi Arabia government. 2016;4. Available from: https://docplayer.net/164146677-Ksa-vision-2030-strategicobjectives-and-vision-realization-programs.html (accessed on 29-Sep-2023).
17. Agaronnik ND, Pendo E, Campbell EG, Ressalam J, Iezzoni LI. Knowledge of practicing physicians about their legal obligations when caring for patients with disability. *Health Aff*. 2019;38:545–53.
18. Iezzoni LI, Rao SR, Ressalam J, Bolcic-Jankovic D, Agaronnik ND, Donelan K, et al. Physicians' perceptions of people with disability and their health care. *Health Aff*. 2021;40:297–306.
19. Alamri BH, Xiao LD. Health professionals' knowledge and attitudes toward older people in primary care in Saudi Arabia. *Saudi Med J*. 2017;38:229–36.
20. Aldosari H. The effect of gender norms on women's health in Saudi Arabia. Arab Gulf States Institute in Washington. Washington, DC; 2017. Available from https://agsiw.org/wpcontent/uploads/2017/05/Aldosari_Womens-Health_Online-1.pdf (accessed on 29-Sep-2023).
21. A student gives birth inside the Imam University building after a doctor refuses to transfer her to the hospital. *Saudi Research and Media*. Available from: https://akhbaar24.argaam.com/article/detail/166227 (accessed 29-Sep-2023).
22. Alharbi K, Alkharan A, Abukhamseen D, Altassan M, Alzahrani W, Fayed A. Knowledge, readiness, and myths about menstruation among students at the Princess Noura University. *J Family Med Prim Care*. 2018;7:1197-1202.
23. El-Tholoth H, Alqahtani F, Aljabri A, Alfaryan K, Alharbi F, Alhowaimil A, et al. Knowledge and attitude about sexually transmitted diseases among youth in Saudi Arabia. *Urol Ann*. 2018;10:198-202.
24. Tabatabaie A. Childhood and adolescent sexuality, Islam, and problematics of sex education: a call for reexamination. *Sex Education*. 2015;15:276–288.
25. Alomair N, Alageel S, Davies N, Bailey JV. Sexual and reproductive health knowledge, perceptions and experiences of women in Saudi Arabia: a qualitative study. *Ethn Health*. 2022;27:1310–1328.
26. Verrastro V, Saladino V, Petruccelli F, Eleuteri S. Medical and health care professionals' sexuality education: State of the art and recommendations. *Int J Environ Res Public Health*. 2020;17:2186.
27. Qashqari FS, Alsafi RT, Kabrah SM, AlGary RA, Naeem SA, Alsulami MS, et al. Knowledge of HIV/AIDS transmission modes and attitudes toward HIV/AIDS infected people and the level of HIV/AIDS awareness among the general population in the kingdom of Saudi Arabia: A cross-sectional study. *Front Public Health*. 2022;10:955458.
28. Ministry statistics. Ministry of Health Portal – Kingdom of Saudi Arabia. Available from: https://www.moh.gov.sa/en/Pages/Default.aspx (accessed on 29-Sep-2023).
29. Memish ZA, Filemban SM, Bamgboyel A, al Hakeem RF, Elrashied SM, Al-Tawfiq JA. Knowledge and attitudes of doctors toward people living with HIV/AIDS in Saudi Arabia. *J Acquir Immune Defic Syndr*. 2015;69:61–67.